MEASURE APPLICATIONS PARTNERSHIP

MAP Families of Measures: Safety, Care Coordination, Cardiovascular Conditions, Diabetes

FINAL REPORT

OCTOBER 2012

NATIONAL QUALITY FORUM

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EXECUTIVE SUMMARY

Users of healthcare performance measures, including the federal government, state Medicaid agencies, private sector health plans, and employers who purchase healthcare on behalf of their employees are faced with daunting choices when selecting measures for use in various accountability programs. Measure users now comb through hundreds of measures, one by one, building their performance measurement 'team'—hoping that experience and intuition will lead them to select the best available measures that will generate the information needed to drive the improvement and value they ultimately seek. While many of their choices are evidence-based, the measure selection process still suffers from a lack of precision in the form of generally accepted selection criteria and a dearth of available data.

This current approach raises concerns. First, measure users are choosing different measures to evaluate the same thing. This generates inconsistent and confusing information that clouds the performance picture, and places an enormous administrative burden on providers who must navigate and be responsive to multiple and highly variant requests for data. Second, measures in use typically only evaluate one condition (i.e., cancer) or setting (i.e., cancer hospital) at a time, even though a person with cancer may see upwards of ten different providers in a handful of settings. This use of measures creates an incomplete snapshot of healthcare and loses individuals within that blurry picture. Instead, individuals need consistent, clear information to support active participation in their health and health care.

An analogy to this selection process can be found when contrasting how children pick teams for playground games compared to professional scouting. For playground games, one person is given the unenviable job of building a team from a sea of eager faces. The picker starts choosing teammates based on some known factors – size, past game performance – and some unknowns such as perceived strength or toughness. In this way, teams form based on partial fact and partial hunch, producing uneven results and often teams that are completely misaligned relative to their abilities. Professional scouting, on the other hand, is a much more refined, data-driven process for building teams. Draft picks are evaluated for their raw talent but also how they will complement others on the team or fill critical skills gaps. Players are recruited for a distinct purpose for their team.

Measure users are eager to move to a more mature, sophisticated approach to measure use—the pro scouting version of measure selection. How do we refine the current process to achieve this model? In a sea of measures, all of which serve a purpose, how do we begin to distinguish those that stand the greatest chance of making our healthcare safer and more affordable, and make people and their communities healthier? How do we ensure that information coming from programs using measures is sending consistent signals?

This report presents a new way of thinking about and organizing measures for use—called families of measures. The intention of creating families of measures is to help move the field toward a more patient-driven, integrated, and synchronized approach to measuring healthcare performance. It is also a new way to help signal high-priority measure development needs that if rapidly filled, would offer a more complete and coherent assessment of quality.

Conceptually, families give implementers a pre-screened group of measures carefully selected to work cohesively in pursuit of specific healthcare improvement goals such as making care safe or affordable. These families of measures would transcend any specific healthcare service location in order to evaluate a patient's experience through healthcare settings over time, rather than in snippets. Both public and private sector measure users could rely on and use this pre-screened set, leading to more consistent information that can guide patient choice and make healthcare market performance more transparent and easy to analyze.

The families of measures concept presented in this report is a product of the Measure Applications Partnership (MAP). Convened by the National Quality Forum (NQF), the MAP's primary purpose is to provide input to HHS on selecting performance measures for public reporting, performance-based payment programs, and other purposes. MAP is made up of more than 60 organizations representing major stakeholder groups, 40 individual experts, and nine federal agencies. This report is an extension of MAP's advisory work on strategic measure use at the federal level, and how federal use of healthcare quality measures can help drive a synchronistic, unified approach with the private sector.

MAP selected safety, care coordination, cardiovascular conditions, and diabetes as its areas of focus for this first foray into developing its idea of families into actual recommendations and future considerations. These areas are specifically called out in the National Quality Strategy; advances in these areas offer significant promise for moving us to a more aligned and impactful national measurement strategy.

In total, MAP reviewed 676 measures across these topics, using criteria laid out in this report to help decide which measures warranted inclusion in a family. Of these, MAP recommended 55 safety, 60 care coordination, 37 cardiovascular, and 13 diabetes measures for inclusion in the measure families (see Families of Measures Summary). Key considerations in their deliberations included:

- Patient-caregiver engagement is key to improvement
- Measures should contribute to a push toward evaluating 'systemness' versus silos
- Preferential view of outcomes measures over process and structural measures, recognizing some of the latter measures are valuable
- Cost of care is an important consideration when constructing a family
- NQF-endorsed measures should be preferentially included in families given the evidence base and consensus process behind them
- Readmissions measurement should be considered as part of a larger care coordination context

In its deliberations on best available measures for inclusion in families, MAP also focused on measure ideas that warrant inclusion but where no measures currently exist. These gaps, mentioned frequently throughout this report, are intended to send a very strong signal to measure developers and those who fund them about which priorities need the community's attention, resources, and focus. MAP members, and those who participated in public commenting, noted that leadership is needed for establishing a well-funded, national measure development agenda to address priority measure gaps. Frustration over the pace of measure development in certain areas such as care coordination and patient-reported outcomes came through as a concern that may thwart timely

availability of the performance measures needed most by our nation.

Data is critical to making families a more useful construct, and its availability came up across all MAP work in developing measure families. For example, any kind of measurement designed to follow a patient requires patient data and information that will seamlessly follow a patient through a full episode of care. Specific to areas such as care coordination, where clinical hand-offs happen and patients often experience setbacks, timely data is an essential underpinning in ensuring quality, continuous, integrated care that protects a person and follows their wishes.

The families of measures will serve as a starting place and guide for MAP's recommendations to HHS about the best available measures for specific programs, but that are related across settings. The families are also intended to inform private-sector program implementers who are looking to select measures that are consistent with other programs. Consistently applied, families of measures will promote patient-centered care across settings, stronger incentives for providers from various payers and purchasers, and decreased burden of reporting for providers. Ultimately, all will benefit from the emergence of a comprehensive picture of quality across settings.

MAP anticipates completing families of measures for additional topics in 2013, including patient and family engagement, population health, affordability/cost, and mental health. These topics address the remaining NQS priorities and an additional high-impact condition. Development of these families, in addition to the ones presented in this report, would represent a significant new model for envisioning a nationally consistent application of healthcare performance measures.

Our national healthcare challenges are too big, with too much at stake to continue the status quo. MAP has put forward a novel concept to assist in selecting the best performance measures that are aligned across uses, and stresses that feedback from the field will be the ultimate guide for improving and refining MAP's work.

FAMILIES OF MEASURES SUMMARIES

The following tables summarize the Safety, Care Coordination, Cardiovascular Conditions and Diabetes Families of Measures. NQF endorsement is indicated by the 4 digit number accompanying the measure title.

TABLE 1. SAFETY FAMILY OF MEASURES BY LEVEL OF ANALYSIS AND CARE SETTING

(Detailed information regarding the Safety Family of Measures begins on page 33.)

Safety Topic Area	Clinician		Hospital		Post-Acute		Long-Term Care		Priority Measure Gap Areas
	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	
Example Public Programs*	**PQRS, EP-MU**	**PQRS, EP-MU, Value Modifier**	**VPB, IQR, Hosp MU, Psych, Cancer**	**OQR, ASC**	**IRF**	**OP Rehab**	**LTCH, NH**	**HH**	
Venous Thromboembolism (VTE)		#0581 Deep Vein Thrombosis Anticoagulation >= 3 Months #0593 Pulmonary Embolism Anticoagulation >= 3 Months	#0450 PSI 12: Post-Operative PE or DVT #0376 VTE-6: Incidence of Potentially-Preventable VTE						• Adherence to VTE medications, monitoring of therapeutic levels and medication side effects • Monitoring for VTE recurrence • VTE outcome measures for ASCs and PAC/LTC settings
C. Difficile			#1717 NHSN Facility-wide Inpatient Hospital-onset Clostridium difficile Infection (CDI) Outcome Measure		#1717 NHSN Facility-wide Inpatient Hospital-onset Clostridium difficile Infection (CDI) Outcome Measure		#1717 NHSN Facility-wide Inpatient Hospital-onset Clostridium difficile Infection (CDI) Outcome Measure	#1717 NHSN Facility-wide Inpatient Hospital-onset Clostridium difficile Infection (CDI) Outcome Measure	• Vancomycin Resistant Enterococci (VRE) measures, including an outcome measure of positive blood culture results as well as use of appropriate antibiotics to reduce incidence • Ventilator-associated events for acute, PAC, LTCH and home health settings • Post-discharge follow up on infections in ambulatory settings • Special considerations for the pediatric population related to ventilator associated events and C. difficile • Infection measures reported as rates, rather than ratios (more meaningful to consumers) • Sepsis (healthcare-acquired and community-acquired) incidence, early detection and monitoring
Catheter Associated Urinary Tract Infection (CAUTI)			#0138 NHSN CAUTI Outcome Measure		#0138 NHSN CAUTI Outcome Measure		#0138 NHSN CAUTI Outcome Measure	#0138 NHSN CAUTI Outcome Measure	
Central Line Associated Bloodstream Infection (CLABSI)			#0139 NHSN CLABSI Outcome Measure		#0139 NHSN CLABSI Outcome Measure		#0139 NHSN CLABSI Outcome Measure	#0139 NHSN CLABSI Outcome Measure	
Methicillin-resistant Staphylococcus aureus (MRSA)			#1716 NHSN Facility-wide Inpatient Hospital-onset MRSA Bacteremia Outcome Measure		#1716 NHSN Facility-wide Inpatient Hospital-onset MRSA Bacteremia Outcome Measure		#1716 NHSN Facility-wide Inpatient Hospital-onset MRSA Bacteremia Outcome Measure	#1716 NHSN Facility-wide Inpatient Hospital-onset MRSA Bacteremia Outcome Measure	
Surgical Site Infection (SSI)			#0753 ACS-CDC Harmonized Procedure Specific SSI Outcome Measure #0529 SCIP INF–3 Prophylactic Antibiotics Discontinued within 24 Hours after Surgery End Time (48 hours for cardiac surgery)						
Sepsis	#0500 Severe Sepsis and Septic Shock: Management Bundle		#0304 Late sepsis or meningitis in Very Low Birth Weight (VLBW) Neonates (risk-adjusted) #0500 Severe Sepsis and Septic Shock: Management Bundle						
Healthcare Acquired Condition (HAI): Other		#0431 Influenza Vaccination Coverage among Healthcare Personnel	#0431 Influenza Vaccination Coverage among Healthcare Personnel	#0431 Influenza Vaccination Coverage among Healthcare Personnel			#0431 Influenza Vaccination Coverage among Healthcare Personnel		

Safety Topic Area	Clinican		Hospital		Post-Acute		Long-Term Care		Priority Measure Gap Areas
	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	
Example Public Programs*	**PQRS, EP-MU**	**PQRS, EP-MU, Value Modifier**	**VPB, IQR, Hosp MU, Psych, Cancer**	**OQR, ASC**	**IRF**	**OP Rehab**	**LTCH, NH**	**HH**	
Falls	#0141 Patient Fall Rate #0202 Falls with Injury #0266 ASC-2: Patient Fall	#0266 ASC-2: Patient Fall	#0266 ASC-2: Patient Fall #0141 Patient Fall Rate #0202 Falls with Injury	#0266 ASC-2: Patient Fall			#0674 Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay)		• Standard definition of falls across settings to avoid potential confusion related to two different fall rates • Evaluating bone density, prevention and treatment of osteoporosis in ambulatory settings • Structural measures of staff availability to ambulate and reposition patients, including home care providers and home health aides
Pressure Ulcers	#0201 Pressure Ulcer Prevalence		#0201 Pressure Ulcer Prevalence		#0201 Pressure Ulcer Prevalence		#0201 Pressure Ulcer Prevalence	#0181 Increase in Number of Pressure Ulcers	
Perioperative/ Procedural	#0263 ASC-1: Patient Burn -Percentage of ASC Admissions Experiencing a Burn Prior to Discharge #0267 ASC-3: Wrong Site, Wrong Side, Wrong Patient, Wrong Procedure, Wrong Implant	#0263 ASC-1: Patient Burn -Percentage of ASC Admissions Experiencing a Burn Prior to Discharge #0267 ASC-3: Wrong Site, Wrong Side, Wrong Patient, Wrong Procedure, Wrong Implant	#0263 ASC-1: Patient Burn -Percentage of ASC Admissions Experiencing a Burn Prior to Discharge #0267 ASC-3: Wrong Site, Wrong Side, Wrong Patient, Wrong Procedure, Wrong Implant #0344 Accidental Puncture or Laceration (PDI 1) (risk adjusted) #0345 PSI 15: Accidental Puncture or Laceration #0363 Foreign Body Left in During Procedure (PSI 5) #0362 Foreign Body Left after Procedure (PDI 3)	#0263 ASC-1: Patient Burn -Percentage of ASC Admissions Experiencing a Burn Prior to Discharge #0267 ASC-3: Wrong Site, Wrong Side, Wrong Patient, Wrong Procedure, Wrong Implant OP-25: Safe Surgery Checklist					• Single composite measure that encompasses all, or most significant, “never events” • Iatrogenic pneumothorax measures: modify denominator of NQF #0346 and #0348 to include patients receiving treatments putting them at risk for this complication • Anesthesia events (inter-op MI, corneal abrasion, broken tooth, etc.) • Perioperative respiratory events • Perioperative blood loss or transfusion/ over-transfusion • Altered mental status in perioperative period

Safety Topic Area	Clinican		Hospital		Post-Acute		Long-Term Care		Priority Measure Gap Areas
	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	
Example Public Programs*	**PQRS, EP-MU**	**PQRS, EP-MU, Value Modifier**	**VPB, IQR, Hosp MU, Psych, Cancer**	**OQR, ASC**	**IRF**	**OP Rehab**	**LTCH, NH**	**HH**	
Medication/Infusion Safety	#0419 Documentation of Current Medications in the Medical Record	#0022 Drugs to be Avoided in the Elderly: a. Patients who Receive at Least One Drug to be Avoided, b. Patients who Receive at Least Two Different Drugs to be Avoided. #0419 Documentation of Current Medications in the Medical Record #0554 Medication Reconciliation Post-Discharge (MRP) #0486 Adoption of Medication e-Prescribing	#0646 Reconciled Medication List Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care) #0293 Medication Information	#0646 Reconciled Medication List Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care)	#0646 Reconciled Medication List Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care) #0419 Documentation of Current Medications in the Medical Record	#0419 Documentation of Current Medications in the Medical Record	#0646 Reconciled Medication List Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care) #0419 Documentation of Current Medications in the Medical Record	#0176 Improvement in Management of Oral Medications #0419 Documentation of Current Medications in the Medical Record	• Outcomes – injury/ mortality related to inappropriate drug management • Patient-reported measures of understanding medications (purpose, dosage, side effects, etc.) • Total number of adverse drug events that occur within all settings (including administration of wrong medication, wrong dosage, drug-allergy or drug-drug interactions) • Polypharmacy and use of unnecessary medications for all ages, especially with high-risk medications • Comprehensive medication review • Role of community pharmacist or home health in reconciliation • Blood Incompatibility • Air Embolism
Pain Management	#1617 Patients Treated with an Opioid who are Given a Bowel Regimen	#1617 Patients Treated with an Opioid who are Given a Bowel Regimen	#0209 Comfortable Dying: Pain Brought to a Comfortable Level Within 48 Hours of Initial Assessment #1617 Patients Treated with an Opioid who are Given a Bowel Regimen #1634 Hospice and Palliative Care—Pain Screening #1637 Hospice and Palliative Care—Pain Assessment				#0209 Comfortable Dying: Pain Brought to a Comfortable Level Within 48 Hours of Initial Assessment #1634 Hospice and Palliative Care -- Pain Screening #1637 Hospice and Palliative Care -- Pain Assessment	#0177 Improvement in pain interfering with activity #0209 Comfortable Dying: Pain Brought to a Comfortable Level Within 48 Hours of Initial Assessment #1634 Hospice and Palliative Care -- Pain Screening #1637 Hospice and Palliative Care -- Pain Assessment	• Effectiveness of pain management paired with patient experience and balanced by overuse/misuse monitoring • Assessment of depression with pain
ObstetricalAdverse Events			#0471 PC-02 Cesarean Section #0477 Under 1500g infant Not Delivered at Appropriate Level of Care #0469 PC-01 Elective Delivery Prior to 39 Completed Weeks gestation #0716 Healthy Term Newborn						• Obstetrical adverse event index • Overall complications composite measure • Measures using NHSN definitions for infections in newborns

Safety Topic Area	Clinician		Hospital		Post-Acute		Long-Term Care		Priority Measure Gap Areas
	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	
Example Public Programs*	**PQRS, EP-MU**	**PQRS, EP-MU, Value Modifier**	**VPB, IQR, Hosp MU, Psych, Cancer**	**OQR, ASC**	**IRF**	**OP Rehab**	**LTCH, NH**	**HH**	
Safety-Related Overuse & Appropriateness		#0052 Low Back Pain: Use of Imaging Studies #0668 Appropriate Head CT Imaging in Adults with Mild Traumatic Brain Injury #0755 Appropriate Cervical Spine Radiography and CT Imaging in Trauma #0002 Appropriate Testing for Children with Pharyngitis #0058 Antibiotic Treatment for Adults with Acute Bronchitis: Avoidance of Inappropriate Use #0069 Appropriate Treatment for Children with Upper Respiratory Infection (URI) #0309 LBP: Appropriate Use of Epidural Steroid Injections #0656 Otitis Media with Effusion: Systemic corticosteroids – Avoidance of Inappropriate Use #0657 Percentage of Patients Aged 2 months through 12 years with a Diagnosis of OME who were not Prescribed Systemic Antimicrobials #0305 LBP: Surgical Timing #0659 Endoscopy & Polyp Surveillance: Colonoscopy Interval for Patients with a History of Adenomatous Polyps- Avoidance of Inappropriate Use		#0755 Appropriate Cervical Spine Radiography and CT Imaging in Trauma #0668 Appropriate Head CT Imaging in Adults with Mild Traumatic Brain Injury #0667 Inappropriate Pulmonary CT Imaging for Patients at Low Risk for Pulmonary Embolism #0659 Endoscopy & Polyp Surveillance: Colonoscopy Interval for Patients with a History of Adenomatous Polyps- Avoidance of Inappropriate Use #0657 Percentage of Patients Aged 2 months through 12 years with a Diagnosis of OME who were not Prescribed Systemic Antimicrobials				• Consistency in scoring for public reporting: should be clear if high or low scores are desired • Chemotherapy appropriateness, including dosing • Over diagnosis, under diagnosis, misdiagnosis • Use of sedatives, hypnotics, atypical anti-psychotics, pain medications (with chronic pain management) • Treatment given that is not matched to patient goals, especially with palliative and end-of-life care • Antibiotic use for sinusitis • Use of cardiac CT and stenting • Use of radiographic imaging in the pediatric population
Complications-Related Mortality			#0351 Death among Surgical Inpatients with Serious, Treatable Complications (PSI 4)						• Preferably expressed as a ratio instead of percentage • Questions of how to accommodate small numbers • Expand to PAC/LTC settings• Failure to Rescue

***Example public programs noted above:** Physician Quality Reporting System (PQRS), Medicare and Medicaid EHR Incentive Program for Eligible Professionals (EP-MU), Value-Based Payment Modifier Program (Value Modifier), Hospital Value-Based Purchasing (VBP), Hospital Inpatient Quality Reporting (IQR), Medicare and Medicaid EHR Incentive Program for Hospitals and Critical Access Hospitals (Hosp MU), Inpatient Psychiatric Hospital Quality Reporting (Psych), PPS-Exempt Cancer Hospital Quality Reporting (Cancer), Hospital Outpatient Quality Reporting (OQR), Ambulatory Surgical Center Quality Reporting (ASC), Inpatient Rehabilitation Facilities Quality Reporting (IRF), Outpatient Rehabilitation Services (OP Rehab), Long-Term Care Hospital Quality Reporting (LTCH), Nursing Home Quality Initiative and Nursing Home Compare (NH), Home Health Quality Reporting (HH)

TABLE 2. CARE COORDINATION FAMILY OF MEASURES BY LEVEL OF ANALYSIS AND CARE SETTING

(Detailed information regarding the Care Coordination Family of Measures begins on page 48.)

Care Coordination Topic Area	Clinican		Hospital		Post-Acute		Long-Term Care		Priority Measure Gap Areas
	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	
Example Public Programs*	**PQRS, EP-MU**	**PQRS, EP-MU, Value Modifier**	**VPB, IQR, Hosp MU, Psych, Cancer**	**OQR, ASC**	**IRF**	**OP Rehab**	**LTCH, NH**	**HH**	
Avoidable Admissions/ Readmissions		#0709 Proportion of patients with a chronic condition that have a potentially avoidable complication during a calendar year.	#0704 Proportion of Patients Hospitalized with AMI that have a Potentially Avoidable Complication (during the Index Stay or in the 30-day Post-Discharge Period) #0705 Proportion of Patients Hospitalized with Stroke that have a Potentially Avoidable Complication (during the Index Stay or in the 30-day Post-Discharge Period) #0708 Proportion of Patients Hospitalized with Pneumonia that have a Potentially Avoidable Complication (during the Index Stay or in the 30-day Post-Discharge Period) #1768 Plan All-Cause Readmissions #1789 Hospital-Wide All-Cause Unplanned Readmission Measure (HWR)	#0265 Hospital Transfer/ Admission #1381 Asthma Emergency Department Visits				#0171 Acute care hospitalization (risk-adjusted) #0173 Emergent care (risk adjusted)	• Shared accountability and attribution across the continuum • Community role; patient's ability to connect to available resources • All populations and causes of admissions/ readmissions • Modify Prevention Quality Indicators (PQI) measures to address accountability of accountable care organizations. Modify population to include all patients with the disease (if applicable)
Care Planning	#0326 Advance Care Plan	#0326 Advance Care Plan	#0211 Proportion with More than One Emergency Room Visit in the Last Days of Life #0213 Proportion Admitted to the ICU in the Last 30 Days of Life #0215 Proportion Not Admitted to Hospice #0216 Proportion Admitted to Hospice for Less than 3 Days #0557 HBIPS-6 Post Discharge Continuing Care Plan Created #0558 HBIPS-7 Post Discharge Continuing Care Plan Transmitted to Next Level of Care Provider Upon Discharge #1626 Patients Admitted to ICU who Have Care Preferences Documented #0326 Advance Care Plan	#0326 Advance Care Plan	#0326 Advance Care Plan		#0211 Proportion with more than one emergency room visit in the last days of life #0212 Proportion with more than one hospitalization in the last 30 days of life #0215 Proportion not admitted to hospice #0216 Proportion admitted to hospice for less than 3 days #0326 Advance Care Plan	#0211 Proportion with more than one emergency room visit in the last days of life #0212 Proportion with more than one hospitalization in the last 30 days of life #0215 Proportion not admitted to hospice #0216 Proportion admitted to hospice for less than 3 days #0326 Advance Care Plan	• Shared decision-making and care planning; interactive care plan – All people should have care plan, created early in the care process – Plan agreed to by the patient and provider and given to patient, including advanced care plan – Plan shared among all providers seeing the patient (integrated); multidisciplinary – Identified primary provider responsible for the care plan

Care Coordination Topic Area	Clinician		Hospital		Post-Acute		Long-Term Care		Priority Measure Gap Areas
	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	
Example Public Programs*	**PQRS, EP-MU**	**PQRS, EP-MU, Value Modifier**	**VPB, IQR, Hosp MU, Psych, Cancer**	**OQR, ASC**	**IRF**	**OP Rehab**	**LTCH, NH**	**HH**	
Communication		#0310 LBP: Shared Decision Making	#0647 Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care) (Inpatient Discharges to Home/Self Care or Any Other Site of Care) #0648 Timely Transmission of Transition Record (Inpatient Discharges to Home/Self Care or Any Other Site of Care)	#0291 Administrative Communication #0294 Patient Information #0295 Physician Information #0296 Nursing Information #0297 Procedures and Tests #0647 Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care) (Inpatient Discharges to Home/Self Care or Any Other Site of Care) #0648 Timely Transmission of Transition Record (Inpatient Discharges to Home/Self Care or Any Other Site of Care) #0649 Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges to Ambulatory Care [Home/Self Care])	#0647 Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care) (Inpatient Discharges to Home/Self Care or Any Other Site of Care) #0648 Timely Transmission of Transition Record (Inpatient Discharges to Home/Self Care or Any Other Site of Care)		#0647 Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care) (Inpatient Discharges to Home/Self Care or Any Other Site of Care) #0648 Timely Transmission of Transition Record (Inpatient Discharges to Home/Self Care or Any Other Site of Care)		• Communication measures should address both simultaneous and subsequent information sharing across all settings • Move beyond current checkbox measures of communication to address both the sending and receiving of adequate information • Measures of person-centered communication – Right information was given at the right time and aligned with patient preferences » Cultural sensitivity—ethnicity, language, religion » Multiple chronic conditions, frailty, disability, medical complexity – Address patient understanding of information, not just receiving information – Role for personal health records • Opportunity to leverage health information technology (HIT); role of HIT/health information exchanges (HIE) in communication process – Need to address overuse, misuse, inefficiencies created by poor communication

Care Coordination Topic Area	Clinican		Hospital		Post-Acute		Long-Term Care		Priority Measure Gap Areas
	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	
Example Public Programs*	**PQRS, EP-MU**	**PQRS, EP-MU, Value Modifier**	**VPB, IQR, Hosp MU, Psych, Cancer**	**OQR, ASC**	**IRF**	**OP Rehab**	**LTCH, NH**	**HH**	
Patient Experience with Care Coordination	#1741 Patient Experience with Surgical Care Based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS)® Surgical Care Survey	#0005 CAHPS Clinician/Group Surveys - (Adult Primary Care, Pediatric Care, and Specialist Care Surveys) #0006 CAHPS Health Plan Survey v 4.0 - Adult questionnaire #0007 NCQA Supplemental items for CAHPS® 4.0 Adult Questionnaire #0008 Experience of Care and Health Outcomes (ECHO) Survey (behavioral health, managed care versions) #0009 CAHPS Health Plan Survey v 3.0 Children with Chronic Conditions Supplement #0010 Young Adult Health Care Survey (YAHCS) #1741 Patient Experience with Surgical Care Based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS)® Surgical Care Survey	#0166 HCAHPS #0208 Family Evaluation of Hospice Care #0725 Validated Family-Centered Survey Questionnaire for Parents' and Patients' Experiences during Inpatient Pediatric Hospital Stay #0726 Inpatient Consumer Survey (ICS) Consumer Evaluation of Inpatient Behavioral Healthcare Services #1632 CARE - Consumer Assessments and Reports of End of Life #1741 Patient Experience with Surgical Care Based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS)® Surgical Care Survey	#1741 Patient Experience with Surgical Care Based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS)® Surgical Care Survey	#0726 Inpatient Consumer Survey (ICS) Consumer Evaluation of Inpatient Behavioral Healthcare Services		#0208 Family Evaluation of Hospice Care #0691 Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Discharged Resident Instrument #0692 Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Long-Stay Resident Instrument #0693 Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Family Member Instrument #1632 CARE - Consumer Assessments and Reports of End of Life	#0208 Family Evaluation of Hospice Care #0258 CAHPS In-Center Hemodialysis Survey #0517 CAHPS® Home Health Care Survey #1632 CARE - Consumer Assessments and Reports of End of Life	• Need to address patients who cannot self-report/issues with surrogate reporting • Existing surveys – Need surveys in electronic format – Test national-level surveys for reporting out at the organization and/or clinician level – Bring Medical Home Clinician and Group Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS) forward for NQF endorsement • Comprehensive care coordination survey that looks across episode and settings, particularly with the development of medical homes and accountable care organizations – Include all ages – Recognize accountability of the multidisciplinary team • Survey/composite measure of provider perspective of care coordination – Timely and effective communication among providers
System and Infrastructure Support		#0494 Medical Home System Survey							• Move beyond electronic health record (EHR) capacity to measures of interoperability of EHRs, enhanced communication • Measures of "systemness," including but not limited to accountable care organizations and patient-centered medical homes

Care Coordination Topic Area	Clinican		Hospital		Post-Acute		Long-Term Care		Priority Measure Gap Areas
	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	
Example Public Programs*	**PQRS, EP-MU**	**PQRS, EP-MU, Value Modifier**	**VPB, IQR, Hosp MU, Psych, Cancer**	**OQR, ASC**	**IRF**	**OP Rehab**	**LTCH, NH**	**HH**	
Care Transitions	#0576 Follow-Up After Hospitalization for Mental Illness	#0403 HIV/AIDS: Medical Visit #0576 Follow-Up After Hospitalization for Mental Illness	#0228 3-Item Care Transition Measure (CTM-3) #0335 PICU Unplanned Readmission Rate #0698 30-Day Post-Hospital AMI Discharge Care Transition Composite Measure #0699 30-Day Post-Hospital HF Discharge Care Transition Composite Measure #0707 30-day Post Hospital Pneumonia Discharge Transition Composite Measure	#0289 Median Time to ECG #0287 Median to Fibrinolysis #0288 OP-2: AMI Emergency Department Acute Myocardial Infarction (AMI) Patients with ST-segment Elevation or LBBB on the ECG Closest to Arrival time Receiving Fibrinolytic Therapy During the Stay and Having a Time from ED Arrival to Fibrinolysis of 30 minutes or Less. #0290 Median Time to Transfer to Another Facility for Acute Coronary Intervention #0661 OP-23: ED-Head CT Scan Results for Acute Ischemic Stroke or Hemorrhagic Stroke who Received Head CT Scan Interpretation Within 45 minutes of Arrival #0163 Primary PCI received within 90 Minutes of Hospital Arrival #0164 AMI-7a- Fibrinolytic Therapy Received within 30 minutes of Hospital Arrival				#0526 Timely Initiation of Care	• Transition measures that look beyond timeliness • Measures of patient transition to next provider/site of care across all settings – Includes nonhospital transitions (examples: primary care to specialty care, clinician to community pharmacist, nursing home to home health) as well as transitions to community services • Measures of intra-facility transitions

***Example public programs noted above:** Physician Quality Reporting System (PQRS), Medicare and Medicaid EHR Incentive Program for Eligible Professionals (EP-MU), Value-Based Payment Modifier Program (Value Modifier), Hospital Value-Based Purchasing (VBP), Hospital Inpatient Quality Reporting (IQR), Medicare and Medicaid EHR Incentive Program for Hospitals and Critical Access Hospitals (Hosp MU), Inpatient Psychiatric Hospital Quality Reporting (Psych), PPS-Exempt Cancer Hospital Quality Reporting (Cancer), Hospital Outpatient Quality Reporting (OQR), Ambulatory Surgical Center Quality Reporting (ASC), Inpatient Rehabilitation Facilities Quality Reporting (IRF), Outpatient Rehabilitation Services (OP Rehab), Long-Term Care Hospital Quality Reporting (LTCH), Nursing Home Quality Initiative and Nursing Home Compare (NH), Home Health Quality Reporting (HH)

TABLE 3. ACUTE CARDIOVASCULAR CONDITIONS FAMILY OF MEASURES

Table 3 summarizes the Acute Cardiovascular Conditions Family of Measures by level of analysis along the patient-focused episode of care. The bolded (*) high-leverage opportunities represent areas where the task force has identified measures to populate the family; non-bolded entries are considered gaps. Detailed information regarding the Cardiovascular and Diabetes Families of Measures begins on page 71.

	Primary Prevention		Acute Phase		Post-Acute/Rehab Phase		Secondary Prevention
	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient
Clinician Group/ Individual	• **Smoking Cessation/ Tobacco Use (0028, 1406)*** • **Lifestyle Management—Weight/Obesity (0024, 0421)*** • **Blood Pressure Control (0018)*** • Lipid Control • Lifestyle Management—Diet/ Nutrition • Lifestyle Management—Activity/ Exercise • Cardiometabolic Risk	• Smoking Cessation/ Tobacco Use	• IHD **Complications (0709)***	• IHD **Procedures—CABG (0696)*** • Stroke **Anticoag for afib at discharge (0241)***	• IHD **Complications (0709)***	• IHD **Rehab (0642)***	• IHD **Medications—Aspirin (0068)*** • IHD **Medications—ACE/ARB (0066)*** • IHD **Medications—Beta Blocker (0070)*** • IHD **Secondary Prevention—Lipids (0075)***
				• **Resource Use (1598 and 1604)***			
Provider/ Facility	• Smoking Cessation/ Tobacco Use • Lipid Control • Lifestyle Management—Weight/ Obesity • Lifestyle Management—Diet/ Nutrition • Lifestyle Management—Activity/ Exercise • Cardiometabolic Risk	• **Smoking Cessation/ Tobacco Use (1651, 1654)***	• IHD **Diagnostic—ECG (0289)*** • IHD **Medications—Fibrinolysis (0287/ 0288)*** • Stroke **Diagnostic—CT (0661)*** • IHD Cardiac Imaging (NQF 0669, 0670, 0671, 0672)	• IHD **Diagnostic—ECG (0289)*** • IHD **Procedures—PCI (0163)*** • IHD **Procedures—CABG (0696)*** • IHD **Medications—Fibrinolysis (0287/0288)*** • IHD Bilateral Cardiac Cath (0355) • IHD Cardiac Imaging composite • IHD Appropriateness for CABG and non-emergent PCI • Stroke **Diagnostic—CT (0661)*** • Stroke **Medications—Thrombolytic (0437)*** • Mortality—**IHD CABG (0119)*** • Mortality—**IHD CABG/MV (0122)***	• IHD Outcomes related to rehab • Stroke Anticoagulants, statins, anti-hypertensive • Stroke Obtaining rehab services • Stroke Outcomes related to rehab (includes functional status) • Mortality—**IHD AMI (0230)*** • Mortality—**IHD PCI (0535)*** • Mortality—**IHD PCI (0536)*** • Mortality—**HF (0229)***	• IHD Outcomes related to rehab • Stroke **Rehab—assessment (0441)*** • Stroke Obtaining rehab services • Stroke Outcomes related to rehab (includes functional status) • Mortality—**IHD AMI (0230)*** • Mortality—**IHD PCI (0535)*** **Mortality—IHD PCI (0536)*** • Mortality—**HF (0229)***	• Stroke Anticoagulants, statins, anti-hypertensive • Stroke High-risk medication management
System	• **Lifestyle Management—Weight/Obesity (0024)*** • **Blood Pressure Control (0018)*** • Smoking Cessation/Tobacco Use • Lipid Control • Blood Pressure Control • Screening • Lifestyle Management—Diet/Nutrition • Lifestyle Management—Activity/Exercise • Cardiometabolic Risk		• IHD **Complications (0709)*** • IHD Cardiac Imaging composite • IHD Global resource measures • IHD Appropriateness for CABG and non-emergent PCI • Stroke **Medications—Thrombolytic (0437)***		• IHD **Complications (0709)*** • IHD **Rehab (0642)*** • IHD outcomes related to rehab • Stroke Anticoagulants, statins, anti-hypertensive • Stroke obtaining rehab services		• IHD **Secondary Prevention—Lipids (0075)*** • Stroke Anticoagulants, statins, anti-hypertensive • IHD Medications—ACE/ARB, beta blocker, statin persistence
				• **Resource Use (1598 and 1604)***			
Community	• **Smoking Cessation/Tobacco Use (1406, 1651, 1654)*** • **Lifestyle Management—Weight/Obesity (0024, 0421)*** • **Blood Pressure Control (0018)*** • Cardiometabolic Risk • Lipid Control • Lifestyle Management—Diet/Nutrition • Lifestyle Management—Activity/Exercise		• IHD **Diagnostic—ECG (0289)*** • IHD **Procedures—PCI (0163)*** • IHD **Procedures—CABG (0696)*** • IHD **Medications—Fibrinolysis (0287/ 0288)*** • IHD **Complications (0709)*** • IHD Cardiac Imaging (0669) • Stroke **Medications—Thrombolytic (0437)*** • Mortality—**IHD – CABG (0119)*** • Mortality—**IHD CABG/MV (0122)***		• IHD **Avoidable complication (0709)*** • IHD Outcomes related to rehab • Stroke **Rehab—Assessment (0441)*** • Stroke Anticoagulants, statins, anti-hypertensive		• Stroke Anticoagulants, statins, anti-hypertensive • IHD Medications—ACE/ARB, beta blocker, statin persistence
				• **Resource Use (1598 and 1604)***			

TABLE 4. CHRONIC CARDIOVASCULAR CONDITIONS FAMILY OF MEASURES

Table 4 summarizes the Chronic Cardiovascular Conditions Family of Measures by level of analysis along the patient-focused episode of care. The bolded (*) high-leverage opportunities represent areas where the task force has identified measures to populate the family; non-bolded entries are considered gaps. Detailed information regarding the Cardiovascular and Diabetes Families of Measures begins on page 71.

	Primary Prevention		Evaluation and Initial Management		Follow-Up Care
	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient
Clinician Group/ Individual	• **Smoking Cessation/ Tobacco Use (0028, 1406)*** • **Lifestyle Management—Weight/Obesity (0024, 0421)*** • **Blood Pressure Control (0018)*** • Lipid Control • Lifestyle Management—Diet/ Nutrition • Lifestyle Management—Activity/ Exercise • Cardiometabolic Risk	• Smoking Cessation/ Tobacco Use	• HF Functional status	• HF Functional status	• Afib **Medications—Anti-Coagulation (1525)*** • HF **Medications—ACE/ARB (0081)*** • HF **Medications—Beta-blocker (0083)*** • HF Medications—ACE/ARB, beta blocker persistence
	• **Resource Use (1598 and 1604)***				
Provider/ Facility	• Smoking Cessation/ Tobacco Use • Lipid Control • Lifestyle Management—Weight/ Obesity • Lifestyle Management—Diet/ Nutrition • Lifestyle Management—Activity/ Exercise • Cardiometabolic Risk	• **Smoking Cessation/ Tobacco Use (1651, 1654)***	• HF Functional status • Mortality**—HF (0229)***	• HF Functional status • Mortality**—HF (0229)***	• HF **Medications—Beta-Blocker (0083)*** • HF Medications—ACE/ARB, beta blocker persistence • HF Early identification of decompensated HF
System	• **Lifestyle Management—Weight/Obesity (0024)** * • **Blood Pressure Control (0018)*** • Smoking Cessation/Tobacco Use • Lipid Control • Blood Pressure Control • Screening • Lifestyle Management—Diet/Nutrition • Lifestyle Management—Activity/Exercise • Cardiometabolic Risk		• Mortality • HF Functional status		• HF Medications—ACE/ARB, beta blocker persistence
	• **Resource Use (1598 and 1604)***				
Community	• **Smoking Cessation/Tobacco Use (1406, 1651, 1654)*** • **Lifestyle Management—Weight/Obesity (0024, 0421)*** • **Blood Pressure Control (0018)*** • Cardiometabolic Risk • Lipid Control • Lifestyle Management—Diet/Nutrition • Lifestyle Management—Activity/Exercise		• Mortality • HF Functional status		• HF Medications—ACE/ARB, beta blocker persistence
	• **Resource Use (1598 and 1604)***				

TABLE 5. DIABETES FAMILY OF MEASURES

Table 5 summarizes the Diabetes Family of Measures by level of analysis along the patient-focused episode of care. The bolded (*) high-leverage opportunities represent areas where the task force has identified measures to populate the family; non-bolded entries are considered gaps. Detailed information regarding the Cardiovascular and Diabetes Families of Measures begins on page 71.

	Primary Prevention of CV and DM		Evaluation and Ongoing Management		Exacerbation of Diabetes and Complex Treatments	
	Outpatient	Inpatient	Outpatient	Inpatient	Outpatient	Inpatient
Clinician Group/ Individual	• **Smoking Cessation/ Tobacco Use (0028, 1406)*** • **Lifestyle Management—Weight/Obesity (0024, 0421)*** • **Blood Pressure Control (0018)*** • Lipid Control • Lifestyle Management—Diet/ Nutrition • Lifestyle Management—Activity/ Exercise • Cardiometabolic Risk (including A1c assessment)	• Smoking Cessation/ Tobacco Use	• **Glycemic control/ HbA1c (0575)*** • **Lipid Control (0064)*** • **Composite (0729, 0731)*** • Glycemic control for complex patients • Pediatric glycemic control • Lifestyle management—Diet/ Nutrition • Lifestyle management—Activity/ Exercise • Blood pressure control	• No high-leverage opportunities for measurement	• Sequelae of diabetes exacerbations	• No high-leverage opportunities for measurement
	• **Resource Use (1598 and 1604)***					
Provider/ Facility	• Smoking Cessation/ Tobacco Use • Lipid Control • Lifestyle Management—Weight/ Obesity • Lifestyle Management—Diet/ Nutrition • Lifestyle Management—Activity/ Exercise • Cardiometabolic Risk (including A1c assessment)	• **Smoking Cessation/ Tobacco Use (1651, 1654)***	• Glycemic control/ HbA1c • Glycemic control for complex patients • Pediatric glycemic control • Lipid control • Lifestyle management—Diet/ Nutrition • Lifestyle management—Activity/ Exercise • Blood pressure control	• No high-leverage opportunities for measurement	• Sequelae of diabetes exacerbations	• No high-leverage opportunities for measurement
System	• **Lifestyle Management—Weight/Obesity (0024)*** • **Blood Pressure Control (0018)*** • Smoking Cessation/Tobacco Use • Lipid Control • Blood Pressure Control • Screening • Lifestyle Management—Diet/Nutrition • Lifestyle Management—Activity/Exercise • Cardiometabolic Risk (including A1c assessment)		• **Composite (0729 and 0731)*** • **Glycemic Control/HbA1c (0575)*** • **Lipid Control (0064)*** • Glycemic control for complex patients • Pediatric glycemic control • Lipid Control • Lifestyle management—Diet/Nutrition • Lifestyle management—Activity/Exercise • Blood pressure control		• Sequelae of diabetes exacerbations	• No high-leverage opportunities for measurement
	• **Resource Use (1598 and 1604)***					
Community	• **Smoking Cessation/Tobacco Use (1406, 1651, 1654)*** • **Lifestyle Management—Weight/Obesity (0024, 0421)*** • **Blood Pressure Control (0018)*** • Cardiometabolic Risk (including A1c assessment) • Lipid Control • Lifestyle Management—Diet/Nutrition • Lifestyle Management—Activity/Exercise		• **Glycemic control/HbA1c (0575)*** • **Lipid Control (0064)*** • Lifestyle management—Diet/Nutrition • Lifestyle management—Activity/Exercise • Blood pressure control		• Sequelae of diabetes exacerbations	
	• **Resource Use (1598 and 1604)***					

INTRODUCTION

The gap between the value of what we want and the value of what we receive from our healthcare system is enormous. Performance measures are one tool that has proven effectiveness for monitoring and motivating progress in closing this gap and informing decision making by the system's various stakeholders. The Measure Applications Partnership (MAP) makes coordinated and upstream recommendations on measure use, with the goal of improving health outcomes, providing consistent and meaningful information, and enhancing efficiency (See Appendix A for MAP Background).

The current delivery system is siloed, which, in turn, has perpetuated a siloed approach to performance measurement. The current uses of performance measures in public reporting and performance-based payment programs are criticized as being inconsistent, in both strategic focus and technical measure specifications. Additionally, performance measurement efforts have typically been disease- and setting-specific, leading to a proliferation of measures that assess single aspects of care, rather than broader patient-centered measures that assess quality across settings and time. Performance measurement efforts must be better coordinated to make progress toward the National Quality Strategy (NQS) and achieve the MAP goal of improvement, transparency, and value.[1]

To strengthen signals about desired changes and provide stronger incentives to providers and clinicians, MAP will promote alignment of performance measurement across public- and private-sector initiatives that use measures to drive value. Strategically aligning public reporting and performance-based payment programs across care settings, levels of analysis, populations, and payers will encourage delivery of patient-centered care, reduction in providers' data collection burden, and emergence of a comprehensive picture of quality.

As a primary tactic to achieve alignment of performance measurement, MAP has identified families of measures—sets of related available measures and measure gaps that span programs, care settings, levels of analysis, and populations for specific topic areas related to the National Quality Strategy (NQS) priorities and high-impact conditions. Families indicate the highest priorities for measurement and best available measures within a particular topic, as well as critical measure gaps that must be filled to enable a more complete assessment of quality.

Families of measures are intended to build on, not duplicate, the National Quality Forum (NQF) endorsement process, which focuses on the properties of individual measures. MAP's role is to identify measures that will work well together within program measure sets to accomplish the objectives of specific programs. When identifying measures for families of measures and program measure sets, MAP will first look to the portfolio of NQF-endorsed® measures and also consider measures that could reasonably meet the NQF endorsement criteria. This is consistent with the MAP Measure Selection Criterion #1. (See Appendix B for MAP Measure Selection Criteria and Interpretive Guide).

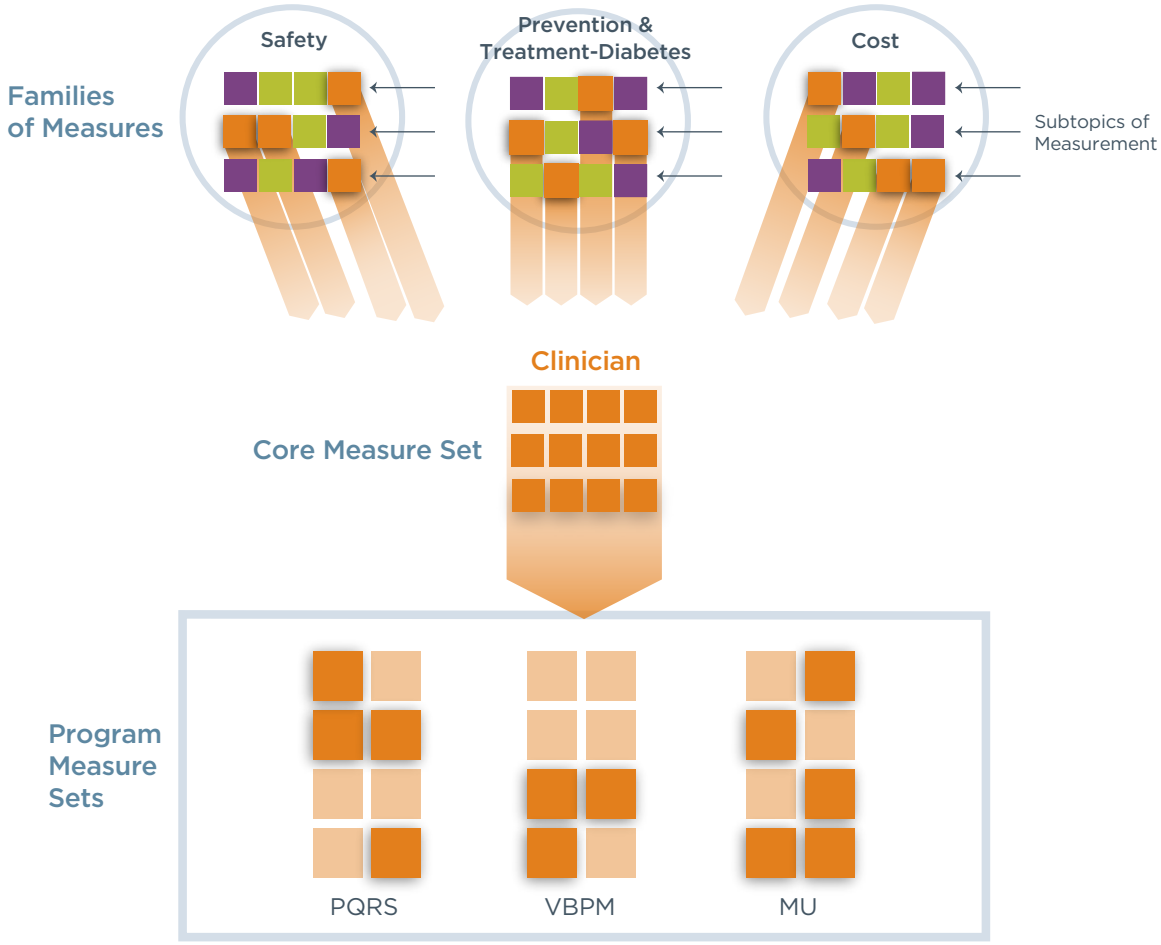
MAP will use the families of measures to guide its pre-rulemaking recommendations on the selection of measure sets for specific federal programs. Because the performance measurement programs are typically specific to a setting or population, MAP will repackage the families of measures into core measure sets—sets of available measures and gaps specific to a care setting, level of analysis, or population drawn from the families of measures—to encourage the best use of available measures in specific public- and private-sector programs.

Although MAP's pre-rulemaking input is not limited to measures from core measure sets, such measures represent a starting place for identifying the highest-leverage opportunities for addressing performance gaps. Over time, MAP anticipates the core measure sets will evolve as the Safety, Care Coordination, and Prevention and Treatment of the Leading Causes of Mortality Families are revisited and new families are developed to address all of the NQS priorities.

Public commenters emphasized that MAP should consider whether a measure's attribution methodology aligns with the program structure and purpose. MAP will pay close attention to attribution when providing input on measures for specific program sets.

Figure 1 illustrates how core measure sets and program measure sets are populated from families of measures. The boxes represent individual performance measures. In this example, the orange boxes represent measures that are specified for individual clinician or group practice levels of analysis. The dark orange boxes in the clinician program measure sets (i.e., PQRS, Value Based Payment Modifier, Meaningful Use) represent measures recommended for those programs from the clinician core measure set; the light orange boxes in the clinician program measure sets represent measures recommended for those programs that are not included in the clinician core measure set but do fit the specific purpose of the program.

FIGURE 1. FAMILIES OF MEASURES POPULATING A CORE MEASURE SET AND PROGRAM MEASURE SETS



MAP's phased approach to identifying families of measures initially focused on three NQS priorities—Safety, Care Coordination, and Prevention and Treatment of the Leading Causes of Mortality. The Care Coordination family of measures also highlights Guidance for the Selection of Avoidable Admissions and Readmissions. Within the prevention and treatment priority, MAP has identified families of measures for two high-impact conditions—cardiovascular disease and diabetes. MAP chose to address these topics first because they build on MAP's prior work (e.g., **MAP Coordination Strategy for Healthcare-Acquired Conditions and Readmissions Across Public and Private Payers**) or represent areas with a history of measure alignment challenges (e.g., cardiovascular care). In future work, MAP anticipates identifying families of measures for the NQS priorities of affordability, person and family engagement, and population health. Further, public commenters encouraged MAP to develop families of measures for the high-impact conditions of Chronic Obstructive Pulmonary Disease (COPD) and End Stage Renal Disease (ESRD).

Families of measures also include measure gaps, and MAP has begun to define gap-filling pathways by identifying and prioritizing measure gaps, along with potential barriers and solutions to filling those gaps. In addition to the aforementioned families of measures, this report begins with an overview of MAP's approach to identifying families of measures and concludes with a discussion of MAP's role and next steps for filling identified gaps.

APPROACH TO IDENTIFYING FAMILIES OF MEASURES

MAP convened time-limited task forces, drawn from the membership of the MAP Coordinating Committee and workgroups, to advise the MAP Coordinating Committee (see Appendix C for Coordinating Committee roster) on the identification of families of measures. Liaisons from the National Priorities Partnership (NPP) and NQF measure endorsement project Steering Committees also served on the task forces to provide insight from NPP's input to the NQS and relevant endorsement project findings.

The 40-member Safety/Care Coordination Task Force (see Appendix D for Task Force roster) advised the Coordinating Committee on families of measures for the safety and care coordination NQS priorities. The 24-member Cardiovascular/Diabetes Task Force (see Appendix E for Task Force roster) advised the Coordinating Committee on families of measures for cardiovascular conditions and diabetes, within the NQS prevention and treatment of the leading causes of mortality priority. Each task force held two in-person meetings to develop the families of measures.

All MAP meetings are open to members of the public; the agendas and materials for the task force and Coordinating Committee meetings can be found on the **NQF website**. Additionally, MAP solicited and received public feedback on its recommendations during a formal two-week commenting period (see Appendix F for Public Comments).

MAP engaged in a deliberate, four-step process to identify the first four families of measures:

1. Identify and prioritize high-leverage opportunities for improvement

Within each NQS priority or high-impact condition, MAP first identified and prioritized the areas of measurement that are considered the highest-leverage opportunities for improvement, guided by the Institute of Medicine (IOM) criteria of impact, inclusiveness, and improvability, for addressing performance gaps in health and healthcare outcomes, high cost, and disparities.[2] To prioritize the areas of measurement based on impact, MAP used the goals and associated metrics in the **NQS 2012 Annual Progress Report to Congress**. The NQS goals and metrics were selected based on evidence and multi-stakeholder input and represent the highest-leverage opportunities to improve health and provide better, more affordable care. Additionally, MAP emphasized measurement areas that are related to known disparities and inefficiencies in the system, such as overuse of care. Further, MAP identified the highest-leverage improvement opportunities across the lifespan and the patient-focused episode of care, recognizing that measurement opportunities vary by a person's age and trajectory of care. Appendix G contains an impact, inclusiveness, and improvability analysis for the high-leverage measurement opportunities within each family.

2. Scan for measures that address the high-leverage opportunities

Next, MAP scanned for available measures that address the high-leverage improvement opportunities. The review included the NQF-endorsed portfolio of measures, measures used in federal programs (including current measures and measures under consideration during the first year of MAP pre-rulemaking deliberations), and measures used in other public- (i.e., Million Hearts Campaign and Partnership for Patients) and private-sector efforts (e.g., eValue8, IHA P4P, Bridges to Excellence, other purchaser and payer value-based purchasing programs, recognition

programs, and Board certification programs). The MAP Safety/Care Coordination Task Force reviewed 316 measures related to patient safety and 135 measures related to care coordination. The MAP Cardiovascular/Diabetes Task Force reviewed 225 measures related to primary prevention, treatment, secondary prevention, and cost of care for cardiovascular conditions and diabetes. MAP recognizes this scan of measures was not comprehensive and aims to work with stakeholders to identify additional measures in use.

3. Define the family of measures for each high-leverage opportunity

Subsequently, MAP used the Measure Selection Criteria (see Appendix B for MAP Measure Selection Criteria) as a guide for considering: (1) how measures address relevant care settings, populations, and levels of analysis; (2) whether measures are harmonized across settings, populations, levels of analysis; (3) appropriate types of measures, including outcome, process, and structure measures; and (4) attention to parsimony, with the intent of identifying only the most important measures for driving change. Through this process MAP may note where currently available NQF-endorsed measures do not adequately address the high-leverage opportunity and are not included in the family; these measures may nonetheless be appropriate for use to meet specific program purposes. Finally, when constructing each family, MAP considered whether the family adequately addresses issues such as cost of care, disparities, and the needs of vulnerable populations.

4. Establish gap-filling pathways

When selecting available measures for each family, MAP identified the high-leverage improvement opportunities that lack adequate performance measures as measure gaps. Where no measures were currently available to address gaps, MAP generated measure ideas that should be developed to fill the gaps. Additionally, MAP made recommendations to measure developers for potentially modifying existing measures that do not adequately address the high-leverage opportunities but currently are considered the best alternative. The recommended modifications included expansion to additional settings, levels of analysis, and populations. MAP recognizes that modification to existing measures requires resources to develop, test, and submit the modified measure for NQF endorsement. With gaps identified, MAP began to prioritize and explore ways to promote gap-filling. Measure developers participated in MAP task force meetings, providing information about where they are currently developing or planning to develop measures that would address the gaps identified by MAP. Measure developers also discussed barriers to measure development and ways that MAP could help remove the barriers.

SAFETY FAMILY OF MEASURES

Patient safety is a key NQS priority and remains a significant concern within our healthcare system. One study recently identified the rate of injuries associated with healthcare to exceed 25 events per 100 admissions.[3] Harm to patients stemming from the receipt of healthcare services significantly impacts patients, caregivers, clinicians, and the overall health system. Adverse events can result in reduced quality of life and additional care needed for patients, increased emotional strain on caregivers and clinicians, and greater healthcare spending.

One of the major recommendations that emerged from the first year of MAP's work was to identify "*a national core set of safety measures that are applicable to all patients.*" In this report, MAP builds on this recommendation by providing input on a family of measures for safety that includes existing measures and gap areas across settings, levels of analysis, and public- and private-sector programs. The safety family of measures is intended to serve as the national core set, as well as to inform MAP's pre-rulemaking activities.

MAP's approach to developing a safety family of measures involved first identifying and prioritizing high-leverage opportunities for improvement. To accomplish this, MAP first looked to the NQS goals for the priority of "making care safer by reducing harm caused in the delivery of care," which are reducing (1) preventable hospital admissions and readmissions, (2) incidence of adverse healthcare-associated conditions, and (3) harm from inappropriate or unnecessary care. MAP also honed in on the key focus areas of the Department of Health and Human Services (HHS) Partnership for Patients and the Healthcare-Acquired Infection Initiative, as well as the Medicare Hospital-Acquired Conditions program to further prioritize the high-leverage opportunities (see Appendix G, High Leverage Measurement Opportunities—Background Information).

Using the groundwork laid by the initiatives noted above, MAP identified nine priority topic areas for aligning safety measurement, which were divided into subtopics. Table 1 lists the topics and subtopics addressed within the safety measure family.

TABLE 6. SAFETY PRIORITY TOPIC AND SUBTOPIC AREAS

TOPIC	SUBTOPIC
Healthcare-Acquired Infections	Catheter-Associated Urinary Tract Infections (CAUTI)
	Central Line-Associated Blood Stream Infections (CLABSI)
	Methicillin-Resistant Staphylococcus aureus (MRSA)
	Clostridium difficile (C. difficile)
	Surgical Site Infection (SSI)
	Sepsis
	Ventilator-Associated Pneumonia (VAP)
Medication/Infusion Safety	Adverse Drug Events (ADE)
	Blood Incompatibility
	Manifestations of Poor Glycemic Control
Pain Management	Effectiveness, Appropriate Use of Medications, Patient Experience

TOPIC	SUBTOPIC
Venous Thromboembolism	Deep Vein Thrombosis (DVT)
	Pulmonary Embolism (PE)
Perioperative/Procedural Safety	Foreign Object Retained After Surgery
	Trauma (burn, shock, laceration, puncture, iatrogenic pneumothorax)
	Air Embolism
Injuries from Immobility	Pressure Ulcers
	Falls
Safety-Related Overuse & Appropriateness	Imaging
	Antibiotics
Obstetrical Adverse Events	Pre-Delivery, Delivery, Post-Delivery
Complications-Related Mortality	Failure to Rescue

Themes from the Identification of the Safety Family of Measures

Four themes emerged from MAP's discussions of the nine priority topic areas to identify the safety family of measures: the importance of creating and maintaining a culture of safety, the need for patient and caregiver engagement in treatment planning and decisions, challenges to reporting meaningful safety information, and cost of care implications.

Culture of Safety

An overarching theme from the safety discussions was the importance of creating a "culture of safety" at every site of care. This culture of safety is person-centered and requires multidisciplinary teamwork to protect patients from potential harm. It requires a non-punitive environment in which health professionals, of all types and at all levels, are encouraged to report errors and adverse events, with a true emphasis on the needs of the patient and family. Establishing a culture of safety requires active engagement of organizational leaders, who play a critical role in demonstrating the importance of patient safety through their decisions. One public commenter suggested attention to structural measures such as appropriate workforce staffing to support a safer healthcare environment. Currently, performance measurement is extremely limited in this area. As measurement continues to evolve, it will be essential to identify effective methods for assessing an organizational culture of safety.

Patient and Caregiver Engagement

The importance of including patient and caregiver preferences in treatment planning and decisions was another dominant theme during MAP's discussion about the safety family of measures. Matching treatments to patient goals may prevent harmful complications and side effects by reducing unwanted treatment and testing. MAP encourages the increased development and use of patient-reported outcome measures to assess patient understanding and the alignment of treatment with patient goals. MAP plans to identify a family of patient and family engagement measures as part of its future work.

Reporting Meaningful Safety Information

The challenge of providing meaningful performance information to consumers and purchasers was another significant theme during MAP's discussions of reporting rare events, making comparisons, and supporting consumer decision-making. Those challenges include: (1) The need for clear messaging and appropriate context when reporting rare, serious reportable events. (2) By definition, there are small numbers of these types

of events. To address small numbers concerns, MAP suggested the creation of a single composite measure that captures the most significant events. This composite could potentially be used for public reporting and payment programs while still providing the necessary detail to providers for quality improvement purposes. (3) The use of standard definitions for safety measurement benchmarking so that fair comparisons can be made for providers across all settings to ensure that consumers and purchasers can make informed choices. (4) Reporting performance scores as rates, rather than ratios, to provide more understandable information for consumer decision-making.

One public commenter discussed the need for a global measure of patient harm, noting that voluntary reporting mechanisms or documentation and coding are not sufficient to fully grasp the level of harm inflicted in healthcare settings. The commenter suggested that MAP consider the Institute for Healthcare Improvement (IHI) Global Trigger Tool for Measuring Adverse Events in future safety work.

Cost of Care Implications

Over the years, many studies have tried to quantify the cost of adverse events that occur within healthcare settings. The ultimate objective of selecting performance measures for a safety family is to promote reductions in the occurrence of adverse events across a variety of areas. MAP also recognized that there is a strong relationship between appropriate care and safe care. More specifically, MAP considered cost of care by including in the safety family measures of overuse that could result in potential harm to patients. Throughout its deliberations, MAP frequently discussed the importance of balancing the risks and benefits of a treatment or test. MAP plans to identify a measure family focusing on cost of care measures as part of its future work.

Selecting a Safety Family of Measures

To identify existing measures for the safety measure family, MAP considered 316 measures that focused on the nine safety topic areas (Table 1). From this list, MAP identified for the family 55 existing measures as well as several gap areas. MAP noted the limitations of existing measures and suggested possible modifications that could allow a measure to be applied more broadly or show more meaningful results.

Although process measures that are tied closely to desired outcomes support improvement in healthcare, MAP preferred outcome measures over process and structural measures. The consensus was that outcome measures provide more flexibility for providers working to improve quality and more actionable information for purchasers deciding which healthcare options to provide to their employees as well as patients making individual choices about where to receive care.

In discussions about data sources, MAP favored clinical data abstracted from the medical record, although such data are more resource intensive to collect, over administrative data derived from billing codes and claims. As adoption of health information technology (HIT) becomes more widespread, it is anticipated that the ability to gather clinical data directly from electronic health records will become more feasible.

Healthcare-Acquired Infections

MAP preferred the Centers for Disease Control and Prevention's National Healthcare Safety Network (NHSN) methodology and chose four NHSN outcome measures for high-impact HAIs. Two of these, addressing C. difficile (NQF #1717) and MRSA (NQF #1716), were included in the family, pending completion of the NQF endorsement process.

MAP selected a surgical site infection outcome measure (NQF #0753) and encouraged its expansion to include additional procedures and

the pediatric population, a suggestion reinforced by a public commenter. MAP also selected a Surgical Care Improvement Project (SCIP) infection process measure (NQF #0529) and encouraged its expansion to include office-based and ambulatory surgery center settings. This measure was chosen from among three measures that assess the timing and use of prophylactic antibiotics in surgery. Although all three measures address concerns about rising costs and increasing antibiotic resistance, MAP determined it was more parsimonious to include the measure focused on appropriate discontinuation, because antibiotics must be administered in order to be discontinued.

A measure of influenza vaccination coverage for healthcare personnel (NQF #0431) was included with the recommendation that the denominator encompass all personnel working at the facility, not just healthcare personnel. However, one public commenter disagreed with this inclusion, noting that the measure does not achieve MAP's overall goal of improving the delivery of patient care. The commenter also noted that this process measure is already required by accreditation bodies and cautioned that its inclusion in a quality reporting program would be redundant.

Finally, MAP chose two measures to address sepsis: an outcome measure specifically designed to capture information about low birth weight infants that develop sepsis (NQF #0304) and a composite measure addressing treatment of adult patients diagnosed with severe sepsis and septic shock in the emergency department (NQF #0500). MAP noted that post-discharge follow-up for infection is an important missing component in HAI measurement.

Ultimately, MAP did not put forward a measure that captures ventilator-associated pneumonia, but noted that this important safety topic should be addressed. Measure development is under way for ventilator-associated event monitoring, and MAP would support a well-constructed measure that is specified for broad settings in this area. Public commenters reinforced the importance of measuring this area within the safety family.

Overall, public commenters were supportive of the HAI measures selected for the family. In addition to the comments noted above, commenters suggested that additional metrics assessing appropriate antibiotic selection to reduce the incidence of HAIs be included in the family in the future.

TABLE 7. HEALTHCARE-ACQUIRED INFECTIONS MEASURES AND GAPS FOR THE SAFETY FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0138 Endorsed	National Healthcare Safety Network (NHSN) Catheter-Associated Urinary Tract Infection (CAUTI) Outcome Measure	Hospice, Hospital/Acute Care Facility, Behavioral Health/Psychiatric: Inpatient, Long Term Acute Care Hospital, Nursing Home/ Skilled Nursing Facility	Facility, National, State	Measure should be expanded beyond current settings.
#0139 Endorsed	National Healthcare Safety Network (NHSN) Central Line-Associated Bloodstream Infection (CLABSI) Outcome Measure	Hospice, Hospital/Acute Care Facility, Behavioral Health/Psychiatric: Inpatient, Long Term Acute Care Hospital, Nursing Home/ Skilled Nursing Facility	Facility, National, State	Measure should be expanded beyond current settings. Public commenters supported the expansion of this measure beyond the ICU setting.

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0304 Endorsed	Late Sepsis or Meningitis in Very Low Birth Weight (VLBW) Neonates (risk-adjusted)	Hospital/Acute Care Facility	Facility	
#0431 Endorsed	Influenza Vaccination Coverage among Healthcare Personnel	Ambulatory Surgery Center (ASC), Clinic/ Urgent Care, Clinician Office, Dialysis Facility, Hospital/Acute Care Facility, Nursing Home/ Skilled Nursing Facility	Facility	Measure should be expanded to include all personnel working at healthcare facilities.
#0500 Endorsed	Severe Sepsis and Septic Shock: Management Bundle	Hospital/Acute Care Facility	Clinician: Indi-vidual	
#0529 Endorsed	SCIP INF–3 Prophylactic Antibiotics Discontinued within 24 Hours after Surgery End Time (48 hours for cardiac surgery)	Hospital/Acute Care Facility	Can be measured at all levels, Facility, National, Regional	Measure should be expanded to include ambulatory surgical centers and office-based procedures.
#0753 Endorsed	American College of Surgeons – Centers for Disease Control and Prevention (ACS-CDC) Harmonized Procedure Specific Surgical Site Infection (SSI) Outcome Measure	Hospital/Acute Care Facility	Facility, National, State	Measure should be expanded to include additional procedures and the pediatric population.
#1716 Submitted	National Healthcare Safety Network (NHSN) Facility-wide Inpatient Hospital-onset Methicillin-resistant Staphylococcus aureus (MRSA) Bacteremia Outcome Measure	Hospital/Acute Care Facility, Nursing Home/ Skilled Nursing Facility, Inpatient Rehabilitation Facility, Behavioral Health/Psychiatric: Inpatient, Dialysis Facility	Facility, National, State	Measure should be included pending receipt of NQF endorsement.
#1717 Submitted	National Healthcare Safety Network (NHSN) Facility-wide Inpatient Hospital-onset Clostridium difficile Infection (CDI) Outcome Measure	Hospital/Acute Care Facility, Nursing Home/ Skilled Nursing Facility, Inpatient Rehabilitation Facility, Behavioral Health/Psychiatric: Inpatient, Dialysis Facility	Facility, National, State	Measure should be included pending receipt of NQF endorsement.

GAPS

- Vancomycin Resistant Enterococci (VRE) measures, including an outcome measure of positive blood culture results as well as use of appropriate antibiotics to reduce incidence
- Ventilator-associated events for acute care, post-acute care, long-term care hospitals and home health settings
- Post-discharge follow-up on infections in ambulatory settings
- Special considerations for the pediatric population related to ventilator-associated events and C. difficile
- Infection measures reported as rates, rather than ratios (more meaningful to consumers)
- Sepsis (healthcare-acquired and community-acquired) incidence, early detection, and monitoring

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Medication/Infusion Safety

MAP included seven measures in the safety family that address medication and infusion safety while acknowledging the great need for further measure development in this area. Understanding that medication safety requires a careful balance of avoiding overuse, misuse, and underuse of medication, MAP agreed most of the available measures did not adequately address this complexity. The discussion reflected the group members' varied concerns, such as the lack of strong outcome measures, the need to expand measure denominators to include broader populations and the inadequacy of "checkbox" measures in meeting provider and consumer needs.

MAP recommended the Improvement in Management of Oral Medications measure (#0176), suggesting that the specifications be expanded to include other outpatient settings in addition to the home health setting. MAP's discussion focused on the importance of patient-reported measures about understanding the purpose, dosage, and potential side effects of their medications. Although MAP included the Reconciled Medication List Received by Discharged Patients measure (NQF #0646), it was noted that a reconciled medication list is not sufficient if the patient does not also understand the information on the list. Given the importance of medication reconciliation in preventing adverse drug events, the measure was included in the family but with strong recommendation that it be replaced with a more person-centered measure in the future. This decision highlighted the important role of the community pharmacist in providing patient education and the need for improved health literacy of multiple stakeholders.

Shared accountability among providers was another theme that emerged from the discussions since mistakes often occur during care transitions when the possibilities become greater for the administration of the wrong medication or dosage and for drug-allergy or drug-drug interactions. Consequently, MAP included Drugs to Be Avoided in the Elderly: a. Patients Who Receive at Least One Drug to Be Avoided, b. Patients Who Receive at Least Two Different Drugs to Be Avoided (NQF #0022) and recommended the creation of similar measures for other populations. MAP also noted that medication reconciliation must include monitoring for over-the-counter medications and supplements as well. MAP recognized the need for electronic prescribing through the recommendation of Adoption of Medication e-Prescribing (NQF #0486) for the safety family of measures. MAP also recognized the particular importance of medication safety for psychiatric medications and plans to address this topic within the mental and behavioral health family of measures expected to be identified in MAP's next phase of work.

Given MAP's desire for more comprehensive measures for medication/infusion safety, an extensive gap list was identified. Many of the gaps address the issues of increased patient understanding and basic medication safety (e.g., drug-drug, drug-allergy interactions), while a few address federal program requirements (e.g., air embolism, blood incompatibility). Public commenters noted that that the Pharmacy Quality Alliance (PQA) has developed measures addressing drug-drug interactions, comprehensive medication reviews, and the use of antipsychotics in older adults with dementia. MAP encourages the submission of these measures for NQF endorsement.

TABLE 8. MEDICATION/INFUSION SAFETY MEASURES AND GAPS FOR THE SAFETY FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0176 Endorsed	Improvement in Management of Oral Medications	Home Health	Facility	Measure should be expanded to include clinician office/clinic.
#0419 Endorsed	Documentation of Current Medications in the Medical Record	Clinician Office/Clinic, Dialysis Facility, Home Health, Nursing Home/ Skilled Nursing Facility, Other, Behavioral Health/Psychiatric: Outpatient, Inpatient Rehabilitation Facility	Clinician: Individual, National	Measure should be expanded to include acute care facility.
#0646 Endorsed	Reconciled Medication List Received by Discharged Patients (Inpatient Discharges to Home/ Self Care or Any Other Site of Care)	Ambulatory Surgery Center (ASC), Hospital/Acute Care Facility, Nursing Home/ Skilled Nursing Facility, Inpatient Rehabilitation Facility	Facility, Integrated Delivery System	
#0554 Endorsed	Medication Reconciliation Post-Discharge (MRP)	Clinician Office/Clinic	County or City, Health Plan, Integrated Delivery System, National, Regional	Consider a shortened time window for reconciliation for this measure.
#0486 Endorsed	Adoption of Medication e-Prescribing	Clinician Office/Clinic	Clinican: Group, Clinician: Individual	Measure should be expanded to include how e-prescribing is used.
#0293 Endorsed	Medication Information	Hospital/Acute Care Facility	Facility	Measure should be expanded beyond discharges from the emergency department.
#0022 Endorsed	Drugs to be Avoided in the Elderly: a. Patients who Receive at Least One Drug to Be Avoided, b. Patients Who Receive at Least Two Different Drugs to Be Avoided	Clinician Office/Clinic, Pharmacy	Clinician: Group/ Practice, Clinician: Individual, Health Plan, Integrated Delivery System	

GAPS
• Outcomes—injury/mortality related to inappropriate drug management • Patient-reported measures of understanding medications (purpose, dosage, side effects, etc.) • Total number of adverse drug events that occur within all settings (including administration of wrong medication or wrong dosage and drug-allergy or drug-drug interactions) • Polypharmacy and use of unnecessary medications for all ages, especially with high-risk medications • Comprehensive medication review • Use of antipsychotics with patients that have dementia or Alzheimer's disease, particularly in long-term care settings • Role of community pharmacist or home health provider in reconciliation • Blood incompatibility • Air embolism

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Pain Management

During its discussions about pain management, MAP recognized that pain is a universal and often inevitable complication of illness and treatment that should be managed across settings. Managing pain involves a careful balance of avoiding under-treatment and avoiding over-treatment, and working closely with patients to understand their needs and goals. MAP noted that several federal public reporting programs, such as Hospital, Nursing Home, and Home Health Compare, have already incorporated pain management and experience measures into their measure sets.

MAP included in the safety measure family five measures that assess and treat pain. Many of the available measures for pain management are currently specified for hospice and palliative care, such as the Comfortable Dying measure (NQF #0209) and the Hospice and Palliative Care—Pain Screening and Pain Assessment measures (NQF #1634, #1637); MAP therefore recommended that these measures be included in the family but be expanded to capture a broader population and age range. MAP also included Improvement in Pain Interfering with Activity (NQF #0177), a home health measure that MAP suggests should be expanded to include other settings, and Patients Treated with an Opioid Who Are Given a Bowel Regimen (NQF #1617), a measure that currently focuses on pain management in the vulnerable adult population but addresses a potential complication applicable to all populations.

Public commenters strongly supported measures for pain management, but they cautioned that screening and assessment are not sufficient to determine an outcome of alleviated pain. Commenters reinforced MAP's recommendation that the proposed pain management measures be paired with patient experience measures as indicators of actions taken by the provider to make the patient comfortable.

TABLE 9. PAIN MANAGEMENT MEASURES AND GAPS FOR THE SAFETY FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0177 Endorsed	Improvement in Pain Interfering with Activity	Home Health	Facility	Measure should be expanded beyond home health to all care settings.
#0209 Endorsed	Comfortable Dying: Pain Brought to a Comfortable Level Within 48 Hours of Initial Assessment	Hospice	Facility, National	Measure should be expanded beyond the hospice setting.
#1617 Endorsed	Patients Treated with an Opioid Who Are Given a Bowel Regimen	Clinician Office/Clinic, Hospital/Acute Care Facility	Facility, Clinician: Group/Practice, Health Plan, Individual	
#1634 Endorsed	Hospice and Palliative Care—Pain Screening	Hospice, Hospital/ Acute Care Facility	Facility, Clinician: Group/Practice	Measure should be expanded beyond hospice or palliative care patients.
#1637 Endorsed	Hospice and Palliative Care—Pain Assessment	Hospice, Hospital/ Acute Care Facility	Facility, Clinician, Group/Practice	Measure should be expanded beyond hospice or palliative care patients.
GAPS				
• Effectiveness of pain management paired with patient experience and balanced by overuse/misuse monitoring • Assessment of depression with pain				

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Venous Thromboembolism

MAP chose four measures addressing deep vein thrombosis/pulmonary embolism (DVT/PE) for the safety measure family. Two of these measures—one focused on DVT and the other on PE—identify patients who are appropriately on anticoagulation for at least three months after the diagnosis (NQF #0581, #0593), and one measure captures the number of potentially preventable venous thromboembolisms (VTEs) that occur in a facility (NQF #0376). Evidence suggests that the existing process measures are closely aligned with outcomes for this particular condition, and the four VTE measures above are all process measures. MAP selected Post-operative PE or DVT (NQF #0450) as an outcome measure for surgical patients and recommended that its specifications be revised to include all medical patients. Therapeutic monitoring for adherence to VTE medications and for medication side effects to protect against undesirable consequences of medication use is important. MAP recommended expansion of the settings for those measures that are currently specified for only acute care facilities.

TABLE 10. VENOUS THROMBOEMBOLISM MEASURES AND GAPS FOR THE SAFETY FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0376 Endorsed	VTE-6: Incidence of Potentially-Preventable VTE	Hospital/Acute Care Facility	Facility	Measure should reflect updated evidence (use of pharmacologic versus mechanical interventions).
#0450 Endorsed	PSI 12: Post-Operative PE or DVT	Hospital/Acute Care Facility	Facility	Measure should be expanded to include medical patients.
#0581 Endorsed	Deep Vein Thrombosis Anticoagulation ≥3 Months	Clinician Office/Clinic	County or City, Health Plan, Clinician: Group/Practice, Clinician: Individual, Integrated Delivery System	Measure requires pharmacy plan and should be expanded to include anticoagulation maintained in therapeutic range. Could combine measure with #0593.
#0593 Endorsed	Pulmonary Embolism Anticoagulation ≥3 Months	Clinician Office/Clinic	County or City, Health Plan, Clinician: Group/Practice, Clinician: Individual, Integrated Delivery System	Measure requires pharmacy plan and should be expanded to include anticoagulation maintained in therapeutic range. Could combine measure with #0581.
GAPS				
• Adherence to venous thromboembolism (VTE) medications, monitoring of therapeutic levels and medication side effects • Monitoring for VTE recurrence • VTE outcome measures for ambulatory surgical centers and post-acute care/long-term care settings				

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Perioperative/Procedural Safety

Because many events covered by the perioperative/procedural safety topic are rare (e.g., foreign object retained after surgery, burn, laceration, puncture, iatrogenic pneumothorax), MAP's discussion centered on the unique challenges of measuring and reporting these events. Despite their rare occurrence, the reporting of these events is important to consumers; unlike for many healthcare topics and conditions, information about serious adverse events is more understandable to the general public. MAP recognized that reporting is complicated by the small numbers of events and suggested creation of a single composite measure that captures the most significant serious reportable events. MAP

reviewed the component measures of available composite measures of complications for both the adult and pediatric populations, but decided against their inclusion. Therefore, composite measures of serious report events remain a gap area. For the safety family, MAP recommended six available measures that capture information about these events such as Accidental Puncture or Laceration (NQF #0344), Foreign Body Left in During Procedure (NQF #0363), and Wrong Site, Wrong Side, Wrong Patient, Wrong Procedure, Wrong Implant (NQF #0267).

Additionally, MAP recognized that perioperative/procedural safety is a topic for which checklists are particularly useful, and therefore recommended that the Safe Surgery Checklist measure be brought forward for NQF endorsement and inclusion in the safety measure family. MAP recommended that the remaining six measures for this topic be expanded to include all settings in which relevant procedures are performed. Although MAP sought a measure addressing iatrogenic pneumothorax, there was concern that the denominator of the currently available measure is too broad and should be specified to apply to only "at risk" patients in a facility to capture accurate data. One public commenter disagreed with MAP's decision not to include these iatrogenic pneumothorax measures within the family at this time.

TABLE 11. PERIOPERATIVE/PROCEDURAL SAFETY MEASURES AND GAPS FOR THE SAFETY FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0263 Endorsed	ASC-1: Patient Burn—Percentage of ASC Admissions Experiencing a Burn Prior to Discharge	Ambulatory Surgery Center (ASC)	Facility	Measure should be expanded to include all procedural settings.
#0267 Endorsed	ASC-3: Wrong Site, Wrong Side, Wrong Patient, Wrong Procedure, Wrong Implant	Ambulatory Surgery Center (ASC)	Facility	Measure should be expanded to include all procedural settings.
#0344 Endorsed	Accidental Puncture or Laceration (PDI 1) (risk adjusted)	Hospital/Acute Care Facility	Facility	Measure should be expanded to include all procedural settings.
#0345 Endorsed	PSI 15: Accidental Puncture or Laceration	Hospital/Acute Care Facility	Facility	Measure should be expanded to include all procedural settings.
#0362 Endorsed	Foreign Body Left after Procedure (PDI 3)	Hospital/Acute Care Facility	Facility	Measure should be expanded to include all procedural settings.
#0363 Endorsed	Foreign Body Left in During Procedure (PSI 5)	Hospital/Acute Care Facility	Facility	Measure should be expanded to include all procedural settings.
Not Endorsed	Safe Surgery Checklist			Measure should be brought to NQF for endorsement.
GAPS				
• Single composite measure that encompasses all, or most significant, "never events" • Iatrogenic pneumothorax measures: modify denominator of NQF #0346 and #0348 to include patients receiving treatments that put them at risk for this complication • Anesthesia events (inter-op myocardial infarction, corneal abrasion, broken tooth, etc.) • Perioperative respiratory events • Perioperative blood loss or transfusion/over-transfusion • Altered mental status in perioperative period				

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Injuries from Immobility

Of the six measures recommended for the safety family that address injuries from immobility, MAP focused largely on outcome and paired measures, specifically those that address falls and pressure ulcers. Recognizing the tension between maintaining patient safety and "excess safety," MAP cautioned that it will be important to monitor for potential unintended consequences resulting from application of these measures, such as increased use of indwelling catheters or decreased patient ambulation. MAP reaffirmed the importance of having a culture of safety in place for all facilities that responsibly manages adverse events if they occur and encourages disclosing, rather than hiding, negative outcomes.

MAP noted the need for a standard definition of falls across settings, as well as for consistent staging requirements for pressure ulcer measurement (e.g., inclusion of pressure ulcers that are stages 3 and 4). Although it may be more resource intensive for providers to conduct a one-day prevalence study to gather data for the measure, MAP recommended a Pressure Ulcer Prevalence measure (NQF #0201). MAP noted that measures monitoring the use of restraints and seclusion are also related to safety; however, deferred review of such measures to the mental and behavioral health family of measures expected in the next phase of work.

Public commenters noted that this category includes multiple measures addressing the same concepts in slightly nuanced ways, which could create confusion among implementers and derail improvement. One commenter reinforced the need for standard definitions of falls and the importance of measuring similar time periods with similar data.

TABLE 12. INJURIES FROM IMMOBILITY MEASURES AND GAPS FOR THE SAFETY FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0141 Endorsed (paired with #0202)	Patient Fall Rate	Hospital/Acute Care Facility	Clinician: Group/ Practice	
#0181 Endorsed	Increase in Number of Pressure Ulcers	Home Health	Facility	
#0201 Endorsed	Pressure Ulcer Prevalence	Hospital/Acute Care Facility, Inpatient Rehabilitation Facility, Long Term Acute Care Hospital, Nursing Home/ Skilled Nursing Facility	Facility, Clinicain: Team	
#0202 Endorsed (paired with #0141)	Falls with Injury	Hospital/Acute Care Facility	Clinician: Team	
#0266 Endorsed	ASC-2: Patient Fall	Ambulatory Surgery Center (ASC), Hospital/Acute Care Facility	Clinician: Individual	Measure should be harmonized with #0141 and #0202.
#0674 Endorsed	Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay)	Nursing Home/Skilled Nursing Facility	Facility, National	
GAPS				
• Standard definition of falls across settings to avoid potential confusion related to two different fall rates • Evaluating bone density, and prevention and treatment of osteoporosis in ambulatory settings • Structural measures of staff availability to ambulate and reposition patients, including home care providers and home health aides				

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Safety-Related Overuse and Appropriateness

MAP recognized that the issue of appropriateness includes not only overuse, but underuse as well. For the purpose of selecting appropriateness measures for the safety family, MAP assigned high priority to measures that assess overuse and harm to the patient. MAP also highlighted the need to weigh the benefits and risks prior to ordering tests and treatments. Factors include time, money, and physical and emotional stress on vulnerable patients and their caregivers. MAP emphasized that care should match patient goals and preferences in addition to being evidence-based.

MAP chose 12 measures related to the appropriate use of tests and treatments for the safety family. Although they are all process measures, MAP considered them to be important measures for inclusion in the family in the absence of better outcome measures. Examples include Low Back Pain: Use of Imaging Studies (NQF #0052) and Antibiotic Treatment for Adults with Acute Bronchitis: Avoidance of Inappropriate Use (NQF #0058). Of the 12 measures, three measures were specified for the pediatric population, such as Appropriate Treatment for Children with Upper Respiratory Infection (NQF #0069). MAP expressed concern about the lack of measures related to radiation exposure to children caused by imaging overuse and encouraged measure development to address this critical issue.

MAP noted a need for improved communication about the scoring of these measures: for some measures a lower score is a positive indicator, and for others a lower score is a negative indicator, which can be confusing. For example, a higher score for the Appropriate Testing for Children with Pharyngitis measure (NQF #0002) indicates better performance (i.e., appropriate testing), whereas a lower score for the Appropriate Treatment for Children with Upper Respiratory Infection measure (NQF #0069) indicates better performance. Public reporting of measure results should be accompanied by a brief explanation of how to interpret the directionality of measure results.

While agreeing with the inclusion of the majority of measures in this topic area, one public commenter disagreed with the selection of measures NQF #0052 and NQF #0309 for the safety family. The commenter suggested that neither of these measures involve public health or safety concerns and MAP was overreaching by including them within the safety measure family.

TABLE 13. SAFETY-RELATED OVERUSE AND APPROPRIATENESS MEASURES AND GAPS FOR THE SAFETY FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0002 Endorsed	Appropriate Testing for Children with Pharyngitis	Clinician Office/Clinic, Urgent Care	Health Plan, Clinician: Group/Practice, Clinician: Individual, Integrated Delivery System, National, Regional, State	
#0052 Endorsed	Low Back Pain: Use of Imaging Studies	Clinician Office/Clinic	Health Plan, Clinician: Group/Practice, Clinician: Individual, Integrated Delivery System, National, Regional, State	Measure should be expanded to include individuals over 50 years old.

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0058 Endorsed	Antibiotic Treatment for Adults with Acute Bronchitis: Avoidance of Inappropriate Use	Urgent Care, Clinician Office/Clinic	Health Plan, Clinician: Group/Practice, Clinician: Individual, Integrated Delivery System, National, Regional, State	
#0069 Endorsed	Appropriate Treatment for Children with Upper Respiratory Infection (URI)	Urgent Care, Clinician Office/Clinic	Health Plan, Clinician: Group/Practice, Clinician: Individual, Integrated Delivery System, National, Regional, State	
#0305 Endorsed	LBP: Surgical Timing	Clinician Office/Clinic	Clinician: Group/Practice, Clinician: Individual	
#0309 Endorsed	LBP: Appropriate Use of Epidural Steroid Injections	Clinician Office/Clinic	Clinician: Group/Practice, Clinician: Individual	
#0656 Endorsed	Otitis Media with Effusion: Systemic Corticosteroids—Avoidance of Inappropriate Use	Urgent Care, Clinician Office/Clinic	Clinician: Group/Practice, Clinician: Individual, Clinician: Team	
#0657 Endorsed	Percentage of Patients Aged 2 Months through 12 years with a Diagnosis of OME Who Were Not Prescribed Systemic Antimicrobials	Ambulatory Surgery Center (ASC), Urgent Care, Clinician Office/ Clinic	Clinician: Group/Practice, Clinician: Individual, Clinician: Team	
#0659 Endorsed	Endoscopy & Polyp Surveillance: Colonoscopy Interval for Patients with a History of Adenomatous Polyps—Avoidance of Inappropriate Use	Ambulatory Surgery Center (ASC), Urgent Care, Clinician Office/ Clinic, Hospital/Acute Care Facility	Clinician: Group/Practice, Clinician: Individual, Clinician: Team	
#0667 Endorsed	Inappropriate Pulmonary CT Imaging for Patients at Low Risk for Pulmonary Embolism	Hospital/Acute Care Facility, Other	Facility, Clinician: Group/ Practice	
#0668 Endorsed	Appropriate Head CT Imaging in Adults with Mild Traumatic Brain Injury	Hospital/Acute Care Facility, Other	Facility, Clinician: Group/ Practice	
#0755 Endorsed	Appropriate Cervical Spine Radiography and CT Imaging in Trauma	Hospital/Acute Care Facility, Other	Facility, Clinician: Group/ Practice, National, Regional, State	

GAPS

- Consistency in scoring for public reporting: should be clear if high or low scores are desired
- Chemotherapy appropriateness, including dosing
- Over diagnosis, under diagnosis, misdiagnosis
- Use of sedatives, hypnotics, atypical anti-psychotics, pain medications (with chronic pain management)
- Treatment that is not matched to patient goals, especially with palliative and end-of-life care
- Antibiotic use for sinusitis
- Use of cardiac computed tomography and stenting
- Use of radiographic imaging in the pediatric population

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Obstetrical Adverse Events

MAP included three outcome measures and one process measure related to obstetrical adverse events in the safety family of measures. MAP carefully considered the inclusion of a measure of healthy term births. A unique aspect of maternity care is that ostensibly the clinical team is not treating an illness or injury; rather, it is assisting in a normal biological process that should result in a healthy outcome. In addition, the health of both mother and baby at the time of delivery are heavily influenced by the quality of prenatal care. MAP concluded that system measures that capture whether this healthy outcome was attained are important, and included in the family both the Healthy Term Newborn measure (NQF #0716) and the Under 1500g Infant Not Delivered at Appropriate Level of Care measure (NQF #0477) as representatives of healthcare system success. Furthermore, MAP included a measure of elective deliveries prior to 39 weeks gestation (NQF #0469) and a measure of elective C-sections (NQF #0471), but cautioned that monitoring for potential undesirable consequences, such as providers waiting too long to deliver babies, is important. These two measures should be reported with the Healthy Term Newborn measure as balancing measures. MAP also noted that maternity care makes up a significant portion of healthcare services, and there is a dearth of measures in this area.

Public commenters offered several potential ways to address some of the measure gaps noted in this area. One suggestion was to develop separate measures for normal birth and high-risk birth if a complication is known to be more prevalent in high-risk cases. Alternatively, a single measure could be created for both high-risk and normal births, but with proper risk adjustment. One commenter suggested creating an overall obstetric complications composite measure encompassing vaginal tears, excessive bleeding requiring transfusion, and newborn and post-operative complications related to delivery.

TABLE 14. OBSTETRICAL ADVERSE EVENTS MEASURES AND GAPS FOR THE SAFETY FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0469 Endorsed	PC-01 Elective Delivery Prior to 39 Completed Weeks Gestation	Hospital/Acute Care Facility	Facility, National	The contraindications list should be expanded for this measure.
#0471 Endorsed	PC-02 Cesarean Section	Hospital/Acute Care Facility	Facility, National	
#0477 Endorsed	Under 1500g Infant Not Delivered at Appropriate Level of Care	Hospital/Acute Care Facility	County or City, Facility, Health Plan, National, Regional, State	
#0716 Endorsed	Healthy Term Newborn	Hospital/Acute Care Facility	Facility, Integrated Delivery System, Regional, State, Clinician: Team	
GAPS				
• Obstetrical adverse event index • Overall complications composite measure • Measures using National Health Safety Network definitions for infections in newborns				

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Complications-Related Mortality

Measuring patient mortality is extremely important, so it is critical to measure it accurately. MAP recommended one complications-related mortality outcome measure as a starting point for the safety family, Death Among Surgical Inpatients with Serious, Treatable Complications (NQF #0351). MAP noted the lack of present-on-admission (POA) exclusions from this measure and raised concern that this could cause the measure results to be misleading. Also of concern with mortality measurement is the quality of information conveyed through public reporting. To distinguish low- from high-performing hospitals, mortality measures require proper risk-adjustment, exclusions, and POA indicators and should be constructed in a way that does not penalize providers who deliver hospice and/or palliative care in accordance with the patient's preferences.

TABLE 15. COMPLICATIONS-RELATED MORTALITY MEASURE AND GAPS FOR THE SAFETY FAMILY OF MEASURES

MEASURE				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0351 Endorsed	Death among Surgical Inpatients with Serious, Treatable Complications (PSI 4)	Hospital/Acute Care Facility	Facility	Measure should include a present-on-admission indicator.
GAPS				
• Preferably expressed as a ratio instead of percentage • Questions of how to accommodate small numbers • Expand to post-acute care/long-term care settings • Failure to rescue				

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

CARE COORDINATION FAMILY OF MEASURES

NQF previously defined care coordination as a "function that helps ensure that the patient's needs and preferences for health services and information sharing across people, functions, and sites are met over time."[4] Simply stated by one MAP member, "Care coordination is about what happens in the space between providers." Successful care coordination encompasses person and caregiver engagement, effective communication, accurate transmission of information, and appropriate care, helping to reduce errors and avoidable hospital admissions, readmissions, and emergency department (ED) visits. However, the current system consists of individuals (e.g., patients and caregivers, clinicians) and entities (e.g., hospitals, post-acute providers, community agencies) that lack the processes and infrastructure necessary to meaningfully exchange information with one another in a timely and effective manner (see Appendix G, High Leverage Measurement Opportunities – Background Information).

While developing the care coordination family of measures, MAP considered the NQS goals for the priority of "promoting effective communication and coordination of care," which are (1) improving the quality of care transitions and communications across care settings, (2) improving the quality of life for patients with chronic illness and disability by following a current care plan that anticipates and addresses pain and symptom management, psychosocial needs, and functional status, and (3) establishing shared accountability and integration of communities and healthcare systems to improve quality of care and reduce health disparities. Additionally, MAP sought to build on prior NQF work addressing care coordination quality measurement, including the NQF-Endorsed Definition and Framework for Measuring and Reporting Care Coordination and the **Preferred Practices and Performance Measures for Measuring and Reporting Care Coordination**, to identify high-leverage opportunities for measurement and existing quality measures that could be implemented immediately.

Using these prior efforts as a foundation, MAP identified six priority topic areas for aligning care coordination quality measurement, which were divided into a number of subtopics based on available measures. Table 11 lists the topics and subtopics addressed within the care coordination measure family.

TABLE 16. CARE COORDINATION PRIORITY TOPIC AND SUBTOPIC AREAS

TOPIC	SUBTOPIC
Avoidable Admissions and Readmissions	Avoidable Admissions
	Avoidable Readmissions
	Avoidable Emergency Department Visits
System Infrastructure Support	Health Information Technology (HIT)
	Medical Homes; Accountable Care Organizations
	Tracking/Reminder Systems
Care Transitions	Effectiveness
	Timeliness
Communication	Provider-Patient Communication
	Provider-Provider Communication

TOPIC	SUBTOPIC
Care Planning	General
	Condition Specific
	Patient Preference at End of Life
Patient Surveys Related to Care Coordination	Patient Experience and Perception of Care Coordination

Also included within this section of the report is additional guidance from MAP on the selection and implementation of avoidable admission and readmission measures. Acknowledging the unique complexity of measurement in this area, the NQF Board of Directors asked MAP to develop a guidance document about the use of avoidable admission and readmission measures in specific programs to be used by program implementers as well as MAP during its annual pre-rulemaking deliberations

Themes from the Identification of the Care Coordination Family of Measures

Five major themes emerged from MAP's discussions related to care coordination. These included the importance of person and caregiver engagement, access to resources in the community, involvement of the entire healthcare system in coordination of care, continued challenges of collecting meaningful data for quality measurement, and cost of care implications.

Person and Caregiver Engagement

MAP emphasized that person and caregiver engagement should be the focus of a care coordination family of measures. Person and caregiver engagement should cross the lifespan and care settings, actively involving the individual in managing disease and reducing burden. MAP underscored the importance of communication, shared decision-making, and inclusion of individuals and their families/caregivers in care planning, all of which promote self-management and health literacy. Care should be aligned with patient goals and preferences to prevent the provision of unwanted treatments or unnecessary institutional placements, and the care plan should address the individual's psychosocial needs and functional status. Additionally, MAP noted that measures should assess patient and caregiver understanding and agreement with the care plan as well as the patient's ability to manage the necessary self-care.

MAP also discussed different perspectives on the breadth of optimal care coordination. MAP emphasized the need to promote independent living by considering multiple aspects of wellness and extending care coordination beyond healthcare to incorporate social supports and other types of services. For example, the Money Follows the Person (MFP) and participant-directed services programs are redoubling longstanding efforts by the Centers for Medicare and Medicaid Services (CMS) and states to safely transition individuals with disabilities from institutions to home and community settings. Engaging in person-centered care planning and two-way communication is vital to the success of these efforts. MAP plans to identify a person and family engagement measure family to continue work in this area.

Access to Community Resources

MAP recognized the vital role that community resources play in allowing individuals to live well on a day-to-day basis while staying as independent as possible and receiving the "right" level of care. Resources such as home health, supportive services, telehealth, and community pharmacists are crucial parts of self-management and effective care transitions. Access to such services improves quality of life while helping to prevent avoidable hospital admissions and readmissions as well

as reducing overuse and inefficiencies. MAP recognized the importance of integrating home and community resources into transitions and care plans through assessing the ability of patients to connect with community resources and helping facilitate that connection. Measures are needed to address the role of the community and referrals to necessary community services.

System-Wide Engagement in Care Coordination

MAP acknowledged that truly successful care coordination only occurs when the entire healthcare system is engaged: promoting wellness and preventing, delaying, or minimizing the progression of disease or disability as a person's care needs evolve over time and across settings. Care coordination addresses the space between providers, and existing measures fail to capture shared accountability throughout the system and community. Available care coordination measures are mostly hospital centric, reinforcing the silos within the system. Although these measures can show system success, measures specified for only one setting or level of analysis do not hold the entire system accountable. For many long-term care users, including frail elders and individuals with multiple chronic conditions or disabilities, these measures do not address the ongoing need for the coordination of different types of services. MAP also recognized measures that address the care coordination needs of behavioral health patients as a gap area.

Existing measures of clinician care coordination are generally physician focused and do not apply to other members of the multidisciplinary care team, such as nurses, social workers, allied health professionals, and home and community based workers, including non-clinical personnel. MAP recognized the need for measures that move beyond the traditional physician-patient dyad to reflect the vital role of other disciplines and enable shared responsibility for collective action among related care providers. MAP also noted the need for additional measures addressing models of care that are more integrated and promote shared accountability across the system, including, but not limited to, measures for accountable care organizations (ACOs) or patient-centered medical homes (PCMHs).

Data Issues

MAP discussed issues of data sources and data collection for care coordination measures. Provider communication measures should address both the sending and receiving of information, but current measures lack this bi-directionality. Recognizing the challenges of current care silos and lack of electronic health record (EHR) interoperability, MAP noted the need for continued development of health records that use common data elements and can be exchanged and used for automated, real-time measurement systems as patients receive care at multiple sites. More comprehensive patient-reported data relating to care coordination are also needed. Patients and caregivers provide a practical viewpoint and add great value to defining effective care coordination process components. MAP encourages further development of patient-reported measures of care coordination.

Cost of Care Implications

Care coordination impacts both quality and cost: preventing harmful and costly complications, improving patient outcomes, and lowering costs by reducing readmissions, ED visits, and duplicative services. Poor care coordination can lead to overuse, misuse, and inefficiency, driving up costs while simultaneously lowering quality through duplication and unnecessary services. The rate of hospital readmissions among Medicare beneficiaries within 30 days of discharge is one indicator of good care coordination. Nearly 20% of Medicare patients discharged from the hospital are readmitted within 30 days, translating to 2.6 million seniors readmitted at a cost of more than $26 billion every year.[5] Better care coordination can lead to fewer readmissions and ED visits, improving outcomes and satisfaction while reducing costs. MAP plans to identify a cost of care measure family as part of its future work.

MAP GUIDANCE FOR THE SELECTION OF AVOIDABLE ADMISSION AND READMISSION MEASURES

MAP's Role

Recognizing the complexity inherent in measuring and safely reducing hospital readmissions, the NQF Board of Directors asked MAP to develop guidance for implementing readmission measures for public reporting and performance-based payment programs, in the context of care coordination and shared accountability. This document is intended to provide guidance to program implementers (e.g., CMS, health plans) and to MAP members during pre-rulemaking deliberations about the use of avoidable admission and readmission measures.

The guidance document defines implementation principles for reducing avoidable admissions and readmissions and the implementation issues that should be taken into account when selecting avoidable admission and readmission measures for programs. This guidance is intended to be used in tandem with the MAP Measure Selection Criteria. The identification of measures for specific programs, which is the focus of the MAP pre-rulemaking process, is beyond the scope of this document.

Background

Safely reducing avoidable admissions and readmissions represents a substantial opportunity for improvement in health care quality and affordability. The National Quality Strategy promotes effective communication and care coordination through improving the quality of care transitions and communications across settings. The HHS Partnership for Patients initiative has identified readmissions as a priority, setting an ambitious goal of reducing readmissions by 20% by the end of 2013. To this end, payers and purchasers in the public and private sectors, in collaboration with providers and health professionals, are working to better coordinate care and reduce avoidable admissions and readmissions.

The gap between current performance and what is achievable is enormous. About one in five Medicare beneficiaries who have been hospitalized are readmitted within 30 days, increasing costs of the Medicare program by billions of dollars.[6] Although Medicare beneficiaries are more likely to be readmitted, private sector purchasers also spend billions of dollars each year on rehospitalizations.[7,8] Patients and their families bear multiple burdens associated with avoidable admissions and readmissions, in terms of prolonged illness and pain, potential unnecessary exposure to harm, emotional distress, loss of productivity, inconvenience, and added cost.

Addressing avoidable admissions and readmissions is complex and will require a fundamental transformation of our approaches to healthcare delivery and financing. Many readmissions, particularly those that are planned, are likely necessary for good care. However, a variety of factors contribute to avoidable admissions and readmissions, including coordination of care delivery related to the quality of inpatient or post-acute treatment, poor communication, inadequate care planning, lack of patient involvement with and understanding of the treatment plan, and inadequate community supports.[9]

Just as the causes of avoidable admissions and readmissions are multi-factorial, so are the solutions.[10] Effective coordination of care requires all of those involved in care delivery to look beyond their walls and identify partners in improving care. Hospitals play a central role in reducing readmissions, but health professionals

(particularly primary care providers) and other post-acute providers (such as nursing homes and home health providers) also have equally important roles. In addition, health plans can contribute data and incentives. Perhaps most importantly, patients and their support systems in the community, are essential but often untapped partners in reducing avoidable admissions and readmissions and must be fully integrated into any improvement strategy.

Performance measurement also plays an important role in motivating efforts to safely reduce avoidable admissions and readmissions. Measurement provides readily available information to focus improvement efforts and drives change and accountability for improvement. However, measurement is not a perfect science, and attention to what is measured and how it is measured is important to understand and mitigate potential undesired effects of measurement.

Implementation Principles for Safely Reducing Avoidable Admissions and Readmissions

To guide the selection of measures that will encourage care coordination and safely reduce avoidable admissions and readmissions, MAP Safety/Care Coordination Task Force and Coordinating Committee members identified the following implementation principles:

- **Promote shared accountability**. Reducing avoidable admissions and readmissions requires the coordinated efforts of everyone involved in patient care across the continuum, and performance measures are needed to assess readmissions across every site of care. New multi-disciplinary teams and creative partnerships are needed to build coordinated approaches to care centered on the patient, and new payment and delivery models are needed to incentivize integration across the system. Two examples that could provide the right incentives are accountable care organizations and patient-centered medical homes, financed by shared savings, bundled payments, or global payments. MAP identified the importance of identifying a single point of contact for care coordination, most often a primary care provider. MAP also noted the need for development of health professionals' care coordination skills and capacity to work within patient-centered, team-based models of care to promote shared accountability. Performance measures are needed across every site of care to assess the effectiveness of these shared accountability approaches for safely reducing readmissions.
- **Engage patients as partners**. Patients and their caregivers have the best information about their needs, and patients themselves are a common thread across their care. As such, their active engagement as partners in care is essential for safely reducing avoidable admissions and readmissions. Patients should serve in leadership roles, such as governance boards, and provide input into the design and implementation of policies and programs. Individuals should be partners in their care planning to ensure they help shape their goals for care, fully understand their care plans, and receive the support they need to effectively engage in their care processes. Providers must account for differing levels of health literacy and activation among patients and for various life circumstances. MAP identified focusing on the needs of complex patients, such as persons with mental illness or children with poorly-controlled asthma, to be an effective starting place for engaging patients.
- **Ensure effective transitions**. One of the greatest contributing factors to reducing readmissions is safe and effective transitions from one care setting to the next, including to home. All of the other principles and interventions discussed here contribute to smooth, patient-centered transitions, including effective communication with patients and among providers, and engaging patients and community resources throughout the process. MAP identified additional factors that support effective transitions, including systems that ensure follow-up appointments are made and

kept, follow-up phone calls are made, and prescriptions are filled and medications are taken properly.

- **Communicate across transitions**. Timely exchange of information, so that the right person has the right information at the right time, is key to reducing avoidable admissions and readmissions. Two-way communication with patients and patient education are important so that everyone involved understands the care plan. Communication among providers is important to ensure all are following the same care plan and handoffs are completed. MAP noted that because health plans have relationships with a variety of providers and related organizations, health plans can be pivotal in ensuring that important information is shared with providers to track patient progress across settings. MAP also noted the important role for health IT in supporting communication across transitions.
- **Engage communities as partners**. Patient and caregiver readiness for discharge from inpatient or post-acute care depends on the supports that will be available to them once they return home or to community-based care. Numerous community-based resources are available, but providers and patients may be unaware of or unable to access the programs. For patients with long-term care needs, local agencies can assist individuals in navigating support options, such as home-delivered meals, transportation, and personal care attendant services.

Implementation Issues for Avoidable Admission and Readmission Measures

MAP Safety/Care Coordination Task Force and Coordinating Committee members reviewed the available measures to determine which should be included in the care coordination family of measures[11] and identified gaps for which current measures do not exist or may need refinement. In addition, MAP members raised potential implementation issues associated with the use of avoidable admission and readmission measures.

In deliberations about which avoidable admission and readmission measures should be included in the care coordination family, MAP identified a number of issues to inform the use of these measures in programs:

- **Readmission measures should be part of a suite of measures to promote a system of patient-centered care coordination**. The suite should assess performance of all entities and individuals who are jointly accountable for safely reducing readmissions (e.g., hospital, post-acute, and ambulatory providers), should include measures of both avoidable admissions and readmissions, and should address important care coordination processes as well as readmissions. Process measures and patient-reported measures of experience with care can help guide basic actions that are fundamental to improving outcomes.
- **All-cause and condition-specific measures of avoidable admissions and readmissions are both important**. All-cause measures provide aggregate information across conditions that is less likely to suffer from small sample size issues, and may be more meaningful for public reporting. In addition, all-cause measures promote systems thinking and give providers flexibility to determine the most effective interventions for the highest-priority improvement opportunities across their systems. Condition-specific measures provide actionable information for those working to improve care coordination in condition-specific domains, and are meaningful to patients with specific conditions.
- **Monitoring by program implementers is necessary to understand and mitigate potential unintended consequences** of measuring avoidable admissions and readmissions. Potential undesirable effects of measurement include providers delaying necessary readmissions to improve measurement results and lower scores disadvantaging those caring for higher-risk populations. Monitoring options, or potential balancing measures, include mortality rates, average length of stay, observation

days, emergency department visits, patient experience, post-discharge follow-up rates, proportion of discharges to post-acute care settings versus home, and financial impact on safety net providers.

- **Risk adjustment** for patient-level severity of illness alone may not address all of the nuances inherent in the complexity of reporting avoidable admissions and readmissions. Institutional providers, health professionals, and health plans have very different resources available to serve very different patient populations. Similar entities should be compared to each other. Program implementers should consider stratifying measures by factors such as race, gender, and socioeconomic status to enable fair comparisons. Stratification has the advantage of not obscuring disparities in care for populations with inequities in health outcomes. In addition, program implementers should consider adjustments to payments, rather than adjustments to measures, to address equity issues.
- Readmission measures should **exclude planned readmissions**, to avoid penalizing providers for readmissions that are necessary for high quality care. The National Uniform Billing Committee has identified new billing codes that can be used to identify planned and unrelated readmissions on claims.

Selecting a Care Coordination Family of Measures

In identifying the care coordination measure family, MAP considered a total of 135 measures focusing on the six care coordination topic areas (Table 11). A set of 60 available measures and a number of measure gaps were identified. MAP noted the limitations of existing measures and possible modifications that could allow a measure to be applied more broadly or to show more meaningful results.

As with the safety family of measures, MAP preferred outcome measures over process and structural measures since outcome measures provide more flexibility for providers working to improve quality and more actionable information for consumers and purchasers. However, one public commenter expressed concern that the care coordination family does not reflect an appropriate assortment of process, structural, experience of care, cost/resource use/appropriateness, and outcome measures. The commenter suggested that process and structural measures are necessary to help inform providers of the best practices for achieving desired outcomes.

Avoidable Admission and Readmission Measures

The available measures of avoidable admissions and readmissions are generally hospital centric, although the underlying issues are not exclusively related to the quality of care received in the hospital setting. These hospital measures have prompted improvement, but MAP recognized that measurement should be expanded to promote shared accountability for all entities across the care continuum. In the meantime, MAP included several existing measures in the care coordination family to signal the significance of the issue and the commitment to safely reducing avoidable admissions and readmissions.

MAP included four measures of avoidable admissions and ED visits in the care coordination family. Two of these measures are specific to patients who are receiving home care services and are subsequently hospitalized or visit the ED (NQF #0171, #0173). MAP recommended that similar measures be developed for other post-acute and long-term care settings. Another measure addresses admissions for patients undergoing procedures in an ambulatory surgery center (NQF #0265). MAP also included a measure assessing the number of patients with asthma, a pediatric high-impact condition, who have one or more ED visits during a 12-month period (NQF #1381).

MAP discussed whether to include potentially avoidable complications measures for hospitalized patients with acute myocardial infarction, stroke, and pneumonia (NQF #0704, #0705, #0708) in the care coordination family. MAP chose to include these measures, finding that they were meaningful to consumers and promoted parsimony, because each measure addresses multiple complications as well as readmissions. MAP also included a similar, broader measure of potentially avoidable complications for patients with any of six chronic conditions over a calendar year (NQF #0709). MAP noted that none of these complications measures included an indicator for whether the condition was present on admission, which should be considered for future refinement of these measures. One public commenter reinforced MAP's concern regarding the lack of present on admission indicators for these measures, calling it a significant deficiency. The commenter characterized the POA indicator as indispensable in eliminating false positives of complications and advised that implementation of these measures be deferred until the POA indicator is incorporated.

MAP also discussed which of the available readmissions measures—considering both condition-specific and hospital-wide approaches—to include in the care coordination family. Ultimately, MAP chose the Health Plan All-Cause Readmissions measure (NQF #1768) and the Hospital-Wide All-Cause Unplanned Readmission measure (NQF #1789). Although both types of measures are important and may suit specific program purposes, MAP found inclusion of the Health Plan All-Cause and Hospital-Wide All-Cause measures in the family to be the more parsimonious option. In addition, MAP noted that all-cause measures promote system-wide improvement for all conditions. MAP was also concerned that multiple differing condition-specific measures addressing the same area of performance could cause confusion by overloading the public, purchasers, and providers with too much information.

Purchasers are encouraging health plans to assume more accountability for avoidable readmissions, and the Health Plan All-Cause Readmissions measure (NQF #1768) helps illustrate plans' roles. While the measure does not currently account for planned versus unplanned readmissions, the measure developer intends to include this distinction within a future version of the measure. In addition, when publicly reporting measure results, similar health plans should be compared with one another. For example, health plans exclusively serving vulnerable populations should not be compared to health plans serving broader, potentially healthier populations.

The Hospital-Wide All-Cause Unplanned Readmission measure (NQF #1789) has the advantages of aggregating readmissions for multiple conditions, excluding planned readmissions, and including risk adjustment. Some MAP members believed that comparisons using this measure should be limited to hospitals serving similar populations. In addition, some MAP members cautioned that use of the measure should be better understood through phased implementation before it is used for performance-based payment to avoid unfairly penalizing safety net hospitals serving vulnerable populations. While precautions should be undertaken regarding the potential use of NQF #1789 in accountability programs, MAP agreed it was important to include this global measure of hospital readmissions within the care coordination family.

Some commenters believed the Hospital-Wide All-Cause Unplanned Readmission measure (NQF #1789) should not be included in any public reporting or payment programs at this time. Others supported the inclusion of this measure in the family, noting the importance of carefully assessing its implementation. A few public commenters echoed the reservations of some MAP members regarding NQF #1789. These commenters raised concerns that this measure may not produce actionable data for providers because of the broad populations evaluated and suggested that individual population measures would have the advantage of being more likely to provide actionable information. They reinforced that hospitals should be compared

fairly within like strata and urged monitoring of unintended consequences with its implementation in public reporting or payment programs. Further, a few commenters believed that this measure should include risk-adjustment algorithms that consider socioeconomic status to prevent further disadvantaging safety net institutions because health literacy and access to care have been shown to be correlated with readmission rates. Commenters noted that healthcare providers should not be negatively impacted by readmissions that were unrelated to the original admission or were the result of factors outside of the provider's control.

Public commenters raised two additional issues regarding NQF #1789 that MAP had not previously considered. One commenter recommended that this measure should be expanded to include patients admitted for primary psychiatric disease prior to use in programs, an update currently being explored by the measure developer. Additionally, commenters raised issues regarding future development of measures of avoidable admissions and readmissions. Commenters cautioned that measure development to address additional settings, such as inpatient rehabilitation hospitals or units, should consider the unique patient population treated at those settings.

Some public commenters supported including additional avoidable admission and readmission measures in the family. One commenter suggested adding PQI-8 Congestive Heart Failure Admission Rate (NQF #0277) and PQI-12 UTI Admission Rate (NQF #0281) because these measures indicate whether primary care is available in a community and can indicate whether an index hospitalization took place. MAP agreed with the importance of these issues, but recommended the development of measures calculated at the ACO level instead. One commenter supported adding the Hospital-Level 30-Day All-Cause Risk-Standardized Readmission Rate (RSRR) Following Elective Primary Total Hip Arthroplasty (THA) and Total Knee Arthroplasty (TKA) measure (NQF #1551) because this measure reflects a high-cost, high-volume procedure for which outcomes could be improved. Further, commenters noted the need for measures of avoidable admissions and readmissions for the skilled nursing facility setting, and they encouraged the consideration of rates of potentially avoidable hospitalizations used in the CMS nursing home value-based purchasing demonstration.

TABLE 17. AVOIDABLE ADMISSIONS/READMISSIONS MEASURES AND GAPS FOR THE CARE COORDINATION FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0171 Endorsed	Acute Care Hospitalization (risk-adjusted)	Home Health	Facility	Measure should be expanded to include more post-acute and long-term care settings in the future.
#0173 Endorsed	Emergent Care (risk adjusted)	Home Health	Facility	Measure should be expanded to include more post-acute and long-term care settings in the future.
#0265 Endorsed	Hospital Transfer/Admission	Ambulatory Surgery Center (ASC)	Facility	

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0704 Endorsed	Proportion of Patients Hospitalized with AMI That Have a Potentially Avoidable Complication (during the Index Stay or in the 30-day Post-Discharge Period)	Hospital/Acute Care Facility	County or City, Facility, Health Plan, National, Regional, State	Measure should be modified to include an indicator of present on admission (POA) status.
#0705 Endorsed	Proportion of Patients Hospitalized with Stroke That Have a Potentially Avoidable Complication (during the Index Stay or in the 30-day Post-Discharge Period)	Hospital/Acute Care Facility	County or City, Facility, Health Plan, National, Regional, State	Measure should be modified to include an indicator of POA status.
#0708 Endorsed	Proportion of Patients Hospitalized with Pneumonia That Have a Potentially Avoidable Complication (during the Index Stay or in the 30-day Post-Discharge Period)	Hospital/Acute Care Facility	County or City, Facility, Health Plan, National, Regional, State	Measure should be modified to include an indicator of POA status.
#0709 Endorsed	Proportion of Patients with a Chronic Condition That Have a Potentially Avoidable Complication During a Calendar Year	Clinician Office/ Clinic, Other	County or City, Facility, Health Plan, National, Regional, State	Measure should be modified to include an indicator of POA status.
#1381 Endorsed	Asthma Emergency Department Visits	Hospital/Acute Care Facility	County or City, Health Plan	
#1768 Endorsed	Plan All-Cause Readmissions	Hospital/Acute Care Facility, Behavioral Health/Psychiatric: Inpatient	Health Plan	Measure does not indicate planned versus unplanned readmissions. Measure should be used with balancing measures of mortality, average of stay, emergency department (ED) visits, observation days, post-discharge follow-up, and patient experience.
#1789 Endorsed	Hospital-Wide All-Cause Unplanned Readmission Measure (HWR)	Hospital/Acute Care Facility	Facility	Measure should be used with balancing measures of mortality, length of stay, ED visits, observation days, post-discharge follow-up, and patient experience. Public commenters expressed concern about the actionability of the measure and the lack of risk adjustment for SES. One commenter supported expanding the measure to include psychiatric patients.

GAPS

- Shared accountability and attribution across the continuum
- Community role; patient's ability to connect to available resources
- All populations and causes of admissions/readmissions
- Modify Prevention Quality Indicators (PQI) measures to address accountability of accountable care organizations. Modify population to include all patients with the disease (if applicable).

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

System and Infrastructure Support

MAP reviewed measures that address the role of systems and infrastructure in promoting communication and effective care coordination, and selected the Medical Home System Survey measure (NQF #1909) for the family. This measure is provider-reported at the practice level and should be coupled with a patient-reported measure. One commenter noted that the Medical Home System Survey measure (NQF #1909) does not include children.

MAP stressed the need for further measure development in this area. Because existing measures reference the current infrastructure, future measure development should address new technologies and models of care to drive improvement. Moreover, continued development of interoperable EHRs is needed. MAP emphasized that it is not enough to measure EHR capacity; rather, measures must show both the successful sending and receiving of information across the numerous sites where patients receive care. MAP considered but did not include two measures of EHR use for the family—The Ability for Providers with HIT to Receive Laboratory Data Electronically Directly into their Qualified/Certified EHR System as Discrete Searchable Data Elements (NQF #0489) and Tracking of Clinical Results Between Visits (NQF #0491)—because they do not consider EHR effectiveness and address only one-sided communication. Public commenters suggested that these measures be reconsidered for inclusion in the family because they are meaningful structural measures.

Additionally, MAP noted the need for better measures of care coordination across the system where current measures are outdated, not inclusive of all patient populations, or address only the population level of analysis. For example, the Medical Home for Children and Adolescents measure (NQF #0724) is calculated at the population level and addresses only the pediatric population within medical homes; it does not include adults or ACOs. Complex, chronically ill patients should be included in the populations for medical home measures, because these patients stand to benefit the most from care coordination provided by a medical home. Finally, measures should move beyond the physician-led medical home to the clinician-led medical home, to recognize the role of other disciplines within this model.

TABLE 18. SYSTEM AND INFRASTRUCTURE SUPPORT MEASURE AND GAPS FOR THE CARE COORDINATION FAMILY OF MEASURES

MEASURE				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#1909 Endorsed	Medical Home System Survey	Clinician Office/Clinic	Clinician: Group/Practice, Clinician: Individual, Clinician: Team	Should be reported with a balancing patient-reported survey. One public commenter noted this measure does not include a child composite.
GAPS				
• Move beyond electronic health record (EHR) capacity to measures of interoperability of EHRs, enhanced communication • Measures of "systemness," including but not limited to accountable care organizations and patient-centered medical homes				

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Care Transitions

MAP defined a successful transition as one that was timely, prevented avoidable readmissions or ED visits, and was aligned with patient and caregiver preferences. Although many currently available measures focus on the hospital setting, MAP attempted to include measures that address transitions across the continuum when available to improve the quality of care transitions and communication across settings.

Care transition measures included in the family attempt to address two major questions related to successful transitions: (1) Did the patient get to the next needed site of care? and (2) Was the necessary information about the patient available to the next site of care in a timely manner? Although few available measures address the first question, a number of measures were included in the family as a starting point. Stressing the importance of continuing care in an outpatient setting, MAP included three measures addressing transitions to the next site of care: two measures assessing follow-up visits (NQF #0576 and #0403) and one assessing whether the patient began home healthcare in a timely manner (NQF #0526).

MAP took a broader view and included measures that address timeliness from both inter- and intra-facility perspectives and focused on the hospital setting because of measures currently available. One measure, Median Time to Transfer to Another Facility for Acute Coronary Intervention (NQF #0290), was included to assess timely transitions from one facility to the next, stressing the high-impact and time-sensitive nature of treatment for acute myocardial infarction (AMI). MAP also included five additional measures addressing AMI: one measure involving time to electrocardiogram (ECG) (NQF #0289) and four involving time to treatment with percutaneous coronary intervention (PCI) or fibrinolysis (NQF #0164, #0287, #0288, #0163). One measure involving the timely availability of computed tomography (CT) results for stroke patients (NQF #0661) was also added to the family.

MAP considered three additional intra-facility measures addressing ED throughput: Median Time from ED Arrival to ED Departure for Admitted ED Patients (NQF #0495), Median Time from ED Arrival to ED Departure for Discharged ED Patients (NQF #0496), and Admit Decision Time to ED Departure Time for Admitted Patients (NQF #0497). MAP recognized that ED crowding is a significant concern, especially for patients and their families, and can lead to increased suffering and poor patient outcomes. However, MAP raised concerns about subjectivity of the timing component required to calculate these measures. Moreover, ED timeliness can vary greatly by situation, type of patient, and reason for visit. Ultimately, MAP concluded that measures that primarily monitor internal inefficiency are not the highest priority for the care coordination measure family, although they may be well-suited to the purposes of particular programs. MAP recommended moving beyond measures of timeliness to measures assessing other aspects of quality of care in the ED to ensure that patients receive the right care in an efficient manner.

One public commenter disagreed with MAP's conclusion about the ED throughput measures and supported including NQF #495, #496, and #497 in the care coordination family of measures. The commenter stressed that nearly half of all hospital admissions transfer from the ED, and therefore the timeliness of such transitions should be a priority. The commenter further noted that ED boarding and crowding prevent patients from getting to the next needed site of care efficiently and can be associated with higher morbidity and mortality, delayed pain control, and inferior healthcare. The commenter also disagreed with MAP's concerns about the subjectivity of these measures.

Unsuccessful care transitions can result in avoidable readmissions and ED visits, endangering patients and driving up the cost of care. Although these issues can be failures of the system, MAP included the 30-Day Post-Hospital Discharge Care Transition Composite Measures for AMI,

heart failure, and pneumonia measures (NQF #0698, #0699, #0707) in the care coordination family. These complex, risk-adjusted composites evaluate readmissions, ED visits, and evaluation and management (E&M) coded follow-up visits. A caveat to these measures is that the E&M visit requirement does not allow for innovative care transition programs such as home visits by nurses. Because it is important for a patient to receive follow-up care in a timely fashion, the measure could be modified to a seven-day window for E&M visits. Some MAP members urged better understanding of how these measures perform before they are considered for performance-based payment programs to ensure that hospitals are not unfairly penalized for events outside of their control. Additionally, the PICU Unplanned Readmission Rate measure (NQF #0335) was included to address readmission to the intensive care unit (ICU) from a lower level of care or following discharge.

Recognizing that person and family/caregiver engagement and communication is key to successful care transitions, MAP included the 3-Item Care Transition Measure (CTM-3) (NQF #0228) in the family. This patient-reported measure assesses inclusion of patient preferences in the care plan, understanding of self-care, and medication management. Although Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) currently includes the items from CTM-3, this measure was also included in the family separately because it can be applied to facilities other than hospitals. MAP also discussed modification of the CTM-3 survey to allow for evaluation before discharge, which could proactively address potential issues with care transitions and self-management. Public commenters noted the limitation of the CTM-3 measure in assessing care transitions for persons who are frail, have cognitive or memory impairment, or have severe and persistent mental illness because these individuals may have difficulty self-reporting.

MAP identified a number of measure gaps for the care transitions subtopic. Currently, many measures use time as the primary outcome to determine if a transition was successful. MAP recommended that transition measures look beyond just timeliness to assess the quality of the transition, including the quality of communication with the patient and caregiver. There is also a need for measures of patient transition to next provider/site of care across all settings including transitions that are not hospital-related, such as from primary care to specialty care, clinician to community pharmacist, and nursing home to home healthcare. MAP also recognized the need for measures addressing referrals and access to community resources and services.

Public commenters supported the inclusion of the Children with Special Health Care Needs (CSHCN) Who Receive Services Needed for Transition to Adult Health Care measure (NQF #1340) because this population is frequently overlooked and this is a meaningful measure for many families. MAP agreed with the importance of this measure but noted that it should be modified for calculation at a system level to allow for more actionable results before being included in the family.

TABLE 19. CARE TRANSITIONS MEASURES AND GAPS FOR THE CARE COORDINATION FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0163 Endorsed	Primary PCI Received within 90 Minutes of Hospital Arrival	Hospital/Acute Care Facility	Facility, National, Regional	
#0164 Endorsed	AMI-7a—Fibrinolytic Therapy Received within 30 Minutes of Hospital Arrival	Hospital/Acute Care Facility	Facility, National, Regional	
#0228 Endorsed	3-Item Care Transition Measure (CTM-3)	Hospital/Acute Care Facility	Facility	Measure should be tested for administration prior to discharge.
#0287 Endorsed	Median to Fibrinolysis	Hospital/Acute Care Facility	Facility	
#0288 Endorsed	OP-2: AMI Emergency Department Acute Myocardial Infarction (AMI) Patients with ST-segment Elevation or LBBB on the ECG Closest to Arrival Time Receiving Fibrinolytic Therapy During the Stay and Having a Time from ED Arrival to Fibrinolysis of 30 minutes or Less	Hospital/Acute Care Facility, Urgent Care	Facility, National	
#0289 Endorsed	Median Time to ECG	Hospital/Acute Care Facility, Urgent Care	Facility, National	
#0290 Endorsed	Median Time to Transfer to Another Facility for Acute Coronary Intervention	Hospital/Acute Care Facility, Urgent Care	Facility, National	
#0335 Endorsed	PICU Unplanned Readmission Rate	Hospital/Acute Care Facility	Facility	
#0403 Endorsed	HIV/AIDS: Medical Visit	Urgent Care, Clinician Office/Clinic	Integrated Delivery System	
#0526 Endorsed	Timely Initiation of Care	Home Health	Facility	
#0576 Endorsed	Follow-Up After Hospitalization for Mental Illness	Clinician Office/ Clinic, Behavioral Health/Psychiatric: Inpatient, Behavioral Health/Psychiatric: Outpatient	Clinician: Group/ Practice, Health Plan, Clinician: Individual, Integrated Delivery System, National, Regional, State	
#0661 Endorsed	OP-23: ED—Head CT Scan Results for Acute Ischemic Stroke or Hemorrhagic Stroke Who Received Head CT Scan Interpretation within 45 minutes of Arrival	Clinician Office/ Clinic, Hospital/Acute Care Facility	Facility	
#0698 Endorsed	30-Day Post-Hospital AMI Discharge Care Transition Composite Measure	Hospital/Acute Care Facility	National	Measure should be modified to have a narrow window for follow-up evaluation and management visit.
#0699 Endorsed	30-Day Post-Hospital HF Discharge Care Transition Composite Measure	Hospital/Acute Care Facility	National	Measure could be modified to have a narrow window for follow-up evaluation and management visit.

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0707 Endorsed	30-Day Post Hospital Pneumonia Discharge Transition Composite Measure	Hospital/Acute Care Facility	National	Measure could be modified to have a narrow window for follow-up evaluation and management visit.

GAPS
• Transition measures that look beyond timeliness • Measures of patient transition to next provider/site of care across all settings – Includes nonhospital transitions (examples: primary care to specialty care, clinician to community pharmacist, nursing home to home health) as well as transitions to community services • Measures of intra-facility transitions

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Communication

Communication involves all healthcare team members working within the same shared care plan, readily available consultation notes and progress reports, engagement of the person and family, shared decision-making, use of various communication methodologies, and balancing privacy with access to information.[12] Recognizing the central role of the patient as a member of the care team and the importance of person and family engagement, MAP evaluated measures that consider provider-to-patient communication, as well as provider-to-provider communication, for inclusion in the measure family.

To address patient communication, MAP included three measures in the care coordination family: Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care) (NQF #0647), Timely Transmission of Transition Record (Inpatient Discharges to Home/Self Care or Any Other Site of Care) (NQF #0648), and Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges to Ambulatory Care [Home/Self Care]) (NQF #0649). Because patient communication is vital to successful transitions, these measures help ensure that patients receive necessary information when discharged, facilitating self-care and coordination with subsequent providers. MAP recommends that these measures be expanded to address patient understanding of the information received and capability for self-management of conditions and treatments, particularly medications.

MAP included five measures addressing provider communication when transferring patients from the ED to another acute care facility: Administrative Communication (NQF #0291), Patient Information (NQF #0294), Physician Information (NQF #0295), Nursing Information (NQF #0296), and Procedures and Tests (NQF #0297). MAP suggests that these measures be combined into one composite measure to demonstrate the rapid transfer of information. One public commenter noted that these measures may be redundant with the communication requirements of the Emergency Medical Treatment and Labor Act (EMTALA), adding to the reporting burden of providers and not serving the best interest of a parsimonious family of measures.

Communication with the next site of care is a crucial element of care coordination; however, it is often difficult to know if the necessary patient information was available in a timely

manner. There is a need to move beyond current checkbox measures of communication to measure the sending and receiving of information using common elements providing the "right" information to support patient care. Measures are also needed to address communication outside the inpatient setting. Additionally, communication measures should address simultaneous information sharing, because patients frequently see multiple providers at the same time. Health Information Exchanges and EHRs are intended to improve communication of relevant patient information from one setting to the next, and MAP recommends the development of measures that assess whether these technologies and care models are facilitating the successful bi-directional transfer of information.

Measures of person-centered communication are needed to assess whether the right information was provided at the right time and aligned with patient preferences and unique needs. These measures should include all patients, including those with multiple chronic conditions, frailty, disability, or other medical complexities. These measures should consider health literacy and a person's ability to manage their care and whether the information was understood and not just received. Additionally, these measures should be culturally sensitive to prevent communication barriers caused by ethnicity, language, or religion. MAP recommends development of measures that assess the role of personal health records and how they can facilitate communication through interoperable records that can be exchanged across sites of care.

Public commenters noted that the selected measures do not address long-term care or home and community-based settings. One commenter noted the vital role home and community-based providers play in effective care transitions and care plan execution because patients with severe conditions and their family members may not be able to accurately and appropriately communicate information to paid caregivers. The commenter recommended the development of measures that address the flow of information between providers in acute and post-acute settings and providers in home and community-based settings.

TABLE 20. COMMUNICATION MEASURES AND GAPS FOR THE CARE COORDINATION FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0291 Endorsed	Administrative Communication	Hospital/Acute Care Facility	Facility	Measure should be combined into a composite with #0294, #0295, #0296, and #0297. One commenter noted this measure may be redundant with communication requirements of the Emergency Medical Treatment and Labor Act (EMTALA), adding to the provider reporting burden and not serving the best interest of parsimony.
#0294 Endorsed	Patient Information	Hospital/Acute Care Facility	Facility	Measure should be combined into a composite with #0291, #0295, #0296, and #0297. One commenter noted this measure may be redundant with communication requirements of the Emergency Medical Treatment and Labor Act (EMTALA), adding to the provider reporting burden and not serving the best interest of parsimony.
#0295 Endorsed	Physician Information	Hospital/Acute Care Facility	Facility	Measure should be combined into a composite with #0291, #0294, #0296, and #0297. One commenter noted this measure may be redundant with communication requirements of the Emergency Medical Treatment and Labor Act (EMTALA), adding to the provider reporting burden and not serving the best interest of parsimony.
#0296 Endorsed	Nursing Information	Hospital/Acute Care Facility	Facility	Measure should be combined into a composite with #0291, #0294, #0295, and #0297. One commenter noted this measure may be redundant with communication requirements of the Emergency Medical Treatment and Labor Act (EMTALA), adding to the provider reporting burden and not serving the best interest of parsimony.
#0297 Endorsed	Procedures and Tests	Hospital/Acute Care Facility	Facility	Measure should be combined into a composite with #0291, #0294, #0295, and #0296. One commenter noted this measure may be redundant with communication requirements of the Emergency Medical Treatment and Labor Act (EMTALA), adding to the provider reporting burden and not serving the best interest of parsimony.
#0310 Endorsed	LBP: Shared Decision Making	Clinician Office/Clinic	Clinician: Group/ Practice, Clinician: Individual	
#0647 Endorsed	Transition Record with Specified Elements Received by Discharged Patients (Inpatient Discharges to Home/Self Care or Any Other Site of Care) (Inpatient Discharges to Home/ Self Care or Any Other Site of Care)	Ambulatory Surgery Center (ASC), Hospital/Acute Care Facility, Nursing Home/Skilled Nursing Facility, Inpatient Rehabilitation Facility	Facility, Integrated Delivery System	

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0648 Endorsed	Timely Transmission of Transition Record (Inpatient Discharges to Home/Self Care or Any Other Site of Care)	Ambulatory Surgery Center (ASC), Hospital/Acute Care Facility, Nursing Home/Skilled Nursing Facility, Inpatient Rehabilitation Facility	Facility, Integrated Delivery System	
#0649 Endorsed	Transition Record with Specified Elements Received by Discharged Patients (Emergency Department Discharges to Ambulatory Care [Home/Self Care])	Urgent Care, Hospital/ Acute Care Facility	Facility, Integrated Delivery System	

GAPS

- Communication measures should address both simultaneous and subsequent information sharing across all settings
- Move beyond current checkbox measures of communication to address both the sending and receiving of adequate information
- Measures of person-centered communication
  - Right information was given at the right time and aligned with patient preferences
    - » Cultural sensitivity—ethnicity, language, religion
    - » Multiple chronic conditions, frailty, disability, medical complexity
  - Address patient understanding of information, not just receiving information
  - Role for personal health records
- Opportunity to leverage health information technology (HIT); role of HIT/health information exchanges (HIE) in communication process
  - Need to address overuse, misuse, inefficiencies created by poor communication

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Care Planning

The NQF-Endorsed Definition and Framework for Measuring Care Coordination calls for patients to have a proactive plan of care and follow-up—an established and current care plan that anticipates routine needs and actively tracks up-to-date progress toward patient goals. The care plan should be jointly created and managed by the patient/caregiver and provider and should assess the patient's current and longstanding needs with goals that reflect those needs.[13] The care plan should address elements such as pain and symptom management, functional status, and psychosocial and environmental needs. Although there is still a greater need for measures—not in the "check the box" category—that assess the development of a care plan mutually agreed to by the patient and provider, MAP included a number of care planning measures in the family, stressing the importance of a plan that includes patient preferences at the end of life, is developed through shared decision-making, and facilitates continuing care across sites.

The Definition and Framework for Measuring Care Coordination recognized that patients at the end of life are particularly vulnerable to fragmented care and poor care planning.[14] To help address this issue, MAP included four NQF-endorsed hospice

measures (NQF #0211, #0213, #0215, #0216) to assess the outcome of successful care planning for patients at the end of life. MAP recommended that these measures be expanded beyond cancer care to include all chronically ill patients. These measures could also be developed into a composite. One public commenter expressed support for MAP's focus on care planning and coordination at the end of life but noted that "end of life care" may not be a useful construct for discussing patient preferences for care of serious illness. The commenter further stated that prognostication is imprecise, and any descriptor, measure, or initiative that applies only to patients who have been identified as near the "end of life" would fail to capture the majority of people who die of serious illness.

Recognizing that all patients need, but frequently do not have, an advance care plan, MAP included two measures addressing creation of advance care plans. The first, Advance Care Plan (NQF #0326), measures the creation of a plan in the outpatient setting; the second, Patients Admitted to ICU Who Have Care Preferences Documented (NQF #1626), revisits advance care planning within 48 hours of admission to the ICU. MAP recommends the expansion of measures assessing advance care planning beyond elderly or critically/terminally ill patients to ensure that all patients have an advance care plan.

MAP emphasized the need to move beyond patient adherence to a care plan to active involvement in the planning process. Person and family engagement is crucial to ensuring that the care plan is aligned with patient goals and that the patient and caregiver are able to understand and manage necessary self-care. Recognizing the importance of a care plan that is mutually agreed to by the patient and provider, MAP stressed the importance of shared decision-making and included in the family the one available measure addressing this area: Low Back Pain: Shared Decision-Making (NQF #0310). MAP noted shared decision-making, including and beyond care planning, as a significant gap area.

Emphasizing the importance of discharge planning, two measures addressing continuing care plans were included in the family: HBIPS-6 Post Discharge Continuing Care Plan Created (NQF #0557) and HBIPS-7 Post Discharge Continuing Care Plan Transmitted to Next Level of Care Provider upon Discharge (NQF #0558). MAP noted that these measures could include a timeframe for the creation and transmission of the care plan to ensure that information is sent in a timely manner. MAP also recommended further development of measures addressing a shared care plan for all patients, including assessing continuity within the plan of care.

Public commenters supported the emphasis that MAP placed on care plans that address psychosocial needs and functional status and the importance of community supports for providing the right level of care. One public commenter also suggested the use of a "principal care manager" who works with and on behalf of a person throughout any given episode of care.

TABLE 21. CARE PLANNING MEASURES AND GAPS FOR THE CARE COORDINATION FAMILY OF MEASURES

MEASURES				
NQF # and Status	Measure	Care Setting	Level of Analysis	MAP Findings*
#0211 Endorsed	Proportion with More Than One Emergency Room Visit in the Last Days of Life	Hospital/Acute Care Facility	County or City, Facility, Group/Practice, Health Plan, Integrated Delivery System, National, Regional, State	Measure should be expanded beyond cancer patients to include all chronically ill patients. Hospice measures could be paired or made into a composite.
#0213 Endorsed	Proportion Admitted to the ICU in the Last 30 Days of Life	Hospital/Acute Care Facility	County or City, Facility, Group/Practice, Health Plan, Integrated Delivery System, National, Regional, State	Measure should be expanded beyond cancer patients to include all chronically ill patients. Hospice measures could be paired or made into a composite.
#0215 Endorsed	Proportion Not Admitted to Hospice	Hospice	County or City, Facility, Group/Practice, Health Plan, Integrated Delivery System, National, Regional, State	Measure should be expanded beyond cancer patients to include all chronically ill patients. Hospice measures could be paired or made into a composite.
#0216 Endorsed	Proportion Admitted to Hospice for Less than 3 Days	Hospice	County or City, Facility, Group/Practice, Health Plan, Integrated Delivery System, National, Regional, State	Measure should be expanded beyond cancer patients to include all chronically ill patients. Hospice measures could be paired or made into a composite.
#0326 Endorsed	Advance Care Plan	Ambulatory Surgery Center (ASC), Urgent Care, Clinician Office/Clinic, Home Health, Hospice, Hospital/Acute Care Facility, Nursing Home/Skilled Nursing Facility, Inpatient Rehabilitation Facility	Clinician: Individual	Measure should be expanded to include patients under 65 years old.
#0557 Endorsed	HBIPS-6 Post Discharge Continuing Care Plan Created	Hospital/Acute Care Facility, Behavioral Health/Psychiatric: Inpatient	Facility	Measure should be expanded to address both the sending and receiving of information. Measure should be modified to include a time element to information transmission and could be composited with #0558.

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0558 Endorsed	HBIPS-7 Post Discharge Continuing Care Plan Transmitted to Next Level of Care Provider Upon Discharge	Hospital/Acute Care Facility, Behavioral Health/Psychiatric: Inpatient	Facility	Measure should be expanded to address both the sending and receiving of information. Measure should be modified to include a time element to information transmission and could be composited with #0557.
#1626 Endorsed	Patients Admitted to ICU who Have Care Preferences Documented	Hospital/Acute Care Facility, Behavioral Health/Psychiatric: Inpatient	Facility, Health Plan, Integrated Delivery System	Measure should be expanded beyond "vulnerable adults" to include all intensive care unit patients.
GAPS				
• Shared decision-making and care planning; interactive care plan – All people should have care plan, created early in the care process – Plan agreed to by the patient and provider and given to patient, including advanced care plan – Plan shared among all providers seeing the patient (integrated); multidisciplinary – Identified primary provider responsible for the care plan				

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Patient Experience with Care Coordination

Existing patient experience surveys were included in the care coordination family of measures as a way to gather patient-reported information relevant to care coordination. Patient surveys capture patient perceptions of the effectiveness of care coordination efforts and can indicate lack of patients' involvement in their care, crucial to promoting self-management. MAP included the suite of Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys to broadly measure patients' perspectives across the various care settings. Additionally, the Young Adult Health Care Survey (YAHCS) measure (NQF #0010), the Inpatient Consumer Survey (ICS) measure (NQF #0726), the Family Evaluation of Hospice Care (FEHC) measure (NQF #0208), and the Consumer Assessments and Reports of End of Life (CARE) measure (NQF #1632) were included to address the unique needs of the adolescent, inpatient behavioral health, and hospice populations. However, MAP identified several limitations to existing instruments to promote care coordination. Current survey measures reinforce silos in the system by failing to cross care settings, recognize the shared accountability of multidisciplinary teams, or include the provider perspective.

MAP also discussed a number of data issues with the existing surveys. Although it is important to gather patient-reported data, collecting and analyzing these data can be challenging for both the patient and provider. To maintain reliability and validity, often the entire instrument must be completed and scored. Additionally, the survey scores and results must be reported in a meaningful way to promote improvement in care coordination. Reporting only total scores provides insufficient detail to support quality improvement in this area. The ability to report scores on individual items or composites related to care coordination is necessary to provide the

meaningful granularity, but not all items have been validated for individual reporting. The development of electronic versions of existing instruments may help facilitate the collection and use of patient-reported data.

MAP recommends the development of a comprehensive care coordination survey that looks across the episode of care and settings to address transitions and communication. Common questions would allow better insights into coordination and patient experiences across the continuum. The care coordination survey should consider patients of all ages and their caregivers as well as the accountability of the multidisciplinary team.

Public commenters supported using patient experience of care measures, provided that quality of care is not measured on patients' lack of response or providers are not penalized for poor rates of reporting due to lack of response. Commenters noted that the capacity for certain patient populations to self-report must be considered, and adjustment for response bias may be necessary.

TABLE 22. PATIENT SURVEY MEASURES AND GAPS FOR THE CARE COORDINATION FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0005 Endorsed	CAHPS Clinician/Group Surveys—(Adult Primary Care, Pediatric Care, and Specialist Care Surveys)	Clinician Office/Clinic	Clinician: Individual	
#0006 Endorsed	CAHPS Health Plan Survey v 4.0—Adult Questionnaire	Clinician Office/Clinic	Health Plan	
#0007 Endorsed	NCQA Supplemental Items for CAHPS® 4.0 Adult Questionnaire	Clinician Office/Clinic	Clinician: Group/Practice, Health Plan, Clinician: Individual, Integrated Delivery System, National, Regional, State	
#0008 Endorsed	Experience of Care and Health Outcomes (ECHO) Survey (behavioral health, managed care versions)	Clinician Office/Clinic	Health Plan	
#0009 Endorsed	CAHPS Health Plan Survey v 3.0 Children with Chronic Conditions Supplement	Clinician Office/Clinic	Health Plan	Survey should be expanded to include the adult population.
#0010 Endorsed	Young Adult Health Care Survey (YAHCS)	Clinician Office/Clinic	County or City, Health Plan, National, Regional, State	Survey should be tested down to the clinician level.
#0166 Endorsed	HCAHPS	Hospital/Acute Care Facility	Facility	
#0208 Endorsed	Family Evaluation of Hospice Care	Hospice	Facility, National	
#0258 Endorsed	CAHPS In-Center Hemodialysis Survey	Dialysis Facility	Facility	
#0517 Endorsed	CAHPS® Home Health Care Survey	Home Health	Facility	

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0691 Endorsed	Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Discharged Resident Instrument	Nursing Home/Skilled Nursing Facility	Facility	
#0692 Endorsed	Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Long-Stay Resident Instrument	Nursing Home/Skilled Nursing Facility	Facility	
#0693 Endorsed	Consumer Assessment of Health Providers and Systems (CAHPS®) Nursing Home Survey: Family Member Instrument	Nursing Home/Skilled Nursing Facility	Facility	
#0725 Endorsed	Validated Family-Centered Survey Questionnaire for Parents' and Patients' Experiences during Inpatient Pediatric Hospital Stay	Hospital/Acute Care Facility	Facility	
#0726 Endorsed	Inpatient Consumer Survey (ICS) Consumer Evaluation of Inpatient Behavioral Healthcare Services			
#1632 Endorsed	CARE—Consumer Assessments and Reports of End of Life	Hospice, Nursing Home/Skilled Nursing Facility	Facility, National, Regional	
#1741 Endorsed	Patient Experience with Surgical Care Based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS)® Surgical Care Survey	Ambulatory Surgery Center (ASC), Clinician Office/Clinic, Hospital/ Acute Care Facility	Clinician: Group/Practice, Clinician: Individual	

GAPS

- Need to address patients who cannot self-report/issues with surrogate reporting
- Existing surveys
  - Need surveys in electronic format
  - Test national-level surveys for reporting out at the organization and/or clinician level
  - Bring Medical Home Clinician and Group Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS) forward for NQF endorsement
- Comprehensive care coordination survey that looks across episode and settings, particularly with the development of medical homes and accountable care organizations
  - Include all ages
  - Recognize accountability of the multidisciplinary team
- Survey/composite measure of provider perspective of care coordination
  - Timely and effective communication among providers

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

PREVENTION AND TREATMENT OF THE LEADING CAUSES OF MORTALITY: CARDIOVASCULAR AND DIABETES FAMILIES OF MEASURES

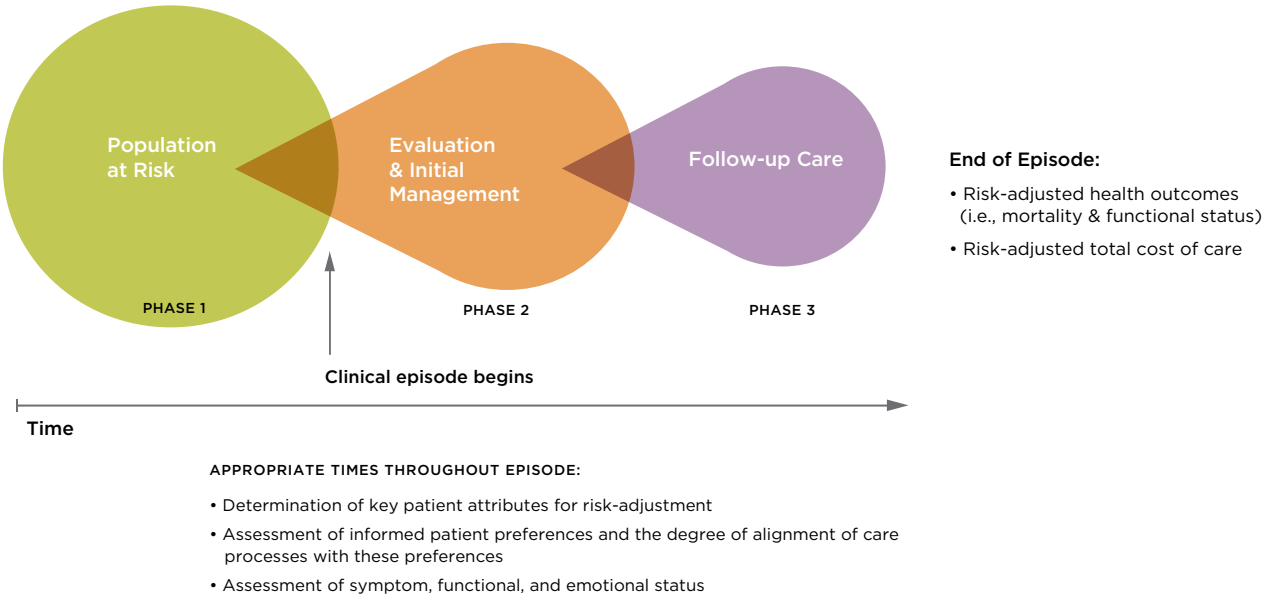
To promote the most effective prevention and treatment of the leading causes of mortality, the NQS established three goals: community interventions that result in improvement of social, economic, and environmental factors; interventions that result in adoption of the most important healthy lifestyle behaviors across the lifespan; and receipt of effective clinical preventive services across the lifespan in clinical and community settings. The initial focus area in the NQS for achievement of the prevention and treatment goals is cardiovascular health. In alignment with the NQS, MAP's identification of a prevention and treatment family of measures focused on cardiovascular conditions; however, MAP expanded the scope of the family of measures to address an additional high-impact condition, diabetes, because an opportunity exists to coordinate prevention efforts for both conditions. Additionally, disparities in care for cardiovascular conditions and diabetes exist, further highlighting the need to address these conditions first under the prevention and treatment family of measures.

Themes from the Identification of the Cardiovascular and Diabetes Families of Measures

While identifying the prevention and treatment family of measures, MAP relied on several principles: person-centered approach, improving outcomes, and identification of the fewest measures needed to address the high-leverage improvement opportunities.

A **person-centered approach to measurement** considers stages of health and healthcare across the lifecycle (MAP Measure Selection Criterion #6: pertaining to measurement across the person-centered episode of care). MAP's work to identify these families of measures built on the Patient-Focused Episodes of Care Model,[15] the **Multiple Chronic Conditions Framework for Performance Measurement**,[16] and findings from previous MAP reports. The patient-focused episode of care (see Figure 1) consists of three phases for evaluating the efficiency of care over time: the population at risk, evaluation and initial management, and follow-up care. Consistent with the person-centered approach to measurement, MAP considered the gaps in performance at each phase of the episode of care. The high-leverage opportunities for measurement of cardiovascular care and diabetes represent opportunities to measure identified performance gaps.

FIGURE 2. PATIENT-FOCUSED EPISODE OF CARE



Recognizing that many individuals with cardiovascular conditions and diabetes have other chronic conditions, MAP considered how the high-leverage opportunities for measurement address people with multiple chronic conditions. The NQF-endorsed Multiple Chronic Conditions Measurement Framework identifies the highest-leverage areas for measurement to be relevant, disease-specific, clinical outcome measures, along with measures that cut across conditions (e.g., quality of life, shared decision-making, function, care transitions).

For the cardiovascular conditions and diabetes families of measures, MAP identified measures and measure gaps that represent the most salient condition-specific measures, because other families will address cross-cutting measures (e.g., patient and family engagement, care coordination). In recognition of the important link between depression and chronic disease, MAP expects to develop a mental and behavioral health family of measures in a subsequent phase of work. Public commenters supported the focus on mental and behavioral health in future work, and one commenter supported the addition of specific measures related to cardiovascular health and diabetes for people with schizophrenia and bipolar disorder because mental health conditions can impact management of chronic conditions. Furthermore, the MAP Coordination Strategy for Post-Acute and Long-Term Care Performance Measurement[17] emphasized that the complex needs of patients in post-acute and long-term care settings are best addressed by cross-cutting measures, rather than by measures that focus on a single condition. Therefore, MAP did not select measures for post-acute and long-term care settings for these disease-specific families of measures. Conversely, one public commenter emphasized the need for cardiovascular- and diabetes-specific measures in post-acute and long-term care settings, noting the prevalence of chronic conditions in these settings.

MAP seeks to **improve outcomes** in the highest-leverage areas and therefore focused on outcome and process measures most closely linked with improved outcomes. For example, outcome measures assessing control (e.g., blood pressure control) were preferred over process measures assessing screening and testing. Similarly, process

measures assessing time to procedures (e.g., receiving percutaneous coronary intervention (PCI) upon hospital arrival within 90 minutes or less) were preferred over process measures that assess steps in care delivery (e.g., troponin results for acute myocardial infarction patients (AMI)). Generally, this approach emphasized assessing overall care management and systems-level improvement, rather than discrete care processes. However, MAP recognized that structure and process measures may be the most appropriate measures for a program's specific purpose, particularly in newer areas of measurement.

A family of measures seeks to align measures across settings and levels of analysis. MAP sought to **identify the fewest measures necessary to address the high-leverage improvement opportunities** (MAP Measure Selection Criteria #3 and 8 addressing high-impact conditions and parsimony). To create a parsimonious set of measures, MAP focused on the highest-impact opportunities at each phase of the episode of care that will improve quality in cardiovascular and diabetes care. MAP considered the inclusiveness—capturing a broad range of individuals with regard to age, gender, socioeconomic status (SES), and ethnicity/race—of a measure when selecting measures for the family. Accordingly, MAP sought to include measures with broad denominator populations (e.g., blood pressure control for all individuals) for accountability purposes that could then be stratified by more discrete populations (e.g., blood pressure control for individuals with cardiovascular conditions) for quality improvement.

Within the highest-leverage opportunities, MAP considered the **applicable settings and levels of analysis**. MAP noted that assessment at each level of the system—individual clinician, clinician groups, facilities, systems, and populations—provides a comprehensive picture of quality and helps identify targeted interventions at each level. Thus, MAP selected measures that cross levels of analysis and settings where those measures were available. Recognizing that few measures will address all relevant settings and levels of analysis, MAP also selected measures that address one particular setting or level of analysis, focusing on measures that assess similar aspects of care. Additionally, MAP recognized that all areas of measurement may not be attributable to all levels of the system. For example, mortality measures, which imply broad accountability, are best attributed to a facility or system, rather than to a clinician. Public commenters supported MAP's focus on applicable settings and levels of analysis and would also like MAP to consider attribution (e.g., how a measure attributes patients or care to individual clinicians), because the attribution methodology can affect how well a measure fits the purpose of a specific program.

Primary Prevention of Cardiovascular Conditions and Diabetes

Primary prevention addresses the first phase of the patient-focused episode of care, that is, the population at risk. At this phase, there is an opportunity to identify risk factors and intervene prior to disease presentation. Strong evidence supports that addressing risk factors reduces the incidence of cardiovascular conditions and diabetes.

The Million Hearts initiative encourages targeted focus on the "ABCS"—aspirin for people at risk, blood pressure control, cholesterol management, and smoking cessation. Additional lifestyle risk factors, such as obesity and physical activity, also contribute to the incidence of cardiovascular conditions and diabetes.[18] Accordingly, MAP identified the highest-leverage opportunities for assessing primary prevention of cardiovascular conditions as blood pressure control, lipid control, smoking prevention/cessation, diet/nutrition, activity/exercise, and weight/obesity.

Each of the high-leverage opportunities substantially influences cardiovascular and/or

diabetes risk, representing performance gaps that if closed will improve the health status of the population. For perspective, approximately one-third of adults in the United States has high blood pressure,[19] and one in six has high cholesterol levels.[20] In both cases, many individuals are not even aware they have these risk factors.[21] About 19% of American adults smoke cigarettes, and smoking remains the leading cause of preventable death in the United States.[22] In addition, diet, activity, and obesity are closely linked. More than one-third of American adults are now obese, placing them at higher risk of diabetes, heart disease, stroke, and other conditions. [23]

Although the purpose of primary prevention is to assess the care provided to the population at risk (those individuals who do not yet have the disease), MAP sought to select measures that include the entire population, regardless of the presence or absence of a condition. This approach helped achieve a parsimonious set of measures. Measures could be stratified by condition or other risk factors to support quality improvement activities. However, MAP recognized that lipid control and blood pressure control are critical aspects of secondary prevention for cardiovascular conditions and diabetes, and therefore it included some condition-specific measures in the family of measures (NQF #0064, Lipid Control is noted in Table 9, Diabetes Family of Measures).

MAP identified measures that address the high-leverage opportunities of smoking cessation (NQF #0028, #1406, #1651, #1654) and blood pressure control (NQF #0018). For the lifestyle management opportunity area, MAP identified measures that address weight and obesity (NQF #0421, #0024), with physical activity/exercise and diet/nutrition identified as measure gaps. MAP acknowledged that lifestyle management is influenced by social determinates of health (e.g., SES, availability of community-based resources, resources to meet daily needs); accordingly, lifestyle measures of attainment should be reserved for the community level, while clinicians and facilities should be accountable for assessment and counseling. One public commenter cautioned against this approach, noting that assessment measures do not indicate whether outcomes are achieved. MAP also identified measure gaps for lipid control and cardiometabolic risk.

TABLE 23. PRIMARY PREVENTION OF CARDIOVASCULAR CONDITIONS AND DIABETES MEASURES SELECTED FOR FAMILY OF MEASURES

Measures				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings**
Smoking Cessation/Tobacco Use				
#0028 Endorsed	Measure pair: a. Tobacco Use Assessment, b. Tobacco Cessation Intervention	Clinician Office/Clinic	Clinician: Individual	
#1406 Endorsed	Risky Behavior Assessment or Counseling by Age 13 Years	Clinician Office/Clinic, Outpatient	Clinician: Group/Practice, Clinician: Individual, National, Regional, Clinician: Team	
#1651 Recommended	TAM-1 Tobacco Use Screening	Behavioral Health/Psychiatric: Inpatient, Hospital/Acute Care Facility	Facility, National	
#1654 Deferred	TAM-2 Tobacco Use Treatment Provided or Offered	Behavioral Health/Psychiatric: Inpatient, Hospital/Acute Care Facility	Facility, National	

Measures				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings**
Lifestyle Management				
#0421 Endorsed	Adult Weight Screening and Follow-Up	All settings	Can be measured at all levels	
#0024 Endorsed	Body Mass Index (BMI) 2 through 18 Years of Age	Clinician Office/Clinic	Clinician: Individual	
Blood Pressure				
#0018 Endorsed	Controlling High Blood Pressure	All settings, Ambulatory Surgery Center (ASC), Clinician Office/Clinic, Hospital/Acute Care Facility, Urgent Care, Clinician Office/Clinic	Clinician: Group/ Practice, Clinician: Individual	Public commenters supported inclusion.

GAPS		
Gap	**Gap Description**	**Public Comment**
Lipid Control	• All levels of analysis	Public commenters supported the need for lipid control measures broadly, and they encouraged timely development of a control measure applicable across the population.
Smoking Cessation	• Outcomes of smoking cessation interventions	
Lifestyle Management	• Physical activity/exercise, diet/nutrition across all levels of analysis and settings	Public commenters suggested that MAP consider Health Partner's Optimal Lifestyle measure to fill the gap. MAP recommends that the measure be brought forward for NQF endorsement.
Cardiometabolic Risk	• Across all levels of analysis and settings	

Cost of Care

To cover each of the NQS aims, including affordability, MAP addressed cost of care within each family of measures. Additionally, MAP plans to identify a cost of care family of measures. When considering cost of care measures for prevention and treatment of diabetes and cardiovascular conditions, MAP recognized that cost of care measurement is relatively nascent and multiple methodological and implementation issues persist, resulting in multiple measure gaps. At the same time, there are many cost of care measurement needs—both direct and indirect costs, cost to different entities (e.g., cost to patients, cost to payers and purchasers), and cost per episodes versus total cost—all of which provide useful information from different perspectives. Finally, only a handful of cost of care measures are in the portfolio of NQF-endorsed measures as this is a relatively new area of measurement

Recognizing the challenges inherent in cost of care measurement, MAP strongly supported incorporating cost measures into the cardiovascular and diabetes families of measures to gain experience measuring cost of care. Noting that measures will need to be improved and refined with broader use, MAP recommended caution in using cost measures for payment incentives at this time. Furthermore, MAP recommended ultimately linking cost measures with outcome measures for an overall assessment of efficiency. MAP initially preferred

population-based, rather than condition-specific or procedure-specific, measures as a starting place to gain experience and understand the costs across a system.

Public commenters recognized the importance of cost measures and noted that cost and quality measures should be linked so that measure results can be interpreted correctly. The NQF-endorsed Patient-Focused Episode of Care model guiding principles indicate that cost measures should be linked with quality measures. MAP's future efforts to identify an affordability family of measures will consider implications for linking cost and quality measures. Commenters expressed caution regarding the cost measures selected for inclusion in the family (NQF #1598 and #1604) because the measures have not been tested outside of integrated systems with a strong primary care model. Additionally, commenters noted the ongoing development of Medicare-specific episode groupers that will be in the public domain, requesting that MAP refrain from including cost measures in families until the public domain episode groupers are available. MAP recognizes the challenges in applying cost measures broadly and will continue to explore them in its future identification of an affordability family of measures.

TABLE 24. COST OF CARE MEASURES SELECTED FOR FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings**
#1598 Endorsed	Total Resource Use Population-based PMPM Index	Ambulatory Surgery Center (ASC), Clinician Office/Clinic, Dialysis Facility, Emergency Medical Services/ Ambulance, Home Health, Hospice, Hospital/Acute Care Facility, Imaging Facility, Behavioral Health/Psychiatric: Inpatient, Laboratory, Nursing Home/ Skilled Nursing Facility, Behavioral Health/Psychiatric: Outpatient, Pharmacy, Inpatient Rehabilitation Facility, Urgent Care	Community, Clinician: Group/Practice	MAP recognizes it may be difficult to apply this measure to other programs as the measure has not been tested outside of an integrated delivery system.
#1604 Endorsed	Total Cost of Care Population-based PMPM Index	Ambulatory Surgery Center (ASC), Clinician Office/Clinic, Dialysis Facility, Emergency Medical Services/ Ambulance, Home Health, Hospice, Hospital/Acute Care Facility, Imaging Facility, Behavioral Health/Psychiatric: Inpatient, Laboratory, Nursing Home/ Skilled Nursing Facility, Behavioral Health/Psychiatric: Outpatient, Pharmacy, Inpatient Rehabilitation Facility, Urgent Care	Community, Clinician: Group/Practice	MAP recognizes it may be difficult to apply this measure to other programs as the measure has not been tested outside of an integrated delivery system.

Cardiovascular Conditions

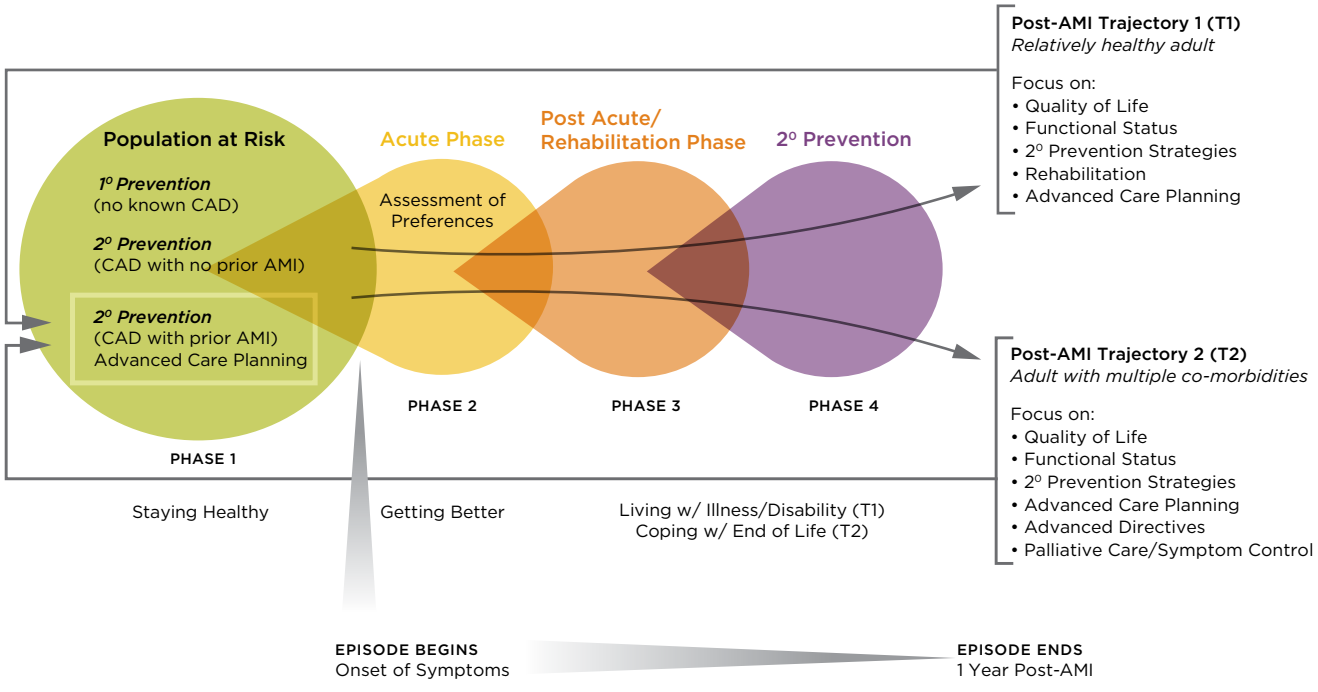
Beyond primary prevention for the population at risk, the remaining phases of the patient-focused episode of care address evaluation and management, and then initial management and follow-up care. To cover the highest-leverage opportunities in cardiovascular care, MAP focused on the cardiovascular conditions identified as high-impact conditions based on prevalence, associated morbidity and mortality, and cost of care (see Appendix B for Medicare High-Impact Conditions list). The high-impact cardiovascular conditions are ischemic heart disease, stroke/transient ischemic attack (TIA), atrial fibrillation, and heart failure.

Each of the high-impact cardiovascular conditions causes substantial morbidity and mortality, presenting substantial opportunity to improve care delivery and outcomes. Each year in the United States, approximately 935,000 individuals have a heart attack, resulting in about 130,000 deaths.[24] Additionally, nearly 800,000 people have a stroke, making it the fourth leading cause of death and a leading cause of serious long-term disability.[25] Atrial fibrillation is the most common arrhythmia, affecting more than 2 million Americans, causing substantial morbidity, and costing billions of dollars for treatment each year.[26] In addition, heart failure leads to approximately 200,000 deaths annually, as well as high treatment costs.[27]

Acute Cardiovascular Conditions

When the episode of care is adapted for acute conditions, the population at risk phase is followed by the acute phase, the post-acute/rehabilitation phase, and the secondary prevention phase (see Figure 3).

FIGURE 3. PATIENT-FOCUSED EPISODE OF CARE FOR ACUTE CARDIOVASCULAR CONDITIONS



During the acute phase, the highest-leverage opportunities are those outcomes associated with diagnosis, procedures, and medication. In general, MAP preferred process measures that assess aspects later in the trajectory of care in settings that offer a broad range of services (e.g., median time to PCI). However, patients may present with AMI in settings that do not provide a full range of services. In these settings, process measures assessing intermediate steps (i.e., median time to electrocardiogram (ECG) may enhance accountability. As such, MAP recognized that ideally the outcome should be measured, the family should also include important structure and process measures to hold the entire system accountable.

For the post-acute phase, MAP emphasized the need for patient-reported outcome measures related to rehabilitation services and access to rehabilitation services. Care coordination is also important to successful rehabilitation services, given the transitions between acute care and rehabilitation care settings (see page 48 for Care Coordination Family of Measures). For rehabilitation-specific measures, many existing measures assess ordering rehabilitation services without determining the outcomes, or even the receipt, of those services. Other existing measures are limited because they represent specific functional status measures (e.g., swallowing, writing) that may not be broadly applicable to many individuals with any one condition. Public commenters supported the need to address the gap in patient-reported outcome measures related to rehabilitation services, particularly for stroke outcomes.

Finally, for the secondary prevention phase, MAP emphasized the need to assess medication management, focusing on persistence of medications over time (i.e., number of days the patient is taking the medication), rather than on fill rates or on clinician ordering of medications just in the acute care setting or at the time of discharge. Measures that assess medication possession ratios and proportion of days covered are currently available, but MAP preferred measures that assess whether patients are actually taking their prescribed medications and understand their medication regimen. Public commenters encouraged the addition of NQF-endorsed measures related to medication persistence (e.g., #0541 Proportion of Days Covered, developed by PQA and currently used in the CMS Medicare Plan Rating system and the Quality Bonus Payments (QBP) demonstration project). MAP aimed to include measures that assess whether patients are taking medications; however, the existing NQF-endorsed measures which assess fill rates may be suitable to meet the purposes of specific programs.

MAP identified measures to address the high-level opportunities for cardiovascular conditions—diagnostics, procedures, complications, rehabilitation, and medications. For ischemic heart disease, MAP selected measures that address timing to procedures to ECG (NQF #0289, #0696), medication management and persistence (NQF #0068, #0066, #0070, #0075), and referral to rehabilitation (NQF #0642). MAP also selected a measure related to complications for ischemic heart disease (NQF #0709). For stroke/TIA MAP selected measures assessing diagnostics (NQF #0661), medication management (NQF #0437, #0241), and rehabilitation assessment (NQF #0441). Across both stroke and ischemic heart disease, gaps include obtaining rehabilitation services, outcomes related to rehabilitation, and medication persistence. Additionally, in terms of procedures, MAP noted the need for measures assessing the appropriateness of coronary artery bypass graft (CABG) and PCI, and while measures assessing overuse of imaging exist, a composite is needed.

TABLE 25. ACUTE CARDIOVASCULAR CONDITIONS MEASURES SELECTED FOR FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
Ischemic Heart Disease				
#0289 Endorsed	Median Time to ECG	Hospital/Acute Care Facility, Urgent Care	Facility, National	This intermediate process measure should be used in facilities that do not offer percutaneous coronary intervention (PCI); facilities offering PCI should report NQF #0163.
#0163 Endorsed	Primary PCI Received within 90 Minutes of Hospital Arrival	Hospital/Acute Care Facility	Facility, National, Regional	This measure is preferred to NQF #0289 (Median Time to ECG) for facilities offering PCI, because it assesses processes more closely linked with outcomes.
#0669 Endorsed	Cardiac Imaging for Preoperative Risk Assessment for Non-Cardiac Low-Risk Surgery	Urgent Care	Facility, National	
#0670 Endorsed	Cardiac Stress Imaging Not Meeting Appropriate Use Criteria: Preoperative Evaluation in Low Risk Surgery Patients	Hospital Outpatient Urgent Care, Clinician Office/Clinic	Facility/Agency, Facility	
#0671 Endorsed	Cardiac Stress Imaging Not Meeting Appropriate Use Criteria: Routine Testing After Percutaneous Coronary Intervention (PCI)	Urgent Care, Clinician Office/ Clinic	Facility	
#0672 Endorsed	Cardiac Stress Imaging Not Meeting Appropriate Use Criteria: Testing in Asymptomatic, Low Risk Patients	Urgent Care, Clinician Office/ Clinic	Facility	
#0355 Endorsed	Bilateral Cardiac Catheterization Rate (IQI 25)	Hospital/Acute Care Facility	Facility	
#0696 Endorsed	The STS CABG Composite Score	Hospital/Acute Care Facility	Community, County or City, Facility, Clinician: Group/ Practice, National, Regional, State, Clinician: Team	
#0287 Endorsed #0288 Endorsed	Median Time to Fibrinolysis Fibrinolytic Therapy Received within 30 Min of ED Arrival	Hospital/Acute Care Facility	Facility	
#0068 Endorsed	IVD: Use of Aspirin or Another Antithrombotic	Clinician Office/ Clinic	Clinician: Group/ Practice, Clinician: Individual	

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0066 Endorsed	Chronic Stable Coronary Artery Disease: ACE Inhibitor or ARB Therapy—Diabetes or Left Ventricular Systolic Dysfunction (LVEF <40%)	Assisted Living, Clinician Office/ Clinic, Outpatient, Home Health, Urgent Care, Nursing Home/ Skilled Nursing Facility, Clinician Office/Clinic	Clinician: Group/ Practice, Clinician: Individual	
#0070 Endorsed	Chronic Stable Coronary Artery Disease: Beta-Blocker Therapy—Prior Myocardial Infarction (MI) or Left Ventricular Systolic Dysfunction (LVEF <40%)	Clinician Office/ Clinic, Outpatient, Home Health, Urgent Care, Nursing Home/ Skilled Nursing Facility, Clinician Office/Clinic	Clinician: Group/ Practice, Clinician: Individual	
#0075 Endorsed	IVD: Complete Lipid Profile and LDL Control <100	All settings, Clinician Office/ Clinic	Clinician: Group/ Practice, Clinician: Individual	
#0642 Endorsed	Cardiac Rehabilitation Patient Referral from an Inpatient Setting	Hospital/Acute Care Facility, Inpatient Rehabilitation Facility	Facility, Clinician: Group/Practice, Health Plan, Clinician: Individual, Integrated Delivery System	MAP noted a prominent measure gap in patient-reported outcomes measures for rehabilitation. Although measure #0642 focuses on referrals, MAP recognized an opportunity for increased rates of referral for cardiac conditions.
#0709 Endorsed	Proportion of patients with a chronic condition that have a potentially avoidable complication during a calendar year.	Clinician Office/ Clinic, Other	County or City, Clinician: Group/ Practice, Health Plan, National, Regional, State	MAP recommended exploring the expansion of the denominator population to include individuals over 65 and stratification of data by condition.*
Stroke				
#0661 Endorsed	OP–23: ED–Head CT Scan Results for Acute Ischemic Stroke or Hemorrhagic Stroke Who Received Head CT Scan Interpretation Within 45 minutes of Arrival	Clinician Office/ Clinic, Hospital/ Acute Care Facility	Facility	
#0437 Endorsed	Stroke and Stroke Rehabilitation: Thrombolytic Therapy	Hospital/Acute Care Facility	Facility, Integrated Delivery System, National	
#0241 Endorsed	Stroke and Stroke Rehabilitation: Anticoagulant Therapy Prescribed for Atrial Fibrillation at Discharge	Hospital/Acute Care Facility	Clinician: Individual	

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
#0441 Endorsed	Assessed for Rehabilitation	Hospital/Acute Care Facility	Facility, Integrated Delivery System, National	MAP noted a prominent measure gap in patient-reported outcomes measures for rehabilitation; however, MAP recognized the importance of the intermediate step to determine if rehabilitation services are needed.

GAPS		
Gap	**Gap Description**	**Public Comment**
Diagnostics/Procedures	• Composite measure assessing appropriateness of all cardiac imaging. The ability to stratify the composite by procedure for quality improvement purposes is important. • Appropriateness of coronary artery bypass graft and PCI at the provider and system levels of analysis	
Rehabilitation	• Patient-reported outcomes related to rehabilitation, assessed at the facility, system, and community levels of analysis	Public commenters noted that measures should ensure referrals to appropriate rehabilitation service or setting and assess the change in patients' functional status and cognition.
Medication Persistence	• Medication management measures that focus on persistence of medications (patients taking medications) for secondary prevention • ACE/ARB, beta blocker, statin persistence for ischemic heart disease • Anticoagulants, statins, and hypertensive medication for stroke	Public commenters noted that NQF-endorsed measures related to medication persistence exist (e.g., #0541 Proportion of Days Covered, developed by PQA). MAP aimed to include measures that assess whether patients are taking medications; however, the existing NQF-endorsed measures may be suitable to meet the purposes of specific programs.

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Chronic Cardiovascular Conditions

MAP considered measurement opportunities for the evaluation and ongoing management phase and follow-up care phase of the episode of care. Within the former phase, the highest-leverage opportunities focus on identifying patient preferences and care coordination; however, MAP will address these topics in other families of measures that cut across diseases (see page 13 for Care Coordination Family of Measures). For the latter phase, MAP emphasized the need for medication management measures that focus on the persistence of medications, rather than on ordering or prescribing medications. Several aspects of medication management have been assessed for a long time, and a "topped out" measure no longer represents a significant opportunity for improvement. MAP identified measures to address some aspects of medication management (NQF #1525, #0081, 0083), noting that other aspects of medication management (i.e., persistence of ACE/ARBs, beta blockers) remain gaps. Additionally, MAP noted the need for measures addressing early identification of decompensated heart failure and assessment of functional status.

TABLE 26. CHRONIC CARDIOVASCULAR CONDITION MEASURES SELECTED FOR FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings***
Atrial Fibrillation				
#1525 Endorsed	Chronic Anticoagulation Therapy	Clinician Office/Clinic	Clinician: Individual	One public commenter expressed concern about the breadth of the measure exclusions.
Heart Failure				
#0081 Endorsed	Heart Failure (HF): Angiotensin-Converting Enzyme (ACE) Inhibitor or Angiotensin Receptor Blocker (ARB) Therapy for Left Ventricular Systolic Dysfunction (LVSD)	Assisted Living, Clinician Office/Clinic, Outpatient, Home Health, Hospital/Acute Care Facility, Urgent Care, Nursing Home/Skilled Nursing Facility, Clinician Office/Clinic	Clinician: Group/Practice, Clinician: Individual	Although MAP emphasized measures assessing persistence of medications, prescribing ACE/ARBs varies across providers.
#0083 Endorsed	Heart Failure: Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction	Urgent Care, Clinician Office/Clinic, Home Health, Hospital/Acute Care Facility, Nursing Home/Skilled Nursing Facility	Facility, Clinician: Group/Practice, Clinician: Individual	One public commenter expressed concern about the breadth of the measure exclusions.

GAPS		
Gap	**Gap Description**	**Public Comment**
Functional Status	• Assessment of functional status at all levels of analysis and settings	
Medications	• Medication management measures the focus on persistence of medications (patients taking medications) as part of follow-up care – ACE/ARB, beta blockers	Public commenters noted that NQF-endorsed measures related to medication persistence exist (e.g., Proportion of Days Covered developed by PQA). MAP aimed to include measures that assess whether patients are taking medications; however, the existing NQF-endorsed measures may be suitable to meet the purposes of specific programs.
Diagnostics	• Early identification of heart failure decompensation	

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

Mortality

Recognizing that mortality indicators are meaningful outcome measures for providers and consumers, MAP included measures of mortality in the cardiovascular family of measures. MAP preferred a 30-day period to extend the window of accountability beyond acute hospitalization. Similarly, MAP preferred an all-cause mortality rate to capture the multiple factors that can contribute to death. For example, an individual who dies of heart failure may have multiple factors contributing to death, of which heart failure is only one. Although mortality measures exclude patients who receive the Medicare hospice benefit, MAP noted that mortality measures should further account for patients receiving palliative care.

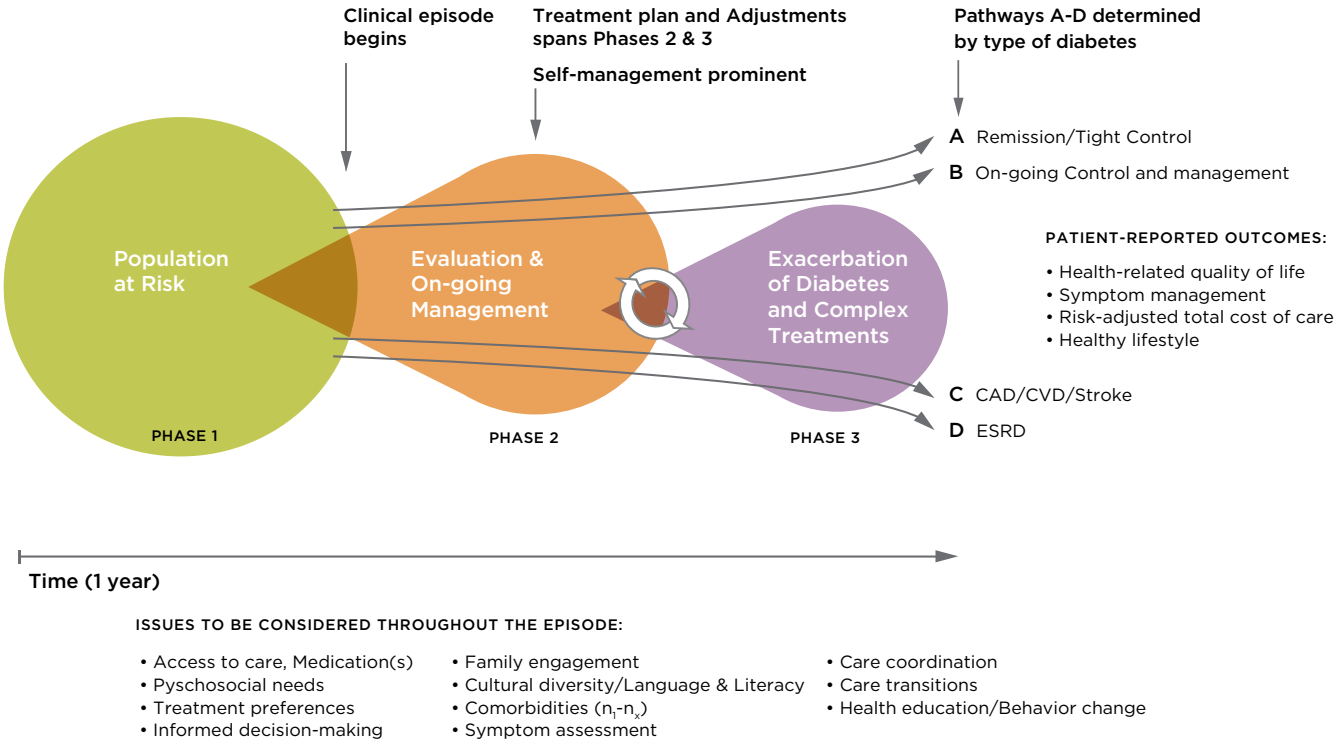
TABLE 27. CARDIOVASCULAR CONDITIONS MORTALITY MEASURES SELECTED FOR FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings**
#0119 Endorsed (part of #0696 composite)	Risk-Adjusted Operative Mortality for CABG	Hospital/Acute Care Facility	County or City, Facility, Clinician: Group/Practice, National, Regional, State	
#0122 Endorsed	Risk-Adjusted Operative Mortality MV Replacement + CABG Surgery	Cardiac Surgery, Surgery	County or City, Facility, Clinician: Group/Practice, National, Regional, State, Clinician: Team	One public commenter recommended replacement with NQF #0120, Risk-Adjusted Operative Mortality for Aortic Valve Replacement (AVR), stating that #0120 would capture more cardiac cases and provide a more comprehensive assessment of performance.
#0230 Endorsed	Hospital 30-Day, All-Cause, Risk-Standardized Mortality Rate (RSMR) Following Acute Myocardial Infarction (AMI) Hospitalization for Patients 18 and Older	Hospital/Acute Care Facility	Facility	
#0535 Endorsed	30-Day All-Cause Risk-Standardized Mortality Rate Following Percutaneous Coronary Intervention (PCI) for Patients Without ST Segment Elevation Myocardial Infarction (STEMI) and Without Cardiogenic Shock	Hospital/Acute Care Facility	Facility	
#0536 Endorsed	30-day all-cause risk-standardized mortality rate following Percutaneous Coronary Intervention (PCI) for patients with ST segment elevation myocardial infarction (STEMI) or cardiogenic shock	Hospital/Acute Care Facility	Facility	
#0229 Endorsed	Heart Failure (HF) 30-Day Mortality Rate	Hospital/Acute Care Facility	Facility	

Diabetes

Diabetes is the seventh leading cause of death in the United States and results in significant morbidity and costs. It is estimated that about 8% of the United States population has diabetes.[28] The episode of care model for diabetes begins with the population at risk, followed by the evaluation and ongoing management of care phase, and then the exacerbation of diabetes and complex treatments phase (see Figure 4).

FIGURE 4. PATIENT-FOCUSED EPISODE OF CARE FOR DIABETES



ISSUES TO BE CONSIDERED THROUGHOUT THE EPISODE:

- Access to care, Medication(s)
- Pyschosocial needs
- Treatment preferences
- Informed decision-making
- Family engagement
- Cultural diversity/Language & Literacy
- Comorbidities (n_1-n_x)
- Symptom assessment
- Care coordination
- Care transitions
- Health education/Behavior change

Diabetes care requires significant self-management. MAP noted the need for good measures of patient and family engagement for assessing diabetes care, but it preferred broadly applicable measures of engagement rather than condition-specific measures for diabetes only. MAP will identify a patient and family engagement family of measures in its next phase of work.

MAP identified high-leverage improvement opportunities across the episode of care for diabetes. Within the evaluation and ongoing management phase, implementation of evidence-based guidelines for glycemic control, blood pressure control, and lipid control can lead to incremental improvements and reduction in the risk of complications. Within the exacerbation of diabetes and complex treatment phase, ongoing evaluation and management of dental health, eye health, as well as prevention of peripheral neuropathy and nephropathy, are opportunities for measurement. MAP noted that focusing on upstream evaluation and ongoing management can prevent downstream complications. Accordingly, to identify a parsimonious set of measures, MAP emphasized individual measures assessing evaluation and ongoing management rather than individual measures assessing management of exacerbations of diabetes and complex treatments. Issues related to the exacerbation of diabetes and complex treatments could be included in a composite measure that assesses whether diabetes care is comprehensive, specifically, sequelae of diabetes that go beyond routine assessment of dental health, eye health, neuropathy, nephropathy, and cardiovascular disease and measure long-term outcomes such as end organ damage. Accordingly, MAP identified measures to address glycemic control and lipid control (NQF #0575, #0064), noting that upstream measures of diabetes management are more suitable for the family of measures than are routine assessments. Public commenters recommended inclusion of measures that address retinopathy (NQF #0055, 0088, 0089). MAP noted that measure #0055 is included in Optimal Diabetes Care composite #0729. Additionally these measures should be considered for federal programs (i.e., PQRS), as appropriate, to meet the program needs.

When identifying diabetes composite measures to be included in the family, MAP determined that both composite measures that are NQF-endorsed are valuable and reflect two different approaches to measurement. One composite combines the rates of its individual components into an average score, while the other composite uses all-or-none scoring. MAP noted that attribution and program purpose should be considered when incorporating these composites into programs. A phasing strategy could be applied such that composites using average scoring could be implemented first, and then, as performance improves, composites using all-or-nothing scoring could be implemented to raise the bar.

TABLE 28. DIABETES MEASURES SELECTED FOR FAMILY OF MEASURES

MEASURES				
NQF # and Status	**Measure**	**Care Setting**	**Level of Analysis**	**MAP Findings**
#0575 Endorsed	Comprehensive Diabetes Care: HbA1c Control (<8.0%)	Clinician Office/ Clinic	Clinician: Group/ Practice, Health Plan, Clinician: Individual, Integrated Delivery System, National, Regional, State	One public commenter suggested HbA1c control use stricter standards, such as those developed by the American Association of Clinical Endocrinologists.
#0064 Endorsed	Diabetes Measure Pair: A Lipid management: low density lipoprotein cholesterol (LDL-C) <130, B Lipid management: LDL-C <100	Clinician Office/ Clinic	Clinician: Group/ Practice, Health Plan, Clinician: Individual, Integrated Delivery System, National, Regional, State	MAP noted that forthcoming National Heart, Lung and Blood Institute (NHLBHI) guidelines could change the low density lipoprotein targets. Adjusting measures to align with new guidelines will be addressed through the NQF-endorsement process.
Composites				
#0729 Endorsed	Optimal Diabetes Care	Clinician Office/ Clinic	Clinician: Group/ Practice, Integrated Delivery System	MAP suggested that both diabetes composites consider addressing body mass index.
#0731 Endorsed	Comprehensive Diabetes Care	Clinician Office/ Clinic	Clinician: Group/ Practice, Health Plan, Clinician: Individual	

GAPS		
Gap	**Gap Description**	**Public Comment***
Glycemic Control	• Measures addressing glycemic control for complex patients (e.g., geriatric population, multiple chronic conditions) at the clinician, facility, and system levels of analysis • Pediatric glycemic control • Measures addressing glycemic control at the facility level	Public commenters supported expansion of levels of analysis for glycemic control.
Lipid Control	• Measures addressing lipid control at the facility level of analysis	Public commenters supported expansion of levels of analysis for lipid control.
Sequelae of Exacerbations	• Measures addressing sequelae of diabetes exacerbations at all levels of analyses	Public commenters recommended inclusion of measures that address retinopathy (NQF #0055, 0088, 0089). MAP noted that measure #0055 is included in composite #0729, and that these measures should be considered for federal programs (i.e., PQRS), as appropriate, to meet the program needs.

* MAP notes that suggested modifications to existing NQF-endorsed measures would have to be considered by measure developers and submitted for NQF-endorsement.

GAP-FILLING PATHWAYS: DEFINING MAP'S ROLE AND NEXT STEPS

Gaps in performance measurement are of great interest and concern to those who receive, purchase, and provide care. Without a coordinated approach among measure developers, funders, program implementers, and other stakeholders, high-priority measurement gaps are likely to persist. MAP, in conjunction with NPP and NQF's consensus development process for measure endorsement, can contribute to efforts to identify, prioritize, and address measure gaps that hinder the nation's ability to meet NQS goals. Partnerships such as MAP and NPP are well-positioned to shed light on measure development needs by bringing stakeholders together to focus on the highest leverage areas for measurement under the NQS.

MAP Gap-Filling Strategy

MAP recently put forth its **three-year strategic plan**, whereby MAP serves as a catalyzing agent for gap-filling through systematic identification and categorization of measure gaps along the measure lifecycle (see Figure 5). Successful development and implementation of measures are linked in a multi-step process: the measure lifecycle is initiated by identification of performance gaps and measure ideas to fill those gaps; moves forward with the development, testing, and endorsement of measures; and is completed when measures are implemented and evaluated for impact.

By leveraging its relationships within NQF and with external stakeholders, MAP will clarify barriers to gap-filling and make potential solutions more evident. For example, where a gap requiring de novo measure development is identified, MAP will suggest measure ideas. Where an existing measure should be expanded to include additional populations and settings, MAP will collaborate on signaling development and testing gaps. Where an implementation gap exists for an endorsed measure, MAP will work with stakeholders to define a measure implementation phasing strategy.

FIGURE 5. THE MEASURE LIFECYCLE

Five Major Themes in Measure Gaps

Throughout its first and second years of work, MAP generated detailed lists of measure gaps within its coordination strategy reports for clinician performance measurement programs, post-acute and long-term care settings, Prospective Payment System (PPS)-exempt cancer hospitals, hospice and palliative care, and the dual eligible beneficiary population. During its first annual pre-rulemaking process, MAP also enumerated important measure gaps for seventeen federal public reporting and performance-based payment programs. Common themes in measure gaps emerged from MAP's various analyses, and five of the most frequently reiterated types of measure gaps are discussed below.

Two of the five major themes in gap identification are the desire for more **person-centered measurement** and assessment of effective **bi-directional communication** between patients and their providers and care teams. MAP has prioritized the need for measures that focus on function, goal attainment, and patient and family engagement. Person-centered measures should also be oriented toward integrated models of healthcare delivery, helping to move beyond the existing setting-based silos of care and measurement. To uphold a person-centered approach to healthcare, communication must be two-way between patients and their providers and care teams. MAP focused on moving away from process measures regarding patient-provider communication that are not proximal to outcomes, pushing toward the development of measures that assess whether patients have been actively involved in the care planning process and whether shared decision-making has occurred.

The third important area centers on **outcome measures**, wherein MAP has provided examples of gaps in patient-reported outcomes of functional status, measures capturing the occurrence of injury due to adverse drug events, calculation of global cardiometabolic risk, and assessment of cancer and stage-specific survival rates. For example, MAP's evaluation of existing process and structural measures of medication reconciliation, lab monitoring for long-term medications, and electronic prescribing have led to an urgent call for outcome measures related to adverse drug events (ADEs). These measures should capture injury or mortality from ADEs across all care settings, including events of wrong medication, wrong dosage, drug-allergy, and contraindicated drug-drug interactions. Although MAP consistently calls out gaps in outcome measures and looks toward the promise of HIT in the collection and reporting of outcomes data, it has acknowledged the continuing need for structural measures until EHR systems become more widespread.

A fourth theme for measure gaps relates to measures of **affordability**. MAP members repeatedly noted the limited number of available NQF-endorsed measures that focus on cost of care, and more importantly, the lack of measures assessing efficiency (i.e., the quality of services provided for each healthcare dollar spent). These types of measures in general are relative newcomers to the development and endorsement processes. MAP indicated that measures of resource use and total cost are needed to evaluate practice patterns, must be linked to measures of quality, and should be more global in accounting for a patient's trajectory of care across settings and conditions. As such, efficiency of care measures—measures where cost and quality are considered in relation to one another—remain a major gap area.

The fifth major gap area pertains to suggested **modifications** to measures that are limited in terms of the populations, settings, or some other component. MAP previously noted that measures related to care transitions are too often focused on the inpatient hospital setting and should consider transitions to and from nursing homes, rehabilitation facilities, and home care. MAP also suggested modifications to the denominator populations for various performance measures to expand their reach to additional relevant groups,

such as individuals with other primary conditions, children, or the elderly where applicable. Measures related to care planning and advanced directives are relevant to many, if not all, patient populations. For example, certain existing care planning measures limited solely to cancer patients could be expanded to apply to patients with other conditions. MAP also raised concern about selected measures that were restricted to certain age groups. For example, measures focusing on avoidable admissions and readmissions do not include pediatric populations. Rather than proposing that all of these gaps be labeled as necessitating de novo measure development, MAP pointed out opportunities to enhance the existing measures by expanding their specifications. Modified measures may require reconsideration under the NQF endorsement and maintenance process, depending on the extent of the changes.

Illustrative Examples of Person-Centered Care and Bi-Directional Communication Measure Gaps

As part of MAP's second-year activities, a series of task force meetings were convened to develop four families of measures for safety, care coordination, diabetes, and cardiovascular disease. MAP invited a small sample of measure developers to participate in these meetings to share their reactions to the measure gaps identified by MAP and to inform any efforts under way to address the gap areas.

To better illustrate the type of gap identification and prioritization efforts that MAP has engaged in thus far, specific measure gap examples and measure developer feedback are reviewed below. These examples relate to person-centered care and bi-directional communication, and they address the NQS priorities for ensuring that individuals and their families are engaged as care partners, and promoting effective communication and coordination of care. Although some existing performance measures have begun to address these priority areas, MAP noted a significant need for new and better measures to more thoroughly cover the topics.

One example is the assessment of care planning. Prior work by MAP highlighted that existing performance measures do not adequately capture person-centered care planning and implementation, particularly in the dual eligible beneficiary population. This issue was reaffirmed at the task force meetings. Because an effective care plan should incorporate patient preferences, performance measures related to care planning must assess this critical aspect. Patient involvement should also be evaluated at each stage of care delivery.

Person-centered care near the end of life is another area in which MAP has identified measure gaps, particularly in the role of shared decision-making. The MAP Performance Measurement Coordination Strategy for Hospice and Palliative Care previously emphasized this point. Patients and their families must be given the opportunity to make informed choices about the type of care received during this difficult phase of life. It is critical to measure not only the initial timeliness of making patients aware of their options, but also the degree to which care continues to be informed by the patient's preferences across settings and over time.

An additional example is the need for better measures for medication reconciliation. Several MAP members stated that measures should reflect patient understanding of medication information, rather than simply use a "checkbox" approach to indicate that medication information was provided to a patient. Prescriptions can involve substantial amounts of associated information, such as the purpose of the medication dosage, storage, special precautions, and potential side effects. Understanding all of this information can be challenging for any individual, let alone one who may be cognitively impaired or a non-native English speaker. Current performance measures that accurately assess the level of bi-directional communication about medications are lacking.

More broadly, MAP has frequently identified gaps in performance measures that do not adequately account for potential disparities and cultural sensitivity. Race, ethnicity, gender, language, religion, and other such factors may profoundly affect a patient's health and healthcare. In particular, MAP members noted that measures should account for these characteristics when they can influence the ability of an individual to receive appropriate and timely care.

Barriers to Measure Gap-Filling

Despite increasing clarity on where high-priority measurement gaps exist, a variety of barriers stand in the way of addressing these gaps. Measure developers indicated that the "low hanging fruit" is gone, leaving the most challenging measurement areas to be tackled. Some of the principal barriers include:

- **Funding streams** for measure development are limited. Creating new measures requires highly technical and time-consuming work, and therefore it can be a lengthy and costly endeavor. Public commenters emphasized that multiple years of funding are often required to develop and test a measure, and that additional time and resources are required for endorsement and ongoing maintenance. Further, the continued standardization of performance measures may diminish the business case for private-sector entities to invest in developing their own measures.
- **Lack of evidence** exists to support valid measure design on certain concepts. In particular, little or no evidence may be available for developing measures in new or evolving domains. An example would be attempting to measure the degree of integration between a health system and long-term supports and services for an individual. This is even more challenging for sub-populations with greater needs and weaker existing support networks.
- **Data required for implementation** of innovative measures are not readily available. The need for patient-reported data is a prime example. Assessing the effectiveness of bi-directional communication is difficult without access to the patient's input. However, current systems are frequently not set up to efficiently collect, aggregate, and share patient-reported data.
- **Attribution** within performance measures remains a challenge, particularly in the care coordination domain where identifying which individual or group is responsible for breakdowns in the care process is problematic. Further, targeted development funds may inadvertently contribute to "siloed" measurement and lack of shared accountability, because requests for measure development in the past have often focused on use in setting-specific programs.

Measure developers expressed many shared viewpoints with MAP about measurement gaps. For example, developers agreed on the need to "raise the bar" for the standards set by care coordination measures. NCQA has made care coordination and safety in the ambulatory care setting, including leveraging EHR usage across institutions, a strategic priority. The Office of the National Coordinator for Health Information Technology (ONC) has been actively working on the development of eMeasures that focus on care coordination. MAP discussions have also indicated the need for measure development to anticipate the future of health care delivery, including the rise of integrated delivery models, such as patient-centered medical homes (PCMHs) and accountable care organizations (ACOs).

Data limitations are a key barrier for measure developers. ONC suggested a future scenario whereby patients (rather than healthcare personnel) directly enter acknowledgment of individual care plans in an EHR, which could establish a reservoir of reliable patient-reported data in an organized system. These data could

then be utilized for eMeasures. EHRs can also serve as a means to collect more data on individual demographics and patient attributes. With access to patient race, ethnicity, gender, primary language, and other similar data, measure results can be stratified by these characteristics to detect disparities.

Measure developers stressed the continued need for greater specificity and prioritization of unfilled gaps. Clear and mutual agreement on definitions, such as what truly constitutes a "shared" care plan, is essential. MAP has begun to describe measurement gaps in greater detail, such as in the Final Report to HHS on **Measuring Healthcare Quality for the Dual Eligible Beneficiary Population**, but it still does not consistently achieve the level of specification that developers need to expeditiously move forward. Perhaps more importantly, prioritizing which of these gaps is most critical, yet feasible to address in the near term, would also expedite gap-filling.

Table 29 summarizes the various measure gap examples discussed above, along with some of the barriers and potential future directions.

TABLE 29. GAPS IN MEASURES THAT ARE PERSON-CENTERED AND FOCUSED ON BI-DIRECTIONAL COMMUNICATION

Gap Example	Where Gap Was Identified	Barriers to Gap-Filling	Potential Next Steps
Person-Centered End-of-Life Care *Lacking are measures that adequately assess the degree to which patients and their families have been involved in making decisions about end-of-life preferences and care.*	Pre-Rulemaking Report, Performance Measurement Coordination Strategy for Hospice and Palliative Care	**Evidence** *Research on the most effective practices may be lacking.* **Data Sources** *Patient-reported data often not consistently collected or integrated.* **Funding** *Incentives are limited for creating new measures to track patient involvement and understanding.* **Attribution** *There are challenges to attributing breakdowns in the care process within a coordinated care environment.*	Prioritize and fund efforts to identify which processes related to patient-centered and coordinated care are most proximal to outcomes. Consider incorporating patient acknowledgment of a care plan directly through an electronic health record (EHR). Leverage EHR use across institutions and actively develop eMeasures that focus on care coordination. Use EHRs to collect more granular data on race, ethnicity, language, gender, and other demographic information, which can then be incorporated into measures.
Coordination of Patient Preferences *Relatively few measures account for whether the care team is communicating with the patient at every stage of care planning and delivery, engaging in shared decision-making, and facilitating the timely transfer of patient-derived information.*	Pre-Rulemaking Report, Care Coordination Family of Measures, Dual Eligible Beneficiaries Report		
Bi-Directional Communication *Measures do not sufficiently reflect provider receipt/use of patient feedback or patient understanding of information from the physician. For example, medication education measures often use a "checkbox," simply indicating that the patient was provided the information.*	Care Coordination Family of Measures, Safety Family of Measures, Dual Eligible Beneficiaries Report		
Disparities/Special Populations *Measures are not necessarily specified in ways to identify and report healthcare disparities or detect progress toward health equity.*	Care Coordination Family of Measures, Dual Eligible Beneficiaries Report		

MAP's Role and Next Steps

When MAP initially identifies potential gaps, the type of gap and possible barriers to filling the gap need to be clearly delineated. For example, one of the gap themes described above involves modifications to existing measures. This type of gap may be fairly easy for a measure developer to address if a relatively small change is needed. However, if there is a lack of evidence to support expanding an existing measure to a different population, care setting or level of analysis, this could present a significant barrier. Better understanding of the hurdles to filling specific measure gaps will facilitate informed recommendations about which gaps can be filled most expeditiously. This is essential given the limited funding and bandwidth available for measure development. Measure developers have agreed to participate in the ongoing MAP discussions about filling measure gaps.

MAP members have expressed frustration with the pace of measure development for important areas, such as care coordination and patient-reported outcomes, and are concerned that "business as usual" will not lead to timely availability of the performance measures needed. When developing the initial families of measures, MAP at times included specific measures despite limitations in scope and design to begin addressing key NQS priorities until better measures ultimately become available. When discussing MAP's role in gap-filling pathways, members agree that MAP's responsibility includes the identification and prioritization of measure gaps, along with more specific suggestions on ideas that should be developed into measures. Given that MAP neither develops nor implements measures, MAP will communicate with the key stakeholders (i.e., measure developers) most aptly positioned to fill the measure gaps and collaborate on the development of gap-filling pathways.

Leadership is needed for establishing a well-funded national measure development agenda that delineates who should play what roles in addressing priority measure gaps. Although it is not MAP's role to set funding priorities, design business models, or make data available for measure development, MAP can clearly signal the highest priority gaps to measure developers, funders, and other stakeholders. MAP's work should be synergistic with other efforts to identify and prioritize measure gaps, including NQF's annual report on measure gaps, which includes interviews with measure developers and draws on findings from NQF measure endorsement, NPP, and MAP.

In summary, daunting challenges exist with the funding, data, and processes needed to develop measures in the identified gap areas. However, MAP can play a significant role in making progress on gap-filling by: (1) identifying and categorizing measurement gaps; (2) prioritizing the gaps based on the expected value and relative feasibility of addressing them; and (3) providing specific ideas about what measures are needed to fill the gaps.

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9 We have limited definitive evidence about the causes of avoidable admissions and readmissions. MAP members raised these patient-level, provider-level, and community-level factors as likely contributing causes.

10 As for the causes of avoidable admissions and readmissions, we have limited definitive evidence about the most effective solutions. MAP members raised these care coordination-related efforts as promising approaches.

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APPENDIX A:
MAP Background

Purpose

The Measure Applications Partnership (MAP) is a public-private partnership convened by the National Quality Forum (NQF) for providing input to the Department of Health and Human Services (HHS) on selecting performance measures for public reporting, performance-based payment, and other programs. The statutory authority for MAP is the Affordable Care Act (ACA), which requires HHS to contract with NQF (as the consensus-based entity) to "convene multi-stakeholder groups to provide input on the selection of quality measures" for various uses.[1]

MAP's careful balance of interests—across consumers, businesses and purchasers, labor, health plans, clinicians, providers, communities and states, and suppliers—ensures HHS will receive varied and thoughtful input on performance measure selection. In particular, the ACA-mandated annual publication of measures under consideration for future federal rulemaking allows MAP to evaluate and provide upstream input to HHS in a more global and strategic way.

MAP is designed to facilitate progress on the aims, priorities, and goals of the National Quality Strategy (NQS)—the national blueprint for providing better care, improving health for people and communities, and making care more affordable.[2] Accordingly, MAP informs the selection of performance measures to achieve the goal of **improvement, transparency, and value for all**.

MAP's objectives are to:

1. **Improve outcomes in high-leverage areas for patients and their families**. MAP encourages the use of the best available measures that are high-impact, relevant, and actionable. MAP has adopted a person-centered approach to measure selection, promoting broader use of patient-reported outcomes, experience, and shared-decision making.
2. **Align performance measurement across programs and sectors to provide consistent and meaningful information that supports provider/clinician improvement, informs consumer choice, and enables purchasers and payers to buy on value.** MAP promotes the use of measures that are aligned across programs and between public- and private-sectors to provide a comprehensive picture of quality for all parts of the healthcare system.
3. **Coordinate measurement efforts to accelerate improvement, enhance system efficiency, and reduce provider data collection burden**. MAP encourages the use of measures that help transform fragmented healthcare delivery into a more integrated system with standardized mechanisms for data collection and transmission.

Coordination with Other Quality Efforts

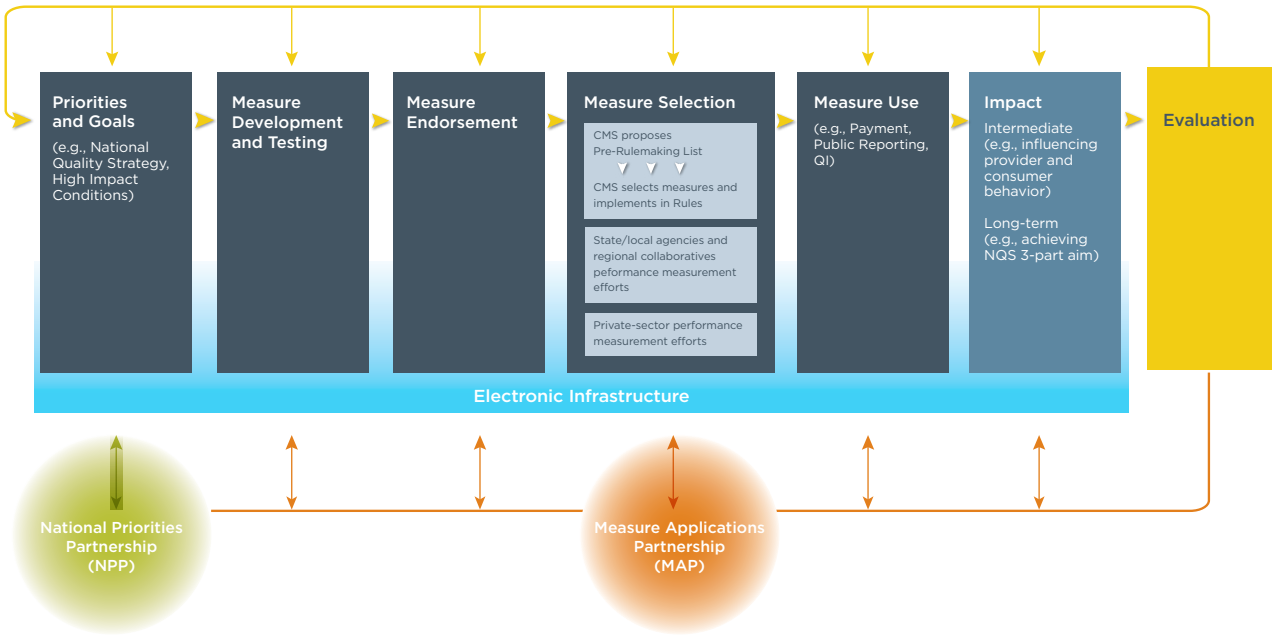
MAP activities are designed to coordinate with and reinforce other efforts for improving health outcomes and healthcare quality. Key strategies for reforming healthcare delivery and financing include publicly reporting performance results for transparency and healthcare decision-making, aligning payment with value, rewarding providers and professionals for using health information technology (health IT) to improve patient care, and providing knowledge and tools to healthcare providers and professionals to help them improve performance. Many public- and private-sector organizations have important responsibilities in implementing these strategies, including federal and state agencies, private purchasers, measure developers, groups convened by NQF, accreditation and certification entities, various quality alliances at the national and community levels, as well as the professionals and providers of healthcare.

Foundational to the success of all of these efforts is a robust Quality Enterprise (see Figure 1) that includes:

- **Setting priorities and goals.** The National Priorities Partnership (NPP) is a multi-stakeholder group convened by NQF to provide input to HHS on the NQS, by identifying priorities, goals, and global measures of progress. The priorities and goals established serve as a guiding framework for the Quality Enterprise.
- **Developing and testing measures.** Using the established NQS priorities and goals as a guide, various entities develop and test measures (e.g., PCPI, NCQA, The Joint Commission, medical specialty societies).
- **Endorsing measures.** NQF uses its formal Consensus Development Process (CDP) to evaluate and endorse consensus standards, including performance measures, best practices, frameworks, and reporting guidelines. The CDP is designed to call for input and carefully consider the interests of stakeholder groups from across the healthcare industry.
- **Measure selection and measure use.** Measures are selected for use in a variety of performance measurement initiatives conducted by federal, state, and local agencies; regional collaboratives; and private sector entities. MAP's role within the Quality Enterprise is to consider and recommend measures for public reporting, performance-based payment, and other programs. Through strategic selection, MAP facilitates measure alignment of public- and private-sector uses of performance measures.
- **Impact.** Performance measures are important tools to monitor and encourage progress on closing performance gaps. Determining the intermediate and long-term impact of performance measures will elucidate if measures are having their intended impact and are driving improvement, transparency, and value.
- **Evaluation.** Evaluation and feedback loops for each of the functions of the Quality Enterprise ensure that each of the various activities is driving desired improvements.

MAP seeks to engage in bi-directional exchange (i.e., feedback loops) with key stakeholders involved in each of the functions of the Quality Enterprise.

FIGURE A-1. FUNCTIONS OF THE QUALITY ENTERPRISE

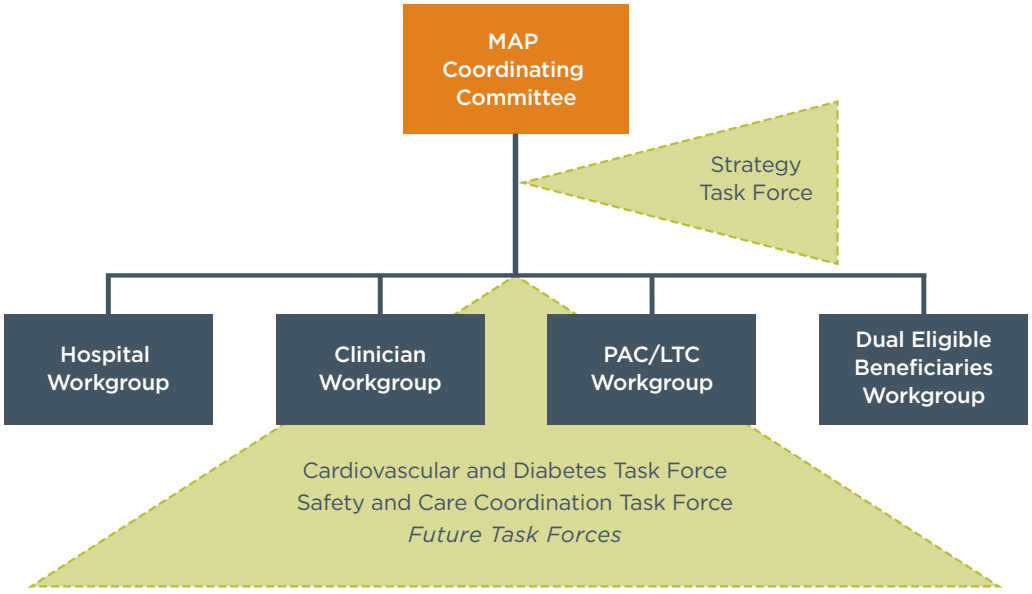


Structure

MAP operates through a two-tiered structure (see Figure 2). The MAP Coordinating Committee provides direction to the MAP workgroups and task forces and final input to HHS. MAP workgroups advise the Coordinating Committee on measures needed for specific care settings, care providers, and patient populations.

Time-limited task forces charged with developing "families of measures"—related measures that cross settings and populations—and a multi-year strategic plan, provide further information to the MAP Coordinating Committee and workgroups. Each multi-stakeholder group includes representatives from public- and private-sector organizations particularly affected by the work and individuals with content expertise.

FIGURE A-2. MAP 2012 STRUCTURE



The NQF Board of Directors oversees MAP. The Board will review any procedural questions and periodically evaluate MAP's structure, function, and effectiveness, but will not review the Coordinating Committee's input to HHS. The Board selected the Coordinating Committee and workgroups based on Board-adopted selection criteria. Balance among stakeholder groups was paramount. Because MAP's tasks are so complex, including individual subject matter experts in the groups also was imperative.

All MAP activities are conducted in an open and transparent manner. The appointment process includes open nominations and a public comment period. MAP meetings are broadcast, materials and summaries are posted on the NQF website, and public comments are solicited on recommendations.

MAP decision-making is based on a foundation of established guiding frameworks. The NQS is the primary basis for the overall MAP strategy. Additional frameworks include the high-impact conditions determined by the NQF-convened Measure Prioritization Advisory Committee, the NQF-endorsed® Patient-Focused Episodes of Care framework,[3] the HHS Partnership for Patients safety initiative,[4] the HHS Prevention and Health Promotion Strategy,[5] the HHS Disparities Strategy,[6] and the HHS Multiple Chronic Conditions framework.[7]

Additionally, the MAP Coordinating Committee has developed Measure Selection Criteria to help guide MAP decision-making. The MAP Measure Selection Criteria are intended to build on, not duplicate, the NQF endorsement criteria. The Measure Selection Criteria characterize the fitness of a measure set for use in a specific program by, among other things, how the measure set addresses the NQS's priority areas and the high-impact conditions, and by whether the measure set advances the purpose of the specific program without creating undesirable consequences.

Timeline and Deliverables

MAP convenes each winter to fulfill its statutory requirement of providing input to HHS on measures under consideration for use in federal programs. MAP workgroups and Coordinating Committee meet in December and January to provide program-specific recommendations to HHS by February 1. (**MAP 2012 Pre-Rulemaking Report**, submitted to HHS February 1, 2012).

Additionally, MAP engages in strategic activities throughout the spring, summer, and fall to inform MAP's pre-rulemaking input. To date MAP has:

- Engaged in **Strategic Planning** to establish MAP's goal and objectives. This process identified strategies and tactics that will enhance MAP's input.
  - **MAP Approach to the Strategic Plan**, submitted to HHS on June 1, 2012
  - **MAP Strategic Plan**, submitted to HHS on October 1, 2012
- Identified **Families of Measures**—sets of related available measures and measure gaps that span programs, care settings, levels of analysis, and populations for specific topic areas related to the NQS priorities and high-impact conditions—to facilitate coordination of measurement efforts.
  - **MAP Families of Measures: Safety, Care Coordination, Cardiovascular Conditions, Diabetes**, submitted to HHS on October 1, 2012
- Provided a measurement strategy and best available measures for evaluating the quality of care provided to Medicare/Medicaid **Dual Eligible Beneficiaries**.
  - **Measuring Healthcare Quality for the Dual Eligible Beneficiary Population**, submitted to HHS on June 1, 2012)
- Developed **Coordination Strategies** intended to elucidate opportunities for public and private stakeholders to accelerate improvement and

synchronize measurement initiatives. Each coordination strategy addresses measures, gaps, and measurement issues; data sources and health information technology implications; alignment across settings and across public- and private-sector programs; special considerations for dual-eligible beneficiaries; and path forward for improving measure application.

- Coordination Strategy for Clinician Performance Measurement, submitted to HHS on October 1, 2011
- Coordination Strategy for Healthcare-Acquired Conditions and Readmissions Across Public and Private Payers, submitted to HHS on October 1, 2011
- MAP Coordination Strategy for Post-Acute Care and Long-Term Care Performance Measurement, submitted to HHS on February 1, 2012
- Performance Measurement Coordination Strategy for PPS-Exempt Cancer Hospitals, submitted to HHS on June 1, 2012
- Performance Measurement Coordination Strategy for Hospice and Palliative Care, submitted to HHS on June 1, 2012

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APPENDIX B:
MAP Measure Selection Criteria and Interpretive Guide

1. Measures within the program measure set are NQF endorsed or meet the requirements for expedited review

Measures within the program measure set are NQF endorsed, indicating that they have met the following criteria: important to measure and report, scientifically acceptable measure properties, usable, and feasible. Measures within the program measure set that are not NQF endorsed but meet requirements for expedited review, including measures in widespread use and/or tested, may be recommended by MAP, contingent on subsequent endorsement. These measures will be submitted for expedited review.

Response option: Strongly Agree / Agree / Disagree / Strongly Disagree

Measures within the program measure set are NQF endorsed or meet requirements for expedited review (including measures in widespread use and/or tested)

Additional implementation consideration: Individual endorsed measures may require additional discussion and may be excluded from the program measure set if there is evidence that implementing the measure would result in undesirable unintended consequences.

2. Program measure set adequately addresses each of the National Quality Strategy (NQS) priorities

Demonstrated by measures addressing each of the National Quality Strategy priorities:

Response option for each subcriterion: Strongly Agree / Agree / Disagree / Strongly Disagree

NQS priority is adequately addressed in the program measure set

Subcriterion 2.1 Safer care

Subcriterion 2.2 Effective care coordination

Subcriterion 2.3 Preventing and treating leading causes of mortality and morbidity

Subcriterion 2.4 Person- and family-centered care

Subcriterion 2.5 Supporting better health in communities

Subcriterion 2.6 Making care more affordable

3. Program measure set adequately addresses high-impact conditions relevant to the program's intended population(s) (e.g., children, adult non-Medicare, older adults, dual eligible beneficiaries)

Demonstrated by the program measure set addressing Medicare High-Impact Conditions; Child Health Conditions and risks; or conditions of high prevalence, high disease burden, and high cost relevant to the program's intended population(s). (Refer to Table 2 for Medicare High-Impact Conditions and Child Health Conditions determined by the NQF Measure Prioritization Advisory Committee.)

Response option: Strongly Agree / Agree / Disagree / Strongly Disagree:

Program measure set adequately addresses high-impact conditions relevant to the program.

4. Program measure set promotes alignment with specific program attributes, as well as alignment across programs

Demonstrated by a program measure set that is applicable to the intended care setting(s), level(s) of analysis, and population(s) relevant to the program.

Response option for each subcriterion: Strongly Agree / Agree / Disagree / Strongly Disagree

Subcriterion 4.1 Program measure set is applicable to the program's intended care setting(s)

Subcriterion 4.2 Program measure set is applicable to the program's intended level(s) of analysis

Subcriterion 4.3 Program measure set is applicable to the program's population(s)

5. Program measure set includes an appropriate mix of measure types

Demonstrated by a program measure set that includes an appropriate mix of process, outcome, experience of care, cost/resource use/appropriateness, and structural measures necessary for the specific program attributes.

Response option for each subcriterion: Strongly Agree / Agree / Disagree / Strongly Disagree

Subcriterion 5.1 Outcome measures are adequately represented in the program measure set

Subcriterion 5.2 Process measures are adequately represented in the program measure set

Subcriterion 5.3 Experience of care measures are adequately represented in the program measure set (e.g., patient, family, caregiver)

Subcriterion 5.4 Cost/resource use/appropriateness measures are adequately represented in the program measure set

Subcriterion 5.5 Structural measures and measures of access are represented in the program measure set when appropriate

6. Program measure set enables measurement across the person-centered episode of care[1]

Demonstrated by assessment of the person's trajectory across providers, settings, and time.

Response option for each subcriterion: Strongly Agree / Agree / Disagree / Strongly Disagree

Subcriterion 6.1 Measures within the program measure set are applicable across relevant providers

Subcriterion 6.2 Measures within the program measure set are applicable across relevant settings

Subcriterion 6.3 Program measure set adequately measures patient care across time

7. Program measure set includes considerations for healthcare disparities[2]

Demonstrated by a program measure set that promotes equitable access and treatment by considering healthcare disparities. Factors include addressing race, ethnicity, socioeconomic status, language, gender, age disparities, or geographical considerations (e.g., urban vs. rural). Program measure set also can address populations at risk for healthcare disparities (e.g., people with behavioral/mental illness).

Response option for each subcriterion: Strongly Agree / Agree / Disagree / Strongly Disagree

Subcriterion 7.1 Program measure set includes measures that directly assess healthcare disparities (e.g., interpreter services)

Subcriterion 7.2 Program measure set includes measures that are sensitive to disparities measurement (e.g., beta blocker treatment after a heart attack)

8. Program measure set promotes parsimony

Demonstrated by a program measure set that supports efficient (i.e., minimum number of measures and the least effort) use of resources for data collection and reporting and supports multiple programs and measurement applications. The program measure set should balance the degree of effort associated with measurement and its opportunity to improve quality.

Response option for each subcriterion: Strongly Agree / Agree / Disagree / Strongly Disagree

Subcriterion 8.1 Program measure set demonstrates efficiency (i.e., minimum number of measures and the least burdensome)

Subcriterion 8.2 Program measure set can be used across multiple programs or applications (e.g., Meaningful Use, Physician Quality Reporting System [PQRS])

TABLE 1: NATIONAL QUALITY STRATEGY PRIORITIES

1. Making care safer by reducing harm caused in the delivery of care.
2. Ensuring that each person and family is engaged as partners in their care.
3. Promoting effective communication and coordination of care.
4. Promoting the most effective prevention and treatment practices for the leading causes of mortality, starting with cardiovascular disease.
5. Working with communities to promote wide use of best practices to enable healthy living.
6. Making quality care more affordable for individuals, families, employers, and governments by developing and spreading new healthcare delivery models.

TABLE 2: HIGH-IMPACT CONDITIONS

Medicare Conditions
1. Major Depression
2. Congestive Heart Failure
3. Ischemic Heart Disease
4. Diabetes
5. Stroke/Transient Ischemic Attack
6. Alzheimer's Disease
7. Breast Cancer
8. Chronic Obstructive Pulmonary Disease
9. Acute Myocardial Infarction
10. Colorectal Cancer
11. Hip/Pelvic Fracture
12. Chronic Renal Disease
13. Prostate Cancer
14. Rheumatoid Arthritis/Osteoarthritis
15. Atrial Fibrillation
16. Lung Cancer
17. Cataract
18. Osteoporosis
19. Glaucoma
20. Endometrial Cancer

Child Health Conditions and Risks
1. Tobacco Use
2. Overweight/Obese (≥85th percentile BMI for age)
3. Risk of Developmental Delays or Behavioral Problems
4. Oral Health
5. Diabetes
6. Asthma
7. Depression
8. Behavior or Conduct Problems
9. Chronic Ear Infections (3 or more in the past year)
10. Autism, Asperger's, PDD, ASD
11. Developmental Delay (diag.)
12. Environmental Allergies (hay fever, respiratory or skin allergies)
13. Learning Disability
14. Anxiety Problems
15. ADD/ADHD
16. Vision Problems Not Corrected by Glasses
17. Bone, Joint, or Muscle Problems
18. Migraine Headaches
19. Food or Digestive Allergy
20. Hearing Problems
21. Stuttering, Stammering, or Other Speech Problems
22. Brain Injury or Concussion
23. Epilepsy or Seizure Disorder
24. Tourette Syndrome

MAP Measure Selection Criteria Interpretive Guide

Instructions for applying the measure selection criteria:

The measure selection criteria are designed to assist MAP Coordinating Committee and workgroup members in assessing measure sets used in payment and public reporting programs. The criteria have been developed with feedback from the MAP Coordinating Committee, workgroups, and public comment. The criteria are intended to facilitate a structured thought process that results in generating discussion. A rating scale of *Strongly Agree, Agree, Disagree, Strongly Disagree* is offered for each criterion or subcriterion. An open text box is included in the response tool to capture reflections on the rationale for ratings.

The eight criteria areas are designed to assist in determining whether a measure set is aligned with its intended use and whether the set best reflects "quality" health and healthcare. The term "measure set" can refer to a collection of measures—for a program, condition, procedure, topic, or population. For the purposes of MAP moving forward, we will qualify all uses of the term measure set to refer to either a "program measure set," a "core measure set" for a setting, or a "condition measure set." The following eight criteria apply to the evaluation of program measure sets; a subset of the criteria apply to condition measure sets.

FOR CRITERION 1—NQF ENDORSEMENT:

The optimal option is for all measures in the program measure set to be NQF endorsed or ready for NQF expedited review. The endorsement process evaluates individual measures against four main criteria:

1. **Importance to measure and report**—how well the measure addresses a specific national health goal/priority, addresses an area where a performance gap exists, and demonstrates evidence to support the measure focus.
2. **Scientific acceptability of the measurement properties**—evaluates the extent to which each measure produces consistent (reliable) and credible (valid) results about the quality of care.
3. **Usability**—the extent to which intended audiences (e.g., consumers, purchasers, providers, and policymakers) can understand the results of the measure and are likely to find the measure results useful for decisionmaking.
4. **Feasibility**—the extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measures.

To be recommended by MAP, a measure that is not NQF endorsed must meet the following requirements, so that it can be submitted for expedited review:

- the extent to which the measure(s) under consideration has been sufficiently tested and/or in widespread use.
- whether the scope of the project/measure set is relatively narrow.
- time-sensitive legislative/regulatory mandate for the measure(s).

Measures that are NQF endorsed are broadly available for quality improvement and public accountability programs. In some instances, there may be evidence that implementation challenges and/or unintended negative consequences of measurement to individuals or populations may outweigh benefits associated

with the use of the performance measure. Additional consideration and discussion by the MAP workgroup or Coordinating Committee may be appropriate prior to selection. To raise concerns on particular measures, please make a note in the included text box under this criterion.

FOR CRITERION 2—PROGRAM MEASURE SET ADDRESSES THE NATIONAL QUALITY STRATEGY PRIORITIES

The program's set of measures is expected to adequately address each of the NQS priorities as described in criterion 2.1-2.6. The definition of "adequate" rests on the expert judgment of the Coordinating Committee or workgroup member using the selection criteria. This assessment should consider the current landscape of NQF-endorsed measures available for selection within each of the priority areas.

FOR CRITERION 3—PROGRAM MEASURE SET ADDRESSES HIGH-IMPACT CONDITIONS

When evaluating the program measure set, measures that adequately capture information on high-impact conditions should be included based on their relevance to the program's intended population. High-priority Medicare and Child Health Conditions have been determined by NQF's Measure Prioritization Advisory Committee and are included to provide guidance. For programs intended to address high-impact conditions for populations other than Medicare beneficiaries and children (e.g., adult non-Medicare and dual eligible beneficiaries), high-impact conditions can be demonstrated by their high prevalence, high disease burden, and high costs relevant to the program. Examples of other ongoing efforts may include research or literature on the adult Medicaid population or other common populations. The definition of "adequate" rests on the expert judgment of the Coordinating Committee or workgroup member using the selection criteria.

FOR CRITERION 4—PROGRAM MEASURE SET PROMOTES ALIGNMENT WITH SPECIFIC PROGRAM ATTRIBUTES, AS WELL AS ALIGNMENT ACROSS PROGRAMS

The program measure sets should align with the attributes of the specific program for which they intend to be used. Background material on the program being evaluated and its intended purpose are provided to help with applying the criteria. This should assist with making discernments about the intended care setting(s), level(s) of analysis, and population(s). While the program measure set should address the unique aims of a given program, the overall goal is to harmonize measurement across programs and settings, and between the public and private sectors.

- **Care settings include:** Ambulatory Care, Ambulatory Surgery Center, Clinician Office, Clinic/Urgent Care, Behavioral Health/Psychiatric, Dialysis Facility, Emergency Medical Services—Ambulance, Home Health, Hospice, Hospital—Acute Care Facility, Imaging Facility, Laboratory, Pharmacy, Post-Acute/Long Term Care Facility, Nursing Home/Skilled Nursing Facility, Rehabilitation.
- **Level of analysis includes:** Clinicians/Individual, Group/Practice, Team, Facility, Health Plan, Integrated Delivery System, and Population (Community, County/City, National, Regional, or States).
- **Target populations include:** Adult/Elderly Care, Children's Health, Disparities Sensitive, Maternal Care, and Special Healthcare Needs.

FOR CRITERION 5—PROGRAM MEASURE SET INCLUDES AN APPROPRIATE MIX OF MEASURE TYPES

The program measure set should be evaluated for an appropriate mix of measure types. The definition of "appropriate" rests on the expert judgment of the Coordinating Committee or workgroup member using the selection criteria. The evaluated measure types include:

1. **Outcome measures**—Clinical outcome measures reflect the actual results of care.[3] Patient-reported measures assess outcomes and effectiveness of care as experienced by patients and their families. Patient-reported measures include measures of patients' understanding of treatment options and care plans, and their feedback on whether care made a difference.[4]
2. **Process measures**—Process denotes what is actually done in giving and receiving care.[5] NQF endorsement seeks to ensure that process measures have a systematic assessment of the quantity, quality, and consistency of the body of evidence that the measure focus leads to the desired health outcome.[6]
3. **Experience of care measures**—Defined as patients' perspective on their care.[7]
4. **Cost/resource use/appropriateness measures**

   a. Cost measures—Total cost of care.

   b. Resource use measures—Resource use measures are defined as broadly applicable and comparable measures of health services counts (in terms of units or dollars) that are applied to a population or event (broadly defined to include diagnoses, procedures, or encounters).[8]

   c. Appropriateness measures—Measures that examine the significant clinical, systems, and care coordination aspects involved in the efficient delivery of high-quality services and thereby effectively improve the care of patients and reduce excessive healthcare costs.[9]
5. **Structure measures**—Reflect the conditions in which providers care for patients.[10] This includes the attributes of material resources (such as facilities, equipment, and money), of human resources (such as the number and qualifications of personnel), and of organizational structure (such as medical staff organizations, methods of peer review, and methods of reimbursement).[11] In this case, structural measures should be used only when appropriate for the program attributes and the intended population.

FOR CRITERION 6—PROGRAM MEASURE SET ENABLES MEASUREMENT ACROSS THE PERSON-CENTERED EPISODE OF CARE:

The optimal option is for the program measure set to approach measurement in such a way as to capture a person's natural trajectory through the health and healthcare system over a period of time. Additionally, driving to longitudinal measures that address patients throughout their lifespan, from health, to chronic conditions, and when acutely ill should be emphasized. Evaluating performance in this way can provide insight into how effectively services are coordinated across multiple settings and during critical transition points.

When evaluating subcriteria 6.1-6.3, it is important to note whether the program measure set captures this trajectory (across providers, settings or time). This can be done through the inclusion of individual measures (e.g., 30-day readmission post-hospitalization measure) or multiple measures in concert (e.g., aspirin at arrival for AMI, statins at discharge, AMI 30-day mortality, referral for cardiac rehabilitation).

FOR CRITERION 7—PROGRAM MEASURE SET INCLUDES CONSIDERATIONS FOR HEALTHCARE DISPARITIES:

Measures sets should be able to detect differences in quality among populations or social groupings. Measures should be stratified by demographic information (e.g., race, ethnicity, language, gender, disability, and socioeconomic status, rural vs. urban), which will provide important information to help identify and address disparities.[12]

Subcriterion 7.1 seeks to include measures that are known to assess healthcare disparities (e.g., use of interpreter services to prevent disparities for non-English speaking patients).

Subcriterion 7.2 seeks to include disparities-sensitive measures; these are measures that serve to detect not only differences in quality across institutions or in relation to certain benchmarks, but also differences in quality among populations or social groupings (e.g., race/ethnicity, language).

FOR CRITERION 8—PROGRAM MEASURE SET PROMOTES PARSIMONY:

The optimal option is for the program measure set to support an efficient use of resources in regard to data collection and reporting for accountable entitles, while also measuring the patient's health and healthcare comprehensively.

Subcriterion 8.1 can be evaluated by examining whether the program measure set includes the least number of measures required to capture the program's objectives and data submission that requires the least burden on the part of the accountable entitles.

Subcriterion 8.2 can be evaluated by examining whether the program measure set includes measures that are used across multiple programs (e.g., PQRS, MU, CHIPRA, etc.) and applications (e.g., payment, public reporting, and quality improvement).

ENDNOTES

1 National Quality Forum (NQF), *Measurement Framework: Evaluating Efficiency Across Patient-Focused Episodes of Care*, Washington, DC: NQF; 2010.

2 NQF, *Healthcare Disparities Measurement*, Washington, DC: NQF; 2011.

3 NQF, 2011, *The Right Tools for the Job*. Available at www.qualityforum.org/Measuring_Performance/ABCs/The_Right_Tools_for_the_Job.aspx. Last accessed May 2012.

4 Consumer-Purchases Disclosure Project, 2011. Ten Criteria for Meaningful and Usable Measures of Performance.

5 Donabedian, A., The quality of care, *JAMA*, 1998;260:1743-1748.

6 NQF, 2011, Consensus development process. Available at www.qualityforum.org/Measuring_Performance/Consensus_Development_Process.aspx. Last accessed May 2012.

7 NQF, 2011, *The Right Tools for the Job*. Available at www.qualityforum.org/Measuring_Performance/ABCs/The_Right_Tools_for_the_Job.aspx. Last accessed May 2012.

8 NQF, 2009, National Voluntary Consensus Standards for Outpatient Imaging Efficiency. NQF, Washington, DC. Available at www.qualityforum.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=70048. Last accessed May 2012.

9 NQF, 2011, *The Right Tools for the Job*. Available at www.qualityforum.org/Measuring_Performance/ABCs/The_Right_Tools_for_the_Job.aspx. Last accessed May 2012.

10 Ibid.

11 Donabedian, A. (1988) The quality of care. *JAMA*, 260, 1743-1748.

12 Consumer-Purchases Disclosure Project. (2011). Ten Criteria for Meaningful and Usable Measures of Performance.

APPENDIX C:
Roster for the MAP Coordinating Committee

CO-CHAIRS (VOTING)
George Isham, MD, MS
Elizabeth McGlynn, PhD, MPP

ORGANIZATIONAL MEMBERS (VOTING)	REPRESENTATIVES
AARP	Joyce Dubow, MUP
Academy of Managed Care Pharmacy	Marissa Schlaifer, RPh, MS
AdvaMed	Steven Brotman, MD, JD
AFL-CIO	Gerald Shea
America's Health Insurance Plans	Aparna Higgins, MA
American College of Physicians	David Baker, MD, MPH, FACP
American College of Surgeons	Frank Opelka, MD, FACS
American Hospital Association	Rhonda Anderson, RN, DNSc, FAAN
American Medical Association	Carl Sirio, MD
American Medical Group Association	Sam Lin, MD, PhD, MBA
American Nurses Association	Marla Weston, PhD, RN
Catalyst for Payment Reform	Suzanne Delbanco, PhD
Consumers Union	Doris Peter, PhD
Federation of American Hospitals	Chip N. Kahn
LeadingAge (formerly AAHSA)	Cheryl Phillips, MD, AGSF
Maine Health Management Coalition	Elizabeth Mitchell
National Association of Medicaid Directors	Foster Gesten, MD
National Partnership for Women and Families	Christine Bechtel, MA
Pacific Business Group on Health	William Kramer, MBA

EXPERTISE	INDIVIDUAL SUBJECT MATTER EXPERT MEMBERS (VOTING)
Child Health	Richard Antonelli, MD, MS
Population Health	Bobbie Berkowitz, PhD, RN, CNAA, FAAN
Disparities	Joseph Betancourt, MD, MPH
Rural Health	Ira Moscovice, PhD
Mental Health	Harold Pincus, MD
Post-Acute Care/ Home Health/ Hospice	Carol Raphael, MPA

FEDERAL GOVERNMENT MEMBERS (NON-VOTING, EX OFFICIO)	REPRESENTATIVES
Agency for Healthcare Research and Quality (AHRQ)	Nancy Wilson, MD, MPH
Centers for Disease Control and Prevention (CDC)	Chesley Richards, MD, MPH
Centers for Medicare & Medicaid Services (CMS)	Patrick Conway, MD, MSc
Health Resources and Services Administration (HRSA)	Ahmed Calvo, MD, MPH
Office of Personnel Management/FEHBP (OPM)	John O'Brien
Office of the National Coordinator for HIT (ONC)	Kevin Larsen, MD

ACCREDITATION/CERTIFICATION LIAISONS (NON-VOTING)	REPRESENTATIVES
American Board of Medical Specialties	Christine Cassel, MD
National Committee for Quality Assurance	Peggy O'Kane, MHS
The Joint Commission	Mark Chassin, MD, FACP, MPP, MPH

APPENDIX D:
Roster for the MAP Safety and Care Coordination Task Force

CHAIR (VOTING)
Frank G. Opelka, MD, FACS

ORGANIZATIONAL MEMBERS (VOTING)	REPRESENTATIVES
Alliance of Dedicated Cancer Centers	Ronald Walters, MD, MBA, MHA, MS
American Hospital Association	Richard Umbdenstock
American Organization of Nurse Executives	Patricia Conway-Morana, RN
American Society of Health System Pharmacists	Shekhar Mehta, PharmD, MS
Blue Cross Blue Shield of Massachusetts	Jane Franke, RN, MHA, CPHQ
Building Services 32BJ Health Fund	Barbara Caress
Iowa Healthcare Collaborative	Lance Roberts, PhD
Memphis Business Group on Health	Cristie Upshaw Travis, MSHA
Mothers Against Medical Error	Helen Haskell, MA
National Association of Children's Hospitals and Related Institutions	Andrea Benin, MD
National Rural Health Association	Brock Slabach, MPH, FACHE
Pacific Business Group on Health	David Hopkins, PhD
Premier, Inc.	Richard Bankowitz, MD, MBA, FACP

EXPERTISE	INDIVIDUAL SUBJECT MATTER EXPERT MEMBERS (VOTING)
Patient Safety	Mitchell Levy, MD, FCCM, FCCP
Palliative Care	R. Sean Morrison, MD
State Policy	Dolores Mitchell
GE Healthcare	Dana Alexander
Patient Experience	Dale Shaller, MPA
Safety Net	Bruce Siegel, MD, MPH
Mental Health	Ann Marie Sullivan, MD
Payer	Rhonda Robinson Beale, MD
Payer	MaryAnne Lindeblad, BSN, MPH

PAYERS (VOTING)	REPRESENTATIVES
Aetna	Randall Krakauer, MD
America's Health Insurance Plans	Aparna Higgins, MA
CIGNA	Dick Salmon, MD, PhD
Humana	Thomas James III, MD
LA Care Health Plan	Laura Linebach, RN, BSN, MBA
National Association of Medicaid Directors	Foster Gesten, MD
National Health Policy Group	Rich Bringewatt

PURCHASERS (VOTING)	REPRESENTATIVES
Catalyst for Payment Reform	Suzanne Delbanco, PhD
Pacific Business Group on Health	William Kramer, MBA
The Alliance	Cheryl DeMars, MSSW

FEDERAL GOVERNMENT MEMBERS (NON-VOTING, EX OFFICIO)	REPRESENTATIVES
Agency for Healthcare Research and Quality (AHRQ)	John Bott, MSSW, MBA
Centers for Disease Control and Prevention (CDC)	Chesley Richards, MD, MPH, FACP
Centers for Medicare & Medicaid Services (CMS)	Shaheen Halim, PhD, CPC-A
Office of the National Coordinator for HIT (ONC)	Kevin Larsen, MD
Veterans Health Administration (VHA)	Michael Kelley, MD
Health Resources and Services Administration (HRSA)	Ian Corbridge, MPH, RN
Office of Personnel Management/FEHBP (OPM)	John O'Brien

LIAISONS	REPRESENTATIVES
NPP (Safety)	Laura Cranston
NPP (Care Coordination)	Susan Frampton
CDP (Safety)	Bill Conway
CDP (Care Coordination)	Gerri Lamb

MAP COORDINATING COMMITTEE CO-CHAIRS (NON-VOTING, EX OFFICIO)
George J. Isham, MD, MS
Elizabeth A. McGlynn, PhD, MPP

APPENDIX E:
Roster for the MAP Cardiovascular and Diabetes Care Task Force

CHAIR (VOTING)
Chris Cassel, MD

ORGANIZATIONAL MEMBERS (VOTING)	REPRESENTATIVES
Academy of Managed Care Pharmacy	Marissa Schlaifer, RPh, MS
Aetna	Randall Krakauer, MD
American Academy of Family Physicians	Bruce Bagley, MD
American Association for Retired Persons	Joyce Dubow, MUP
American College of Cardiology	Paul Casale, MD, FACC
American College of Emergency Physicians	Bruce Auerbach, MD, FACC
American Hospital Association	Rhonda Anderson, RN, DNSc, FAAN
American Medical Directors Association	David Polakoff, MD, MsC
American Medical Rehabilitation Providers Association	Suzanne Snyder, PT
Consumers' CHECKBOOK	Robert Krughoff, JD
Iowa Healthcare Collaborative	Lance Roberts, PhD
Minnesota Community Measurement	Beth Averbeck, MD
National Committee for Quality Assurance	Peggy O'Kane, MHS
Physician Consortium for Performance Improvement	Mark Metersky, MD
Premier, Inc.	Richard Bankowitz, MD, MBA, FACP
The Alliance	Amy Moyer

EXPERTISE	INDIVIDUAL SUBJECT MATTER EXPERT MEMBERS (VOTING)
Population Health	Eugene Nelson, MPH, DSc
Health IT/ Patient Reported Outcome Measures	James Walker, MD, FACP

FEDERAL GOVERNMENT MEMBERS (NON-VOTING, EX OFFICIO)	REPRESENTATIVES
Centers for Medicare & Medicaid Services (CMS)	Michael Rapp, MD, JD, FACEP
Health Resources and Service Administration (HRSA)	Ahmed Calvo, MD, MPH
Office of the National Coordinator for HIT (ONC)	Joshua Seidman, MD, PhD

LIAISONS	REPRESENTATIVES
NPP	Peter Briss, MD, MPH
CDP	Mary George, MD, MSPH

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George J. Isham, MD, MS
Elizabeth A. McGlynn, PhD, MPP

APPENDIX F:
Public Comments

Comment Category	Commenter Organization	Commenter Name	Comment
General Comments	Academy of Managed Care Pharmacy	Edith Rosato	The Academy of Managed Care Pharmacy commends the Measure Application Partnership for developing this report, which introduces the concept of families of measures—sets of related available measures and measure gaps that span programs, care settings, levels of analysis, and populations for specific topic areas. The Academy believes that the families of measures can provide measures that are coordinated within and across federal government and private sector programs.
General Comments	American Association of Neurological Surgeons	Koryn Rubin	The American Association of Neurological Surgeons believes it is incorrect for the MAP to assume measures designed and endorsed for use only at the health plan level and/or a specific care setting(s) can be applied for use at the individual or small group level. Issues include, but are not limited to: methodological problems with attribution and/or risk adjustment; measures have not completed testing and therefore have not been able to receive full NQF endorsement; funding is not available to help evolve a measure concept by adding specifications; or there is no solid evidence base available that justifies the development and use of a measure within a particular health care setting, which could potentially harm a patient or lead to overuse. Therefore, we take issue with measures that are proposed for modification outside of their intended use.
General Comments	American College of Surgeons	Jill Shelly	ACS believes that the report should seek to further address the issue of attribution. There are several aspects to attribution to consider. Attribution may be assigned to the individual physician, the group or practice level, or shared attribution across specialty or across various other aspects of the delivery system (e.g. physician or surgeon shared with anesthesia, with radiology, with pathologist and with the hospital system). The ACS provides a system level of measurement for the outcome measures derived in association with ACS NSQIP. We believe that the MAP needs to carefully consider the different types of attribution and provide rationale for inclusion of measures based on attribution. In order to improve the MAP's measure selection process for better assurance that best measures are being selected for a given family, we recognize a need for the MAP to be better informed in their decision-making. One approach to secure appropriate expertise is to convene clinical expert review prior to recommending measures for each priority topic within a family. Another suggestion to assist the MAP in making the most informed decision for measure selection is to collate appropriate data across all relevant HHS agencies for inclusion in the measure selection process. Lastly, we recommend that the report include the distinction that a measure which is best suited for purposes of quality improvement is not necessarily best suited for accountability purposes.

Comment Category	Commenter Organization	Commenter Name	Comment
General Comments	American Medical Association	Carl Sirio	Approach to Identifying Families of Measures MAP seeks to align performance measurement across Department of Health and Human Services' (HHS) programs and between the public and private sectors, while identifying the best available measures to use for specific purposes. As a primary tactic to accomplish these objectives, MAP will identify Families of Measures to promote measure alignment and will create measure sets to encourage best use of available measures. While the AMA supports efforts to better align measurement to link measures to outcomes and to create a comprehensive view of care to support improvement, payment, and public reporting, it is critical that the goal of alignment does not usurp the need to carefully and methodically recommend (or in some cases not recommend) measures for certain quality payment and improvement programs. MAP must balance the trade-offs between the desire to have broad measure accountability with the need for precise measurement and reporting. It should not be assumed that measures designed and validated for use only at the health plan level are appropriate for use at the individual physician or small group level. For example, NCQA's relative resource use measures are intended for use at the health plan or large physician group level where a sufficient sample size can be reported and are expected to produce reliable and valid results. It should not be assumed that these measures can be used to assess individual clinicians. Indeed, these measures are not proposed for use by NCQA or endorsed by NQF for use beyond assessment of health plans or large group practices. There are numerous reasons why measurement varies across health care settings. These include, but are not limited to: methodological problems with attribution and/or risk adjustment at various levels of attribution; measures have not completed testing and therefore have not been able to receive full NQF endorsement; funding is not available to help evolve a measure concept by adding specifications; or there is no solid evidence base available that justifies the development and use of a measure within a particular health care setting. To better explore measure application across settings, the AMA recommends MAP consult with measure developers for the particular measures MAP is considering for use in alternative settings or levels of evaluation.

Comment Category	Commenter Organization	Commenter Name	Comment
General Comments	American Medical Association		We also request that the issue of attribution be highlighted in the Families of Measures' reports. We are concerned that without explicitly addressing the issue of attribution within the Families of Measures, CMS and private payers could inappropriately act upon MAP's measure recommendations. Since not all physicians currently practice within integrated delivery systems or accountable care organizations, there remains a need for measures at other levels of attribution, such as the individual physician or small group level. If a more granular level of measurement is desired, we recommend MAP consider selecting measures developed by PCPI, which are typically developed for application at the individual, small and large physician group level, and as well as the organization level. Additionally, PCPI measures include exceptions to account for patient preference in their care. If measure gaps remain, then MAP should take action to follow-up with current measure developers to better understand why current measures are only specified and captured at a specific level of attribution. According to the Section 3014 of the ACA , MAP has appropriately not been charged with modifying measures outside the widely accepted NQF CDP. We are therefore concerned by the Families of Measures' reports that propose modifying measures for use outside of the use for which they have been endorsed. Specifically, the reports are recommending that some measures that are currently specified for the inpatient setting, be specified for use in the physician office setting. Such recommendations raise many questions around whether the evidence base supports changing the applicability of a measure from one setting to another. Furthermore, when a measure is endorsed by NQF, it is based on testing within a specific setting, e.g., physician office, inpatient. Recommending the measure be applied in a different setting would require the measure to reenter the NQF endorsement process, and the measure developer to conduct additional review of evidence base, development of new specifications, and additional testing. The MAP should further define how the current NQF endorsement criteria (and pending redesign) will interact with measures recommended by the MAP for use in different settings and at different levels of attribution.
General Comments	America's Health Insurance Plans	Carmella Bocchino	While we are supportive of these families of measures, we have a broad set of comments that apply across these and other families that the MAP recommends. First, we encourage continued measure harmonization where appropriate. For example, we are pleased with the efforts undertaken by the measure developers to harmonize measures in the areas of medication reconciliation and readmissions and encourage continued harmonization efforts moving forward. Second, families of measures selected and recommended by the MAP should minimize reporting burden. This can be accomplished by implementing a prioritized set of measures in the areas addressed in the report. Finally, ensuring consistency in measurement across different settings is critical. For example, the ambulatory surgery center patient burn measure should be consistent with the similar measure that is applied to inpatient settings. Such consistency can help reduce the measurement burden and confusion to users of these measures.

Comment Category	Commenter Organization	Commenter Name	Comment
General Comments	Association of American Medical Colleges	Jennifer Faerberg	The AAMC understands the concept of creating a measure family, however there is concern that a gap exists in understanding how these families will be operationalized in the various quality reporting programs. As these measure families are not designed to be the de-facto list of measures to be included in all programs, how will the MAP use these families to determine what measures are most appropriate for selection? Particularly, if these families do not offer a measure that is appropriate for a particular provider/setting/program then how should the measure workgroups determine what is is the next best option? Specific instruction should be provided to the measure workgroups on how to utilize the families in measure selection since this directly impacts their work for the pre-rulemaking process. Attribution and the unit of measurement can affect how well a measure fits within a program. In particular, there are differences between measuring health plans, facilities, individual clinicians or large clinician group practices. The report should highlight how attribution (when does a provider know which patients are being measured and what type of population is selected) and sample size can affect the reliability measures for different provider types.
General Comments	CAPC	Diane Meier	With regard to T.1 on p.61, we suggest that “end of life care” is not a useful construct for discussing patient preferences for care of serious illness. It fails because it assumes that there will be a point at which the physician or the patient will identify that the patient is at the end of his or her life, and that at that time a pre-determined plan should be applied, or a separate “end of life” decision making process should be employed. This does not happen. In the non-cancer population, prognostication is very difficult and imprecise, making it unlikely that a physician will be able to identify that a patient is near the end of her life, and patients do not self-identify this way. Therefore, an “end of life” plan or decision making process is never triggered. In actuality, the care plan and decision-making process employed at the end of a patient’s life is the same care plan and decision-making process that has been utilized all along. To improve quality of the former, you must improve quality of the latter. Because any descriptor, measure, or initiative that applies only to patients who have been identified as near the “end of life” would fail to capture the majority of people who die of serious illness, and because such “end of life” language elicits faulty thinking from stakeholders, we urge MAP to eliminate “end of life” language from all materials.

Comment Category	Commenter Organization	Commenter Name	Comment
General Comments	Children's Hospital Association	Ellen Schwalenstocker	The Children's Hospital Association recognizes the Families of Measure report as an important step forward. We suggest that both figures related to families of measures (as they appear in the MAP Strategic Plan 2012 -2015) should be included on page 2 as the "families of measures and core measure sets" figure provides important context to the "families of measures populating a core measure set and program measure sets" figure. With regard to gap-filling pathways, we agree in concept with the discussion on modifications to measures that appear to narrow in terms of population, setting, etc. However, we caution that expanding specifications of existing measures must be done carefully and is not simply a matter of extending age ranges, etc. A recent example with the global immunization measures highlights the importance of ensuring that all measure specifications (e.g., measure name, numerator description, applicable codes, etc.) be carefully reviewed and adjusted as necessary. A consistent approach for ensuring this evaluation through the NQF measure endorsement and maintenance process is essential. The table summarizing the acute cardiovascular conditions measures is helpful. It would be useful (and in keeping with the "family" approach) to develop a summary table for each family of measures (patient safety, care coordination).
General Comments	Children's Hospital Association	Ellen Schwalenstocker	As we noted in our comments on the MAP Strategic Plan, the Children's Hospital Association strongly supports revisiting the child health conditions and risks (included on page 88) to ensure the prioritization reflects the current evidence base. The Children's Hospital Association has commented previously on this list, noting the importance of cross-cutting (rather than condition-specific) areas, including children with special health care needs, which may include multiple chronic conditions. Although we recognize the enormous amount of work that went into the development of this document, we are very disappointed with the very short time allowed for submitting comments. Given the importance and potential implications of this document, the review and engagement of stakeholders is critically important.
General Comments	GlaxoSmithKline	Deborah Fritz	GSK strongly recommends MAP consider the concept of episode-based relative resource units (RRU) rather than cost or total cost of care. The RRU approach provides a better measure of efficiency in patient care than cost or utilization measures, because they reflect patient care across time and settings and encourage care coordination. GSK believes that reporting utilization rates or cost alone perpetuates and rewards component management by encouraging physicians to reduce utilization rates at a point-in-time rather than considering what may reduce utilization over the entire episode of patient care. For this reason, reporting total cost alone is also not meaningful in assessing plan performance, patient care or appropriate decision-making. Furthermore, GSK does not support the use of efficiency or utilization measures that cannot be directly linked to improvements in clinical outcomes. GSK believes measures of successful patient management including episode-based RRU, paired with quality performance measures, are better predictors of quality and plan performance. GSK also strongly recommends that resource use measurement initiatives focus on total patient care. GSK believes this will ensure that improvement to one aspect of care is not achieved at the sacrifice of something else.

Comment Category	Commenter Organization	Commenter Name	Comment
General Comments	GlaxoSmithKline	Deborah Fritz	GSK strongly recommends adding a Chronic Obstructive Pulmonary Disease (COPD) Family of Measures. A Family of COPD performance measures should address prevention, screening, diagnosis, treatment, comprehensive medication management, and outcomes many of which are addressed by existing NQF endorsed measures, specifically : 0091 COPD spirometry evaluation; 0102 COPD inhaled bronchodilator therapy; 0577 Use of spirometry testing in the assessment and diagnosis of COPD; 1825 COPD - management of poorly controlled COPD; 0028 Tobacco Use Assessment and Tobacco Cessation Intervention; 0577 Use of Spirometry Testing in the Assessment and Diagnosis of COPD; 0549 Pharmacotherapy Management of COPD Exacerbation. New COPD measures should be developed for COPD comorbidities patients usually present with including heart failure, pneumonia, osteoporosis, respiratory infection, myocardial infarction, angina, fractures and glaucoma, depression and/or anxiety and increased risk of diabetes among women with COPD (Terzano, Lung. 2010: 188:4:321–329; Kunik, Chest. 2005;127:1205-1211).Chronic obstructive pulmonary disease (COPD) is the fifth most common reason for hospitalization of Americans over 65 and the third-leading cause of death (Jemal, JAMA 2005;294:1255-1259; CDC, Deaths: Final Data for 2009. Vol. 60, No. 4, January 2012).COPD is associated with increases in healthcare resource utilization and spending (Dalal, Respiratory Medicine. 2011. 105:10:1516-1522).
General Comments	National Partnership for Women & Families	Tanya Alteras	The Consumer-Purchaser Disclosure Project is strongly suppportive of the efforts of the Cardiovascular and Diabetes Care, and Patient SAfety-Care Coordination task forces. We greatly respect the process that these representatives used in determining which measures were selected for their respective measure families. We do also understand that there were some issues and/or measures for which strong consensus was not always achieved, or areas that required greater clarification. In that spirit, we would ask that the final Families of Measures report reflect the fact that many members expressed the opinion that some recommended measures were not optimal due to the large gaps that existed. An example of this is in the area of Adverse Drug Events, which has significant gaps related to outcomes, patient-reported measures, and total number of ADEs. Thus, we ask that the final report clearly identify situations in which measures were reluctantly recommended by the Task Forces. In these situations, MAP should call for the sub-optimal measures to be reconsidered within a reasonably short time period, e.g. 1-3 years. At the same time, MAP should recommend that these gap areas be given high priority for measure development and endorsement.
General Comments	PhRMA	Jennifer Van Meter	PhRMA appreciates the importance of the MAP's work. We appreciate the opportunity to provide input into the process, including submitting comments about the Families of Measures report. However, the period for review and comments about the report is too short, especially since its development timeline is not subject to a federal deadline. We respectfully request additional time to supply meaningful, thoughtful comments during MAP's next open comment period. We also note that it may be helpful to the MAP to include a representative from the PQA on the Coordinating Committee since they have developed measures in some of the very areas that have been identified as gaps.

Comment Category	Commenter Organization	Commenter Name	Comment
General Comments	Premier Healthcare Alliance	Richard Bankowitz	With regard to the measures of hospital-wide complications that the MAP has proposed be adopted, the MAP correctly notes that these measures currently do not include the present on admission (POA) indicator. Premier feels this is a significant deficiency. In our own work, we have found the POA indicator to be indispensible in eliminating many false positive measures of complications. Premier is concerned that without the use of the POA indicator, these measures are likely to result in an unacceptably high rate of false positives, and Premier advises that implementation of a hospital-wide complication measure be deferred until such time as the POA indicator can be incorporated into the algorithms.
General Comments	Renal Physicians Association	Robert Blaser	RPA asks that MAP help clarify how its work to define families of measures differs from the NQF consensus development process. We would urge that the work between the two entities is coordinated and not duplicative. RPA urges caution in the MAP's decision to limit measures to only those that are NQF-endorsed. Doing so artificially limits the measures pool, inviting measure gaps. Additionally, it conflicts with section 1848(k)(2)(C)(ii) of the Affordable Care Act that provides an exception to the requirement that the Secretary select measures that have been endorsed by the entity with a contract under section 1890(a) of the Act (that is, the NQF). RPA supports CMS' option to select measures under this exception if there is a specified area or medical topic for which a feasible and practical measure has not been endorsed by the entity. RPA urges that the work of developing "families of measures" takes into consideration the notion of "fit for purpose." Analysis should be included in each taskforce report discussing how each measure listed in the family is relevant for the setting/program listed. RPA believes it would be helpful if MAP would focus more on "impact of burden" with regard to measure selection and use.
General Comments	Renal Physicians Association	Robert Blaser	RPA would like to reiterate that MAP using the "do not support" category for measures that did not have specifications, but were good concepts, sent the wrong message to payers, developers, and physicians. RPA, among other specialties who proposed various measure concepts to CMS were worried that the "do not support" would signal to the public that it is not a good concept, and therefore a non starter for development work. It is important that the "do not support" category not be misconstrued. Therefore, while it would be more work for the MAP, we would urge that measure categorization recommendations be further expanded. For example, instead of adding clarifying language to "do not support" which many will not read, the AMA suggests that MAP rephrase "support direction" to something like "support when completed" or "do not support, because lack of specifications." Additional categorizations, which allow the public to quickly identify where the measure concept stands in the MAP review process, would help do away with the negative perception that the measure concept itself is not supported.

Comment Category	Commenter Organization	Commenter Name	Comment
General Comments	Service Employees International Union	Dionne Jimenez	Direct care workforce related measures do not appear to be included in the Families of Measures, and we recommend that MAP include workforce related process and structural measures where they exist or, at a minimum, address the lack of measures as a priority for measure gaps for areas where they do not exist. Measures applicable to Home and Community Based Settings (HCBS), especially home care/personal care assistance, are not included in the Families of Measures, and we recommend that MAP recognize the importance of non-clinical care providers and caregivers in improving quality and outcomes by including measures applicable to long term care HCBS, wherever appropriate or at a minimum address the lack of measures as a priority for measure gaps. It should be clear that ultimate reporting and oversight should fall to clinicians and clinical providers since they have the authority and resources to ensure measure compliance by HCBS workers. Additionally home care/personal care assistance should be included as one of the care settings in the measure selection criteria interpretive guide. An appropriate assortment of process, structural, experience of care, cost/resource use/appropriateness and outcome measures do not appear to be recommended for all of Families of Measures topic areas. If there are not enough recommended process and structural measures, then health care providers may not know the best practices for achieving the right outcomes. Many of the recommended measures are hospital-centric, and the addressing measure gap work should emphasize creating an expedited process for endorsed measures to apply to different care settings.
General Comments	Service Employees International Union	Dionne Jimenez	MAP Cardiovascular and Diabetes Families of Measures 1. It appears that condition specific measures are not being recommended for the Safety and Care Coordination families of measures, but there are important measures for diabetes and cardiovascular disease related to care coordination and safety. As a result, one of the taskforces must address this area, otherwise there will be significant gaps. An example is measure 709, proportion of patients with a chronic condition that have potentially avoidable complication, which was considered by the safety taskforce but not recommended. 2. As noted on page 36, MAP did not select measures for post-acute and long-term care settings for the disease-specific families of measures due to the complex needs of patients in these settings. However, we recommend that the MAP reconsider their position and include measures for cardiovascular disease and diabetes for post-acute care and long term care settings since there is prevalence of chronic conditions in the patients and residents, so it is important that these settings are not ignored. 3. We suggest measures that study prevention or disease management for individuals with diabetes and cardiovascular disease include the role of HCBS providers (non-Home health). Home care/personal care assistance providers have regular access to patients, in many cases on a daily basis, and the system should leverage such roles by examining what interventions or monitoring may be done by home care workers.

Comment Category	Commenter Organization	Commenter Name	Comment
General Comments	Service Employees International Union	Dionne Jimenez	MAP Guidance for the Selection of Avoidable Admission and Readmission Measures 1. The Avoidable Admissions and Readmissions measures appear to ignore the skilled nursing setting. CMS recently launched an initiative pertaining to this topic, and avoidable readmission rates are used as a quality measure in the nursing home value based purchasing demonstration, so there should be an existing measure for the group to consider for recommendation.
General Comments	Service Employees International Union	Dionne Jimenez	It appears that condition specific measures are not being recommended for the Safety and Care Coordination families of measures, but there are important measures for diabetes and cardiovascular disease related to care coordination and safety. As a result, one of the taskforces must address this area, otherwise there will be significant gaps. An example is measure 709, proportion of patients with a chronic condition that have potentially avoidable complication, which was considered by the safety taskforce but not recommended. 2. As noted on page 36, MAP did not select measures for post-acute and long-term care settings for the disease-specific families of measures due to the complex needs of patients in these settings. However, we recommend that the MAP reconsider their position and include measures for cardiovascular disease and diabetes for post-acute care and long term care settings since there is prevalence of chronic conditions in the patients and residents, so it is important that these settings are not ignored. 3. We suggest measures that study prevention or disease management for individuals with diabetes and cardiovascular disease include the role of HCBS providers (non-Home health). Home care/personal care assistance providers have regular access to patients, in many cases on a daily basis, and the system should leverage such roles by examining what interventions or monitoring may be done by home care workers.

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General Comments	Service Employees International Union	Dionne Jimenez	MAP Care Coordination Family of Measures 1. HCBS workers that provide clinical and non-clinical long term care are largely absent from care coordination measures, despite the significant amount of care and time they spend with individuals with severe limitations and multiple chronic conditions, especially those dually eligible for Medicare and Medicaid. As a result of HCBS workers daily interactions with patients, they have greater access and knowledge of the day to day well-being and conditions of patients than many other providers, and their role in health outcomes for this population cannot be overstated. The MAP should consider the following measures to capture the impact of these HCBS workers in this setting on quality outcomes: a. Throughout the taskforce meetings, the MAP noted the lack of measures that speak to the interdisciplinary teams utilized under care coordination models. Any measures that are created to capture interdisciplinary team care should include HCBS workers, especially home care/personal care assistance caregivers, not just clinicians, and providers in hospital-based, post-acute and nursing home settings. The measure could capture the composition of a care team under the model, which could also be used in other families of measures to measure cost savings and resource use, and even system integration and accountability. It should be clear that ultimate reporting and oversight should fall to clinicians and clinical providers since they have the authority and resources to ensure measure compliance by HCBS providers. b. The MAP has included measures that capture communication across acute care settings, but does not include long term care, and especially HCBS, settings in this subgroup of measures. It's important to note that communication with these HCBS providers, like home care workers, is vital for effective care transitions and care plan execution because patients, especially those with severe conditions, and family members may not be able to appropriately communicate information accurately to paid caregivers. The MAP should identify or recommend a measure that would be able to capture this information flow between providers in HCBS and acute and post-acute settings in a meaningful way that produces quality outcomes for consumers/patients.

Comment Category	Commenter Organization	Commenter Name	Comment
General Comments	Service Employees International Union	Dionne Jimenez	MAP Safety Family of Measures 1. The MAP should address the structural and process measure gap for injuries from immobility, specifically the lack of measures related to appropriate workforce staffing, recommended amount of time to ambulate or reposition a patient, as well as monitoring processes in order to help produce better outcomes in the pressure ulcer area. (Only measures #0181 and #0201 are recommended, which are about outcomes regarding increase in number of pressure ulcers and pressure ulcer prevalence.) 2. The MAP should identify safety measures applicable to HCBS as a priority measure gap, especially for falls and pressure ulcers in the homecare setting. Although the home care provider or home health aide may not medically treat a pressure ulcer, the home care caregiver plays a role in helping to ambulate and prevent further stage progression of the pressure ulcer. 3. Although use of antipsychotics with patients that have dementia or Alzheimer's disease is listed as a priority gap area for Medication/ Infusion Safety, we suggest adding a measure of anti-psychotic overuse in nursing homes. CMS recently launched an initiative to reduce anti-psychotic use. In addition, the Nursing Home Compare system now reports the percent of short-stay residents who newly received an antipsychotic medication and the percent of long-stay residents who received an antipsychotic medication. As a result and keeping with the spirit of these policy efforts, there should be a related existing measure for the taskforce to recommend. This is not only a safety issue, but is applicable to the quality of life goals of the National Quality Strategy.
Safety		Jane Horvath	The information regarding overuse and appropriate use should more accurately reflect underuse in equal measure to overuse, as both need full consideration of 'appropriateness'.
Safety	American Association of Neurological Surgeons	Koryn Rubin	Patient Safety The American Association of Neurological Surgeons has issues with classifying NQF Measures 0052 and 0209 in the "Safety" category. While overuse of MRI imaging may lead to overuse of surgery or other invasive treatments, noting that MRI imaging is somehow a public safety concern is overreaching and inappropriate for measure 0052. Similarly, measure 0309 that limits use of ESIs to patients with radicular pain and with use of fluoroscopy is not quite a public health concern. The other members of this family relatively directly relate to patient safety issues, but not to the low back pain ones.
Safety	American College of Surgeons	Jill Shelly	The MAP applied measures according to their current measure specifications and recommended the measures be applied to other settings by re-specifying them for a new setting, testing the newly specified measures, and seeking NQF endorsement. However, ACS has concern about the validity of using measures which are specified for one setting but then applied to another. Therefore, to fill this gap, we urge the MAP to recommend similar measures which have been specified for other levels, if the measures exist. One example of this is NQF #0529: SCIP INF-3 Prophylactic Antibiotics Discontinued within 24 Hours After Surgery End Time (Non-Cardiac Procedures). Because this measure is specified at the systems level, we recommend that MAP also include NQF # 0271 Discontinuation of Prophylactic Antibiotics (Non-Cardiac Procedures) which is specified at the physician level. Furthermore, we also recommend that the MAP include an explanation on how the selected measures are relevant to each respective setting and program.

Comment Category	Commenter Organization	Commenter Name	Comment
Safety	American Medical Rehabilitation Providers Association	Sarah Nicholls	The MAP identified influenza vaccination coverage of healthcare personnel (#0431) as a measure that should be included in the safety measures family. Similar measures were considered by the MAP PAC/LTC Workgroup in 2011 as it developed a report to CMS on measures to be considered for future rulemaking. The workgroup felt these measures were not strong candidates for improving care delivered in inpatient rehabilitation hospitals and units (IRH/Us) but felt that in the absence of alternatives these measures were a starting point. AMRPA does not agree that vaccination of personnel is a good measure of quality. Staff vaccination coverage is a process measure which does not meet the MAP's stated goal of improving outcomes. Additionally, this quality metric is already addressed by the accreditation processes IRH/Us undergo through certification entities. This process is required by most payers as a condition of payment. For example, the Joint Commission requires organizations to vaccinate staff at increasing rates. To measure staff vaccination coverage through a quality reporting program would be redundant. Finally, AMRPA believes inclusion of this measure would conflict with the MAP's objective to develop a comprehensive yet parsimonious list of quality measures. We encourage the MAP to reconsider its support for this measure. AMRPA recommends NQF focus on developing quality measures that are more likely to yield data on quality and outcomes improvement.
Safety	America's Health Insurance Plans	Carmella Bocchino	In terms of measure gaps, we have several specific suggestions. First, for VRE outcome measures we suggest developing not only a metric that measures VRE and MRSA as a percent of blood culture results, but also a metric that assesses appropriate antibiotic selection to reduce the incidence of VRE and MRSA. Second, regarding obstetrical adverse events, we recommend developing separate metrics for normal birth and high risk birth if a particular complication is known to be significantly more prevalent in high risk than in normal risk cases. An alternative to this approach would be a single metric that could capture obstetrical adverse events for both normal birth and high-risk cases with appropriate risk adjustment. Additionally, we recommend the following complications specific to obstetrical deliveries be included in an overall obstetric complications composite measure: vaginal tears, excessive bleeding requiring transfusion, and newborn complications related to delivery. Other complications less specific to delivery such as post-op (e.g., post-delivery) DVT, PE, and infections could also be included.
Safety	AstraZeneca	Kathy Gans-Brangs	In the discussion in this section and in several places in the appendices related to overuse and appropriate use, we note that often appropriateness is tied to decreasing overuse. While we agree that health care services, including medications, should be used appropriately, we caution that appropriate use can involve both overuse and underuse of medication. We recommend that both aspects of appropriate use of medication be considered.

Comment Category	Commenter Organization	Commenter Name	Comment
Safety	CAPC	Diane Meier	CAPC commends MAP for including pain management as an aspect of safety, and urges additional symptom management—including dyspnea and depression—to be treated similarly. There are several NQF endorsed measures available for these issues. However, like the pain measures, they are narrowly tailored to specific populations and/or settings. We agree that the pain measures noted should be expanded to additional populations and settings, but are concerned that the lack of funds for measure testing, and the difficulty of getting NQF endorsement for broad measures that cross populations and settings, will prevent this goal from being realized. Accordingly, we reiterate our concern that rigid NQF endorsement criteria continues to serve as a prerequisite for measures selection even when the relevant measures likely apply to broad populations across care settings.
Safety	Children's Hospital Association	Ellen Schwalenstocker	The Children's Hospital Association appreciates the opportunity to comment on the MAP Family of Measures document. With regard to the patient safety measures, it would be helpful to reflect consistently on the selection of priority gap areas in the document. For example, it is not clear why blood incompatibility and air embolism were considered as gap areas under medication safety. The Association agrees with the recommendation regarding need for measures related to use of radiographic imaging in the pediatric population.
Safety	Genentech	Darren Tayama	Genentech supports the MAP's recommendation to expand measure #0139 beyond its current settings. The measure was originally specified for the ICU setting but would better support the safety of care if expanded. CLABSIs are among the most common HAIs and remain a significant cause of morbidity and mortality in the hospital setting, accounting for nearly one-third of HAI-related deaths. It is estimated that 80,000 CLABSIs occur in the ICU annually in the United States; (2,3,4) however, approximately twice this many CLABSIs occur in hospitalized patients outside of the ICU. (3,4) Prevention of CLABSIs has greater impact on patient morbidity and mortality than waiting to treat CLABSIs that arise. One study estimated that nearly 70% of CLABSIs are preventable with evidence-based tactics; (5) other studies demonstrate similar rates of reduction, suggesting such ambitious risk-reduction is feasible. Genentech hopes that MAP's recommendation will result in CMS incorporating the measure into programs such as the Hospital IQR program and others with expanded use in non-ICU settings. (1)http://www.hhs.gov/ash/initiatives/hai/introduction.html.; 2Mermel LA. Ann Intern Med. 2000 Mar;132(5):391 402; (3)http://www.jointcommission.org/assets/1/18/CLABSI_Monograph.pdf; (4)O'Grady NP et al, *Am J Infect Control*. 2011 May;39(4 Suppl 1):S1-34; (5)Umscheid CA et al, *Infect Control Hosp Epidemiol*. 2011 Feb;32(2):101–114.
Safety	National Partnership for Women & Families	Tanya Alteras	Healthcare-Acquired Infections: Of all the measures in this category, these four outcome measures are critical to improving patient safety and outcomes: 1) Catheter-associated Urinary Tract Infection; 2) Central-line Associated Bloodstream Infection; 3) MRSA; and 4) Clostridium difficile. We fully support their inclusion in the patient safety family of measures, and agree with the MAP's findings that they should be expanded beyond current settings: We also support all of the priority gap areas identified. We note that there were some measures considered for this category that were not included in the final family, but that we support further discussion on: 1) ventilator-associated pneumonia for IU and high-risk nursery patients; and 2) Surgical site Infection for certain elective procedures, such as orthopedic surgeries and bariatric surgery.

Comment Category	Commenter Organization	Commenter Name	Comment
Safety	National Partnership for Women & Families	Tanya Alteras	Medication/Infusion Safety: Of the measures selected for the family in this category, we strongly support the following: 1) Documentation of Current Medications in the Medical Record; 2) Medication Reconciliation Post-Discharge. Two measures that were considered by the task force and not included in this family, but which we had liked to have been included, are the AHRQ PSIs 13 and 16, Transfusion Reaction for adults and pediatrics, respectively. We also would like to note that there are several measures in this category that we feel are not as meaningful for consumers and purchasers and may result in "check-the-box" efforts, rather than true quality improvement and improved outcomes. These measures include 1) Reconciled Medication List Received by Discharge Patients; 2) Medication Information; and 3) Drugs to be Avoided in the Elderly. Finally, we strongly support the inclusion of patient reported measures of understanding medications in the priority gap area list.
Safety	National Partnership for Women & Families	Tanya Alteras	Pain Management: We strongly support two measures that were selected for this category: 1) Improvement in Pain Interfering with Activity; and 2) Patients Treated with an Opioid who are Given a Bowel Regimen. While we are strong advocates for appropriate hospice and palliative care, we do not feel that the measures of pain screening and assessment in the hospice and palliative care settings that were included will provide meaningful information on patient's care. We consistently advocate for measures that not only indicate whether a screening/assessment was conducted, but also require the provider to indicate what was done to assist the patient. Obviously in the case of palliative and hospice care, the outcome of an assessment or screen will not be geared toward curing the patient, but we feel that these measures lack the necessary component that indicates whether efforts were made to alleviate pain and make the patient comfortable. This concern is reflected in the priority gap area list, which we appreciate.
Safety	National Partnership for Women & Families	Tanya Alteras	Venous Thromboembolism: We fully support all of the measures, and the priority gap areas, selected for this category. Perioperative/Procedural Safety: Overall we support the measures in this category, but would have liked to see the task force also include PDI 5 (Iatrogenic Pneumothorax in non-neonates) and PSI 6 (Iatrogenic Pneumothorax). We also agree with the MAP's recommendation that all of the measures in this category be expanded to include additional settings, and that the safe surgery checklist be brought to NQF for endorsement. This is particularly important, to ensure that the checklist that institutions use is comprehensive enough to promote and improve safety.

Comment Category	Commenter Organization	Commenter Name	Comment
Safety	National Partnership for Women & Families	Tanya Alteras	Injuries from Immobility: Our concern in this category is not necessarily with any of the discrete measures, but with the potential for confusion among implementers over the multiple measures that address similar situations. We believe that in this category, the language around the priority gap areas be strengthened to reflect concerns about the cacophony of falls and pressure ulcer measures across different settings, using different data and time periods, and how this multitude of measures may stifle improvement. We also are disappointed by the exclusion of the measure of Fall Risk Management in Older Adults in this category. Safety Related Overuse and Appropriateness: We support the measures selected for this category. Obstetrical Adverse Events: We support all the measures selected for this category, and particularly applaud the task force for including Elective Delivery Prior to 39 Completed Weeks Gestation; C-Section; and Healthy Term Newborn. Complications-Related Mortality: We support the measure "Death among Surgical Inpatients with Serious Treatable Complications." However, we would have also liked to see the task force include "Patient Safety for Selected Indictors," and "Pediatric Patient Safety for Selected Indicators" in this category.
Safety	Pharmacy Quality Alliance	David Nau	PQA is pleased that the MAP identified medication safety as an important area for measurement. We are supportive of the measures identified for medication/infusion safety; however, we also want to make the MAP aware of several PQA performance measures that may help to fill the priority gap areas identified by the MAP. PQA has developed, tested and endorsed several measures related to the gap areas identified in Table 3. These include measures of drug-drug interactions, comprehensive medication reviews and the use of antipsychotics in older adults with dementia. The antipsychotic measure is currently under consideration by the NQF neurology committee and its dementia sub-committee. The PQA performance measures related to drug-drug interactions and comprehensive medication reviews are currently used by the Centers for Medicare and Medicaid Services (CMS) as part of the Medicare Part D Display Measure Set. Thus, there is a growing amount of evidence related to these PQA-maintained measures that could support endorsement by NQF. If desired, PQA can submit these measures, and the accompanying evidence, to the NQF for endorsement consideration. Furthermore, PQA has developed a measure related to community pharmacist involvement in post-discharge medication reconciliation and also developed a framework for future development of measures related to overuse of medications.

Comment Category	Commenter Organization	Commenter Name	Comment
Safety	PhRMA	Jennifer Van Meter	The MAP identified two gaps in safety—a measure about comprehensive medication review and a measure about use of antipsychotics with patients who have dementia or Alzheimer's disease. The PQA has adopted measures related to both topics that may suit the MAP's current needs. However, we do point out that neither has completed the NQF endorsement process yet, so they are not ready for immediate recommendation. In the discussion about overuse and appropriate use, PhRMA notes that often appropriateness is tied to reduction of overuse. While we agree that health care services, including medications, should be used appropriately, we caution that appropriate use is not always less use; sometimes, appropriate use means more use, or rectifying underuse. There are instances when underuse can also lead to safety issues. We think a more balanced view of this aspect of safety is needed.
Safety	Providence Health & Services	Marly Christenson	Providence Health & Services is in support of the overall approach to families of measures and is pleased to see noted attention to organizational culture as a priority metric for safety. In general, the various MAP safety measures are in line with priority areas and critical functions. Where we do see a gap, however, is in the measure of harm in a more global manner. The ability to capture evidence of harm that is not dependent on voluntary reporting or documentation and coding is essential to fully grasp the scope of harm we inflict on those we serve, and then guide an effective approach to improvement. There is need for a standard and reliable measure that represents patient safety, and it is known the trigger method can detect far greater number of events than traditional methods. We request further consideration for this approach in the MAP strategic plan for safety measures as they move forward. Providence is a strong proponent of the trigger methodology utilizing patient health record review, and believes this should be a cornerstone of patient safety performance measurement.
Care Coordination (including Readmissions)		Jane Horvath	Prevention and Treatment—Cardiovascular Conditions and Diabetes The discussion on cost measures needs further review and linkage to quality measures that can serve as a paired framework. Use of cost measures as presented may be applied inappropriately if context of cost and quality is not supported. Specifically, the NQF-endorsed Relative Resource Use measures are condition specific cost and quality measures. The MAP discussion of measure gaps for diabetes should be linked to cardiovascular measures and/or gaps as a concept for family of measures as outcomes associated with diabetes care. In addition, the PQA's adherence measures that are NQF-endorsed would be a recommendation to include in this family of measures.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	American College of Emergency Physicians	Stacie Jones	American College of Emergency Physicians (ACEP) appreciates the opportunity to comment on the MAP Families of Measures that affect the emergency department (ED) patients we serve. With over 136 million ED visits in 2009, nearly half of all hospital admissions transferred from the ED. ACEP continues to support measures of safety and care coordination via the ED throughput measure set. The MAP noted that measures in the care transitions family address the question: "Did the patient get to the next needed site of care?" From ACEP's perspective, when acutely ill patients are boarded, and do not get to their inpatient bed for hours or days, they are not getting to the next needed site of care. Timeliness is also an important outcome in the ED. The MAP noted that certain measures were included "to assess timely transitions, stressing the high-impact and time-sensitive nature of treatment for AMI." ACEP concurs on this point, but would note that all patients who are admitted to the inpatient site of care are admitted because they are acutely ill. ACEP looks forward to continuing an ongoing dialogue with the MAP and we will be forwarding a comment letter with supporting citations via email on September 10.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	American College of Emergency Physicians	David C. Seaberg	On behalf of more than 30,000 members, the American College of Emergency Physicians (ACEP) appreciates the opportunity to comment on the MAP Families of Measures that affect the emergency department (ED) patients our members serve. With over 136 million emergency department visits in 2009 and nearly half of all hospital admissions transferred from the emergency department, patient safety and care coordination serve as the foundation of clinical care throughout the ED. We would also like to thank you for the opportunity to provide ACEP comment on the importance of the NQF Endorsed ED Throughput measures #0495, #0496, and #0497: #0495: Median Time from ED Arrival to ED Departure for Admitted Patients (CMS: ED-1a-d) #0496: Median Time from ED Arrival to ED Departure for Discharged ED Patients (CMS: OP-18) #0497: Median Time from Admit Decision Time to ED Departure for Admitted Patients (CMS: ED-2a-c) ACEP continues to support measures of safety and care coordination via the ED throughput measure set. As you know, the practice of keeping admitted patients on stretchers in hospital emergency department hallways for hours or days, called "boarding", causes emergency department crowding. In 2006 the Institute of Medicine (IOM) declared "crowding", when the number of patients exceeds the treatment space capacity, to be a "national epidemic". A review of the recent report leads us to believe the MAP may have assumed that these measures only monitor "internal efficiency"; however, ED crowding and boarding are not ED-exclusive problems. Rather, these problems are a symptom of dysfunction of the broader healthcare system. We acknowledge that a stubborn misperception exists that ED crowding results from uninsured patients seeking routine care in the ED. However, the IOM and the Government Accountability Office now recognize that ED crowding is caused by patient outflow obstruction: an inability to move admitted patients to inpatient beds in a timely manner. Given the evidence, we urge the MAP to re-consider its assessment of the ED throughput measures. If helpful, we would be delighted to provide additional literature on this matter. Crowding is also associated with higher morbidity and mortality, delayed pain control, and inferior health care. Strategies which optimize bed management reduce boarding by improving the efficiency of hospital patient flow, but these strategies are grossly underused. Convincing hospital leaders of the value of such solutions and incorporating these measures into hospital payment determinations may promote improvements. ACEP noted that the measures the MAP included in the care transitions family attempted to address the question related to successful transition: "Did the patient get to the next needed site of care?" The report also states that few available measures address that question. ACEP would like to call your attention to the fact that 500,000 ambulances are diverted from emergency departments each year due to boarding and crowding, which significantly jeopardizes patients' ability to get to their next site of care alive. Likewise, when acutely ill patients are boarded in hallways outside the ED and do not get to their inpatient bed for hours or days, they are not getting to the next needed site of care. Therefore, we strongly urge the MAP Coordinating Committee to retain the ED Throughput measures in the MAP Families of Measures for Safety and Care Coordination. ACEP also noted that many measures use time as the primary outcome to determine if a transition was successful. We noted that the MAP recommended that the transition measures look beyond just timeliness and include quality of the communication with the patient and caregiver.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	American College of Emergency Physicians	David C. Seaberg	We agree with the MAP's assessment and the MAP's inclusion of NQF #0649/CMS OP-19: Transition Record with Specified Elements Received by Discharged Patients. We continue to support this NQF-endorsed ED specific transition record measure as an essential part of an overall care coordination strategy. Notwithstanding the above, timeliness is also an important outcome in the emergency department as it is a surrogate for morbidity and mortality. The slogan "the right care, for the right patient, at the right time" is key to improving the quality, efficiency, and value of care delivered throughout our healthcare system. Nowhere is the domain of timeliness more important than in the ED. Timeliness is key for almost all of the NQF Endorsed measures relevant to emergency care such as: • Median time to fibrinolysis (NQF 0287) • Fibrinolytic therapy received within 30 minutes (NQF 0288), and • Median time to transfer to another facility for acute coronary intervention (NQF 0290). The MAP noted that these measures were included "to assess timely transitions from one facility to the next, stressing the high-impact and time-sensitive nature of treatment for AMI." ACEP concurs with the MAP on this point. However, we would also like to highlight that AMI is not the only high-impact and time-sensitive condition we encounter in the ED. No patient should be boarded in hallways for hours or days, particularly those with multiple conditions who can rapidly deteriorate if they do not receive the specialty care that they need on the wards, the floors, and the ICUs in a timely manner. Emergency department physicians, nurses, and staff specialize in stabilizing patients until they can get to their next site of care. We urge the MAP to consider that all patients who are admitted to the inpatient site of care are admitted because they are acutely ill and not for frivolous reasons. Patients who are not acutely ill are discharged to home or the appropriate ambulatory, skilled nursing, or home health provider. The MAP also raised concerns about the subjectivity of the timing component required to calculate these measures. We concede that the "admit decision time" required for measure #0497 may be a softer point in time depending on whether the data abstractors are reviewing the emergency department information systems (EDIS) or the hospital medical records, which are often two separate systems. Given this concern, we would understand if the MAP preferred to only move forward with measures #0495 and #0496 that contain only hard end points in time, and therefore, are completely objective and not subject to gaming. As stated previously, ACEP members are committed to care coordination including communication. We noted that the MAP included five communication measures #0291, #0294, #0295, #0296, and #0297. While ACEP supports the overall direction of these measures, we do not have enough information about the measure specifications to evaluate them. Given varying systems it is unclear if this measure is even feasible without test data. Also, since the Emergency Medical Treatment and Labor Act (EMTALA) already requires this information be communicated to the receiving hospital for every patient who is transferred from an ED to another acute care facility, we are unaware of a gap in care in this area. ACEP would be pleased to review a measure information form during the next maintenance cycle or review any data regarding gaps in care on this subject.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	American College of Emergency Physicians	David C. Seaberg	We recognize the behemoth task of reviewing the entire NQF portfolio within such a short time frame. As emergency medicine encompasses nearly every clinical condition, patient safety issue, and care coordination concern, we often struggle with the same deluge of reviews. We greatly appreciate the work of the MAP, as well as the opportunity to provide comments on the MAP Families of Measures. We look forward to an ongoing dialogue with you. References: 1. Centers for Disease Control and Prevention. National Hospital Ambulatory Medical Care Survey Emergency Department 2009 Factsheet. Accessed on: September 6, 2012. Accessed at: http://www.cdc.gov/nchs/data/ahcd/NHAMCS_Factsheet_ED_2009.pdf. 2. Owens, P. and Elixhauser, A. Hospital Admissions That Began in the Emergency Department, 2003. Statistical Brief #1. February 2006. Agency for Healthcare Research and Quality, Rockville, MD. http://www.hcup-us.ahrq.gov/reports/statbriefs/sb1.pdf 3. Institute of Medicine. Hospitalbased emergency care: at the breaking point. Washington (DC): National Academies Press; 2006. 4. Rabin E, Kocher K, McClelland M, Pines J, Hwang U, Rathlev N, Asplin B, Trueger NS, Weber E. Solutions to emergency department 'boarding' and crowding are underused and may need to be legislated. Health Aff. 2012 Aug;31(8):1757-66. 5. Government Accountability Office. Hospital emergency departments; crowding continues to occur, and some patients wait longer than recommended time frames.Washington (DC): GAO; 2009. (Pub. No. GAO-09-347). 6. Bernstein SL, Aronsky D, Duseja R, Epstein S, Handel D, Hwang U, et al. The effect of emergency department crowding on clinically oriented outcomes. Acad Emerg Med. 2009; 16:1–10.
Care Coordination (including Readmissions)	American College of Surgeons	Jill Shelly	ACS does not support the inclusion of NQF #1789 until the measure is better understood and evaluated. This measure is very broad with respect to populations evaluated and yet constrained to one outcome of uncertain meaning, therefore running contrary to "state of the art" modeling considerations for focusing carefully on patient subgroups and the risk factors and outcomes that are relevant to targeted subgroups. As a result, meaningful performance distinctions between different institutions for certain subpopulations appear likely to be clouded does not provide actionable data. It is well known in most medical disciplines that focused risk adjustment algorithms, applied to focused patient populations, perform the best. Additionally, this measure assumes that all readmissions are associated with poor quality and are therefore preventable for all causes. However, there is not sufficient evidence to support this argument and therefore further investigation is needed. ACS opposes this measure for use in performance-based payment. The measure lacks consideration of socioeconomic factors or other resource issues, and could lead to further disadvantaging of already heavily burdened institutions. We also oppose the use of this measure for public reporting purposes and encourage the MAP to make a distinction that measurement that is valid for QI does not always translate to validation of the measurement for public reporting.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	American Medical Rehabilitation Providers Association	Sarah Nicholls	AMRPA recognizes the importance of addressing preventable admissions or readmissions for reducing cost and improving the quality of care delivered to patients. In addition, CMS has taken a keen interest in developing such measures for inpatient rehabilitation hospitals and units (IRH/Us). However, the development of such measures should proceed cautiously to ensure that healthcare providers are not negatively impacted by readmissions that were planned, unrelated to the original admission, or were the result of factors outside the provider's control. Strict attention should be paid to the definition of readmission, including planned and unplanned; the observation window; stratification based diagnosis; and denominator data including age any co-morbid conditions such as cancer. Readmission quality metrics should also be risk adjusted. In addition, such policies should consider the unique patient population treated by IRH/Us. For example, IRH/Us treat fewer patients annually when compared to their acute hospital counterparts from which most of the analysis on readmissions has been conducted to date. Therefore, the development of a readmissions policy for IRH/U should use several years of data to ensure a robust sample on which to base such a measure. AMRPA's Quality Committee has undertaken extensive deliberation of issues related to readmissions since at least 2009 and that we would be happy to share with the MAP upon request.
Care Coordination (including Readmissions)	American Psychiatric Institute for Research and Education	Robert Plovnick	We agree, communication measures must include bi-directionalality , and are pleased MAP recognizes the need for continued development of health records that use common data elements. We support using patient-experience measures provided quality of care isn't measured on patients' lack of response, nor should physician's be penalized for poor rates of reporting due lack of response. Considering capacities for certain patient populations to self report, adjustment for response bias is necessary. Table 12 includes measure #1789;the exclusion criteria states "Admissions for primary psychiatric disease Rationale:Patients admitted for psychiatric treatment are typically cared for in separate psychiatric or rehabilitation centers which are not comparable to acute care hospitals."Per the Pre-voting Consensus Report the measure steward, CMS, was asked to "incorporate psychiatric patients into their measure because of possible implications of the readmission rates for patients with comorbid psychiatric disorders.CMS agreed to evaluate the impact of including patients with psychiatric conditions in the medicine cohort or creating a sixth cohort."Due to the large population it will exclude, we feel that it should be removed from this measure family until updates are made. We agree that NQF #0557 and NQF #0558 as composite measures the data will be richer and care more well-rounded.
Care Coordination (including Readmissions)	CAPC	Diane Meier	CAPC applauds MAP's attention to patient engagement, the importance of care plans that address psychosocial needs and functional status, and the importance of community supports for providing the right level of care.We hope MAP will continue to develop work in this area.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	Children's Hospital Association	Ellen Schwalenstocker	The Children's Hospital Association appreciates the discussion of the need to exclude planned and unrelated readmissions from avoidable readmission measures. We would be interested in knowing if the billing codes described on page 23 are currently included in the measure specifications for all-cause readmission measures. We also agree with the importance of carefully assessing the implementation of these measures to avoid unfairly penalizing safety net hospitals serving vulnerable populations and with the use of a range of balancing measures. The logic regarding the system and infrastructure support medical home measures seems inconsistent. For example, the Medical Home System Survey measure (1909) is included, but does not include a child composite, while the Medical Home for Children and Adolescents measure (0724) measure is not included - apparently because it addresses only the pediatric population.
Care Coordination (including Readmissions)	National Partnership for Women & Families	Tanya Alteras	Avoidable Admissions and Readmissions: We support all of the measures selected for inclusion in this category. At the same time, there are a number of measures that were considered by the task force but not included, which we feel should be considered, including: 1) PQI-8: Congestive Heart Failure admission rate; 2) PQI-12: UTI admission rate; and 3) 30-day all cause readmission following hip or knee replacement. The first two measures are indicators of whether primary care is available in a community and can provide meaningful information on whether an index hospitalization took place, while the third measure reflects a high-cost, high-volume procedure for which outcomes could stand significant improvement. System and Infrastructure Support: We support the Medical Home System Survey that was selected in this category, but are disappointed that two additional measures of system and infrastructure support were not selected: 1) Ability for Providers with HIT to Receive Lab Data Electronically onto a Qualified/Certified EHR; and 2) Tracking of Clinical Results Between Visits. We believe that both are meaningful structural measures that should be considered.
Care Coordination (including Readmissions)	National Partnership for Women & Families	Tanya Alteras	Care Transitions: There are a number of measures in this category that we support, including the following: 1) the 3-Item Care Transitions Measure (CTM-3); PICU Unplanned Readmission Rate; and 3) the 30-day post-hospital discharge care transition composite measures for AMI, Heart Failure, and Pneumonia. We are less supportive of the other measures included in this category that perhaps reflect efficiency of care delivered, but are not true measures of care transitions. Finally, we are disappointed with the exclusion of "Children with Special Health Care Needs who Receive Services Needed for Transition to Adult Health Care" from this category. Children with special health care needs are an overlooked population, and this is a meaningful measure for many families. We support all of the measures selected for the Communications, Care Planning, and Patient Surveys Addressing Care Coordination categories.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	Premier Healthcare Alliance	Richard Bankowitz	Specifically none of the models addresses such important factors as health care literacy and access to care, a proxy for which may be socio-economic status which has been shown to be correlated with readmission rates. Furthermore identifying unnecessary readmissions is a complex task as the NQF Board of Directors stated in its guidance language that it specified should accompany the use of this measure. Premier agrees with the recommendation of the MAP that program implementers should consider adjustment to payment to address equity issues. Furthermore it is important that hospitals be compared fairly within like strata. This was precisely the recommendation of the NQF task force which originally reviewed this measure. Hospitals face wide disparities with regard to the factors identified in the NQF BOD statement above, and it is important that both payment and comparisons reflect that fact. In addition Premier agrees the MAP that it is important to monitor for the existence of unintended consequences with the implementation of this measure. Furthermore, although Premier agrees it is useful to focus on a measure of all cause readmissions as a parsimonious measure of care coordination, we are concerned that such a broad measure may not be actionable. The individual population measures have the advantage of being more likely to provide specific, actionable data to institutions and may therefore be more useful than the broad measure of all cause readmissions.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	SNP Alliance	Richard Bringewatt	On August 27, 2012, the National Quality Forum published a draft MAP Family of Measures for public comment. The document contains recommendations for aligning performance measurement across public and private sectors to encourage delivery of patient-centered care, reduce data collection burden, and advance a more comprehensive picture of quality. The report contains recommendations for a family of care coordination measures, building on the NQF's prior consensus report on measuring and reporting on care coordination. The Report targets a set of high-leverage opportunities provided through the application of existing measures and recommendations for filling gaps in performance measurement where existing measures and methods are lacking. These recommendations were developed through NQF staff analysis plus deliberation of the 40-member Safety/Care Coordination Task Force, including representation of the SNP Alliance. Following is a summary of comments provided by members of the SNP Alliance on the recommendations outlined on page 17-34 of the Report, within the time constraints available, given short turnaround time. Overall comment on Themes and Background Discussion 1. The general discussion provides a useful summary of the constraints and opportunities presented by existing performance measurement of care coordination activity. The Alliance is particularly supportive of the person-centered, system-orientation of the discussion, with full recognition of the provider-centric orientation of most measures. This includes reference to the predominant use of measures for monitoring care coordination between hospital and post-hospital care providers, with little regard for active involvement of other providers that cross the lifespan and care settings of persons in need. The Alliance in particularly appreciative of the Report's recognition of successful care coordination needing to engage the entire health system in care coordination activity in "promoting wellness and preventing, delaying, and/or minimizing the progression of disease and disability as a person's care needs evolve over time and across settings." 2. While we support the concept of "shared accountability" in advancing successful care coordination activity, we do not believe current payment, practice, and measurement methodologies are able to fully address core issues of importance to successfully advance shared accountability for collective behavior right now. Also, while SNPs and other Medicare Advantage plans are uniquely qualified to assume an important role in advancing shared accountability endeavors because of their global capitation arrangements, most people with the greatest need for care coordination support, e.g. frail elders, adults with disabilities, and persons with complex medical conditions, receive services from an array of care providers which are not generally under contract with a given health plan, including family caregivers and a host of long- term care, community-based, non-medical providers—all of whom effect a person's collective care outcome. Many SNPs and MA plans also do not have contractual relationships where providers under contract constitute a critical mass of a plan's enrollment sufficient to influence provider behaviors. There also are many difficulties involved, under all circumstances, in collecting timely and appropriate information important to advancing shared accountability.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	SNP Alliance	Richard Bringewatt	As a result, the SNP Alliance believes shared accountability endeavors are important to address but NQF should focus primarily on gap filling endeavors that involve the spectrum of plan, provider and policy decision-makers: a. Changing their thinking from treating symptoms and problems in specific places, at a specific points in time, to treating longitudinal, multidimensional care episodes for defined populations; b. Changing provider and intervention-based evaluation metrics to multi-variant, time-sensitive, quality improvement methods focused on improving collective performance of related providers; and c. Realigning incentives among related primary, acute, long-term care, and behavioral health providers to doing what is necessary, in the collective, to change the normal trajectory of a person's illness or injury...to bend the cost curve and improve care outcomes by bending a person's disease and disability trajectory. All of this takes time but is central to successful advancement of a shared accountability concept consistent with the person-centered, system-oriented approach proposed by the National Quality Forum. 3. While focusing on reducing avoidable hospital admissions and readmissions may be useful in the short-term, neither our provider system nor our measurement systems are fully able to appropriately hold the right provider or combination of providers accountable for reported deficiencies. Many of the issues associated with this effort are the same as those related to advancing shared accountability outlined above. All the nuances involved in adjusting for different risk levels for different populations, differences in program and reporting requirements for providers involved in serving the same person, differences in the type and scope of financial accountability and variances in contractual oblations, etc. case great difficulty in holding the right player or set of players accountable for a given outcome. As a result, the SNP Alliance supports moving toward increased reporting of hospitalization rates and emergency room visits, as well as for adverse drug events, long-stay nursing home use, and consumer satisfaction, but with strengthened use of risk adjustment methods so that appropriate observations of differences in outcomes can be made for various populations segments, using more of a continuous quality improvement approach to performance improvement rather than use of financial penalties or rewards for performing at some predetermined level. 4. While it is clear there are major gaps in the current pool of metrics for care coordination, we believe improving care transitions provides an important high-leverage opportunity for advancing the overall cause of care coordination and related efforts to enable shared responsibility for collective action among related care providers. This is particularly important to improving care outcomes for high-risk/high-cost beneficiaries, where collective action is central to meeting their multidimensional, interrelated and ongoing care needs. The SNP Alliance would welcome the opportunity to work with the NQF to identify and test various options for improving care transitions, including options for advancing the cause of shared accountability as a central theme to an overall care coordination strategy.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	SNP Alliance	Richard Bringewatt	Regarding Selection of Specific Care Coordination Measures The SNP Alliance wants to clarify in furthering these comments that Special Needs Plans are already accountable for an array of program and reporting requirements that are not required of other MA plans or among fee-for-service providers involved in serving the same person and who require "someone" to help them coordinate their care. This includes additional Medicare and Medicaid reporting requirements. While we recognize and support NQF's commitment to parsimonious use of measures, we are concerned about a further layering of additional reporting requirements on Special Needs Plans. Within this context, the SNP Alliance offers its support for the general direction of the MAP Report, with all the cautions and caveats contained in the report, with particular note of the degree to which existing measures are hospital-centric and don't involve many aspects of importance to most people requiring care coordination support. We also offer the following comments on the six care coordination topic areas identified as the focus for care coordination measurement. 1. Avoidable Admissions and readmission measures a. The SNP Alliance supports general use of the plan all-cause re-admissions measure, assuming the measure is fully adjusted for risk associated with serving various population groups, such as frail elders, adults with various disabilities, persons with late-stage and/or complex medical conditions, persons with co-morbid illnesses, etc. b. We do not believe the other measures noted are of the same level of importance for Special Needs Plans, and in some cases are inappropriate for SNPs. 2. System and infrastructure support a. The SNP Alliance supports selection of the Medical Home System Survey measure, recognizing that further adaptations must be made to the measure in order to address issues of unique importance in: a) serving persons with complex medical conditions; b) involving a more robust array of primary, acute, long-term care and behavior health providers; and c) using a more diversified interdisciplinary care team than what is assumed under the current definition. b. While this serves as a useful "starting point" in addressing issues of system and infrastructure support, we want to emphasize that the integration of care networks involves a number of other issues of critical importance, including those outlined in our Gold Standards Framework. (See attached) 3. Care transitions a. The SNP Alliance generally supports the areas of measurement for the 3-item care transition measure (CTM-3), but finds the data collection process and methods challenging. We also note its limitations in measuring care for persons who are frail and/or have cognitive or memory impairment, as well as persons with severe and persistent mental illness. b. The "timeliness" measures, e.g. 30-day post-hospital composite measures, are important, but measures need to be modified to be more in keeping with the unique set of issues and conditions of the patient being discharged. c. The SNP Alliance also believes that more emphasis must be given to the "content" of care transitions and not assume that any "planned" transition is good, and any "unplanned" transition is bad. Any transition can result in poor outcomes if the "content" of the transition itself is not properly managed. This is particularly true for persons with complex drug regimens and persons with compromising conditions, such as frailty, disability, and co-morbid illnesses, poverty, language and cultural differences, living environmental issues, etc. that are not directly associated with a person's reason for hospitalizations, e.g. stroke or hip fracture.

Comment Category	Commenter Organization	Commenter Name	Comment
Care Coordination (including Readmissions)	SNP Alliance	Richard Bringewatt	4. Communication a. While we appreciate and support NQF's interest in monitoring provider-to-patient and provider-to-provider communication, we think the existing array of measures significantly underrepresents the issues of most importance. We do not believe that simply combining the five provider measures is adequate for the task at hand. b. We support the need to "move beyond current checkbox measures of communication" to making sure the "right information" is being communicated, at the "right time" in the "right place." c. We also concur that measures need to be more fully responsive to the needs of those with "multiple chronic conditions, frailty, disability, or other medical complications." This is not an easy task but critical to the overall effort. 5. Care planning a. While we appreciate and support NQF's interest in greater involvement of patients and caregivers in the care planning process, we believe the content of the care planning process needs to be more reflective of the totality of a person's interrelated care needs and related services of importance to them. This includes a much broader array of issues that those associated with a person's medical concerns, including those related to a person's end of life preferences, as noted. b. We believe more attention should be given to the use of a common care plan among related care providers, including use of a "principal care manager" working with and on behalf of a person throughout any given episode of care, regardless of the care setting involved. 6. Patient experience with care coordination a. We share NQF's concerns that current survey measures reinforce silos in the system by failing to cross care settings, recognize the shared accountability of multi-disciplinary teams, or include the provider perspective. b. While the SNP Alliance greatly values the importance of measuring patient experience with care coordination, as reported by the patient, we are concerned about difficulties associated in obtaining self-report survey information from persons whose judgment and/or memory is compromised by mental illness or cognitive impairment and with the use of surrogates. This is particularly problematic when scores for plans exclusively serving certain populations, e.g. persons with severe and persistent mental illness, are compared to populations involving relatively few or no persons with compromising circumstances needs to be a priority but staged.

Comment Category	Commenter Organization	Commenter Name	Comment
Prevention and Treatment – Cardiovascular Conditions and Diabetes	Academy of Managed Care Pharmacy	Edith Rosato	AMCP is pleased that the MAP identified "medications" as a priority for measurement in both the cardiovascular and diabetes families of measures. AMCP noted that the MAP has indicated that medication management measures that focus on persistence of medications are a gap for both secondary prevention of acute cardiovascular conditions and for chronic cardiovascular condition measurement. AMCP disagrees with the assertion that there are not adequate measures in this area. "Proportion of Days Covered" measures developed by the Pharmacy Quality Alliance (PQA) are NQF-endorsed medication adherence measures. These measures assess the percentage of patients 18 years and older who met the Proportion of Days Covered (PDC) threshold of 80 percent during the measurement period. The PDC measures include cardiovascular and diabetes medication classes. The Centers for Medicare and Medicaid Services (CMS) five-star rating system, used by the CMS as a relative quality and performance scoring method used for Medicare Advantage (MA) plans and Part D prescription drug plans (PDPs) offered to Medicare beneficiaries, includes the PQA Proportion of Days Covered measures for quality reporting and for the Quality Bonus Payments demonstration project. Rather than identifying this area as a "prioritized gap measure," AMCP recommends that MAP add the PQA Proportion of Days Covered measures to the families of measures identified by the MAP.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	American Academy of Ophthalmology	Bill Rich, MD	The MAP Task Force highlights "sequelae of diabetes exacerbations" as a gap area within the measure family. As AAO has pointed out in previous comments, three NQF-endorsed measures exist for diabetic retinopathy that we encourage the MAP to include in the measure family. Those measures are as follows: NQF 55 - Diabetes: Eye Exam NQF 88 – Diabetic Retinopathy: Documentation of Presence or Absence of Macular Edema and Level of Severity of Retinopathy. Percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performedwhich included documentation of the level of severity of retinopathy AND the presence or absence of macular edema during one or more office visits within 12 months. NQF 89 – Diabetic Retinopathy. Percentage of patients aged 18 years and older with a diagnosis of diabetic retinopathy who had a dilated macular or fundus exam performed with documented communication to the physician who manages the on-going care of the patient with diabetes mellitus regarding the findings of the macular or fundus exam at least once with 12 months.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	American Academy of Ophthalmology	Bill Rich, MD	We urge that MAP be more specific in its work on identifying families of measures and clarifying their intended use. We recommend that this work align with existing work underway to develop dashboards of quality measures. In general, we believe that measure families should be more inclusive if they are to be used to develop core measure sets for federal programs.

Comment Category	Commenter Organization	Commenter Name	Comment
Prevention and Treatment – Cardiovascular Conditions and Diabetes	American College of Cardiology	William Zoghbi, MD, FACC	The College recognizes the importance of incorporating cost of care measures into the cardiovascular and diabetes families of measures, but we do not support the inclusion of measures NQF #1598 and #1604. These population-based PMPM index measures have not been tested outside of integrated systems with a strong primary care model. We believe public domain episode groupers would more accurately capture the costs for many physicians, particularly for cardiovascular specialists who may actively manage a patient for only a short period of time. We understand that CMS is making significant progress in the creation of Medicare-specific episode groupers. We encourage MAP to exclude cost of care measures in these measure families until valid public domain episode groupers are available.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	American Medical Rehabilitation Providers Association	Sarah Nicholls	The MAP identifies in the report measure gaps associated with cardiovascular conditions including rehabilitation outcomes and functional status. AMRPA recognizes the importance of improving patients' functional status, but these measures are not well-defined. AMRPA believes several factors should be considered in the development of functional measures including the need for risk adjustment, to assess the motor function change over the patient stay, and the lack of sensitive communication and cognitive measures. AMRPA appreciates the MAP's recognition of rehabilitation in improving outcomes for these patients. As noted in the meetings that led to the development of this report, measures that assess whether a patient was referred for therapy assessment are in use today but fail to specify who must conduct them. For example, a patient with a communication deficit due to a stroke who is assessed by a rehabilitation professional other than a speech-language pathologist or physiatrist might not be identified as a rehabilitation candidate or referred to the right rehabilitation setting. In additional, a referral for assessment does not guarantee access to rehabilitation services. The MAP correctly identified the need to assess the outcomes of rehabilitation as a measures gap that should be addressed. While the MAP considered many cardiovascular conditions, assessing the quality of care for stroke patients in particular warrants further exploration.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	American Psychiatric Institute for Research and Education	Robert Plovnick	While the APA supports the focus of prevention and treatment of the leading causes of mortality on cardiovascular conditions and diabetes families of measures and look forward to next year's focus on mental health care, we wanted to bring to the committee's attention the NCQA stewarded measures that focus on cardiovascular health and diabetes for people with schizophrenia and bipolar disorder. With such vast numbers of persons with cardiovascular disease and diabetes diagnosed with schizophrenia or bipolar disorder, those mental health conditions play into the long term care of these two physical health conditions.

Comment Category	Commenter Organization	Commenter Name	Comment
Prevention and Treatment – Cardiovascular Conditions and Diabetes	AMGEN Inc.	Sharon Isonaka	Amgen appreciates and supports the efforts to promote alignment of performance measurement by encouraging the best use of available high impact, actionable measures and identifying gaps related to programs, care settings, levels of analysis, and populations for the prevention and treatment of cardiovascular conditions and diabetes. Cardiovascular (CV) events are a major driver of healthcare resource utilization and costs and negatively affect health related quality of life. We agree that performance gaps must be closed with respect to reducing the risk of CV disease in the general population, and particularly in the reduction of disease burden and risk of recurrent events in patients with diagnosed cardiovascular disease. We believe that maintaining lipid control is considered one of the most important modifiable factors to decreasing the risk of CV events, therefore we support the inclusion of lipid control measures applicable to the entire population, which the report identified as gaps. We urge MAP to facilitate timely development and endorsement of quality measures for lipid control.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	AstraZeneca	Kathy Gans-Brangs	In Table 6, the proposed measure for assessing good glycemic control is Hgb A1c <8%. NQF 0575 classifies poor glycemic control as A1C >9% & good control as A1C <8%. This measure is apparently intended to capture adequate glycemic control nationally across a wide variation of patient characteristics, thus it is fairly loose in comparison with current standards from recommending bodies (e.g., AACE A1C goal is <=6.5%). MAP may want to note recognize this distinction in the table. Tables on pgs 47 & 50 address the family of measures for acute & chronic cardiovascular conditions, respectively. In both tables, MAP addresses acute prevention, & secondary prevention measures. In both cases, "Cardiometabolic Risk Assessment" is advocated. MAP should consider calling for assessment of A1C as part of the assessment of cardiometabolic risk in primary prevention in light of:(1)High incidence of diabetes in patients presenting with CV disease;(2)The National Cholesterol Education Program (NCEP) identifies diabetes as a CHD risk;(3)Diabetes may develop in individuals who already possess characteristics (possibly genetic) that increase CHD risk in addition to diabetes risk (ie, common antecedents)1,2 (1.Jarrett RJ. Diabetologia. 1984;26:99-102; 2.Jarrett RJ, Shipley MJ. Diabetologia. 1988;31:737-740.) We further recommend that MAP also consider assessment of A1C along with lipids in secondary prevention efforts.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	CAPC	Diane Meier	CAPC understands why MAP chose not to include cross-cutting measures in the Cardiovascular and Diabetes families, but we reiterate that a crucial aspect of quality care for those with these serious and often comorbid conditions is palliative care: communication, patient engagement, shared decision making, care planning, and symptom management.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	Children's Hospital Association	Ellen Schwalenstocker	The Children's Hospital Association appreciates the consideration of inclusiveness in identifying the cardiovascular conditions and diabetes families of measures.

Comment Category	Commenter Organization	Commenter Name	Comment
Prevention and Treatment – Cardiovascular Conditions and Diabetes	National Partnership for Women & Families	Tanya Alteras	Primary Prevention of CV Conditions and Diabetes: We support measure 0018, "Controlling High Blood Pressure." The other measures selected for this category, we fear, are not going to help achieve the MAP's stated goals of improving care for all patients. These measures indicate only whether screenings occurred, and not whether high quality care was then provided, and we believe that these types of "check-the-box" measures should not be included in the CV/Diabetes family. In the section on measure gaps, we would like to suggest that MAP consider HealthPartner's Optimal Lifestyle measure (specified for adults) to address his gap. The HealthPartners measure rates the percent of surveyed members who reported compliance with all components of an optimal lifestyle: physical activity, healthy eating, moderate alcohol consumption and nontobacco use during the past year. Alcohol consumption is excluded from optimal lifestyle calculations for respondents < 21 years old. This measure is already in use by HealthPartners, which pays providers based on performance on this as well as other factors.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	National Partnership for Women & Families	Tanya Alteras	Chronic CV Condition Measures: We do not oppose the measures selected for this category. However, we would like to note that for the measures "Chronic Anti-Coagulation Therapy" and "Heart Failure: Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction," we do have concerns about the broad medical and patient exclusions that are written into the specifications. We do not feel that these exclusions are well-defined and supported by the evidence and would like to see this issue discussed the next time these measures go forward for maintenance review.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	National Partnership for Women & Families	Tanya Alteras	Cost of Care:We fully support the two measures selected for this category. Acute CV Conditions Measures: We support many of the measures selected for this family, and in particular want to thank the task force for selecting the following: 1) Median Time to ECG; 2) the four Cardiac Stress Imaging measures (0670-0672); 3) Primary PCI Received within 90 Minutes of Arrival; 4) the STS CABG composite score; 5) Fibrinolytic Therapy Received within 30 Minutes of ED Arrival; 5) Complete Lipid Profile and LDL Control <100; and 6) Proportion of Patients with a Chronic Condition that Have a Potentially Avoidable Complication During a Calendar Year. We strongly believe that these measures will provide meaningful information on the level of appropriate (or inappropriate) care provided, as well as the efforts made to reduce care in non-acute settings where the costs would be higher.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	National Partnership for Women & Families	Tanya Alteras	Mortality Measures: We support the measures selected for this category. Diabetes Measures: We support the measures selected for this category. We also support the gap areas identified, given that they recognize the need for expanding the specifications/applicable settings of existing measures related to glycemic and lipid control, rather than the need for development of entirely new measures in these areas.

Comment Category	Commenter Organization	Commenter Name	Comment
Prevention and Treatment – Cardiovascular Conditions and Diabetes	Pharmacy Quality Alliance	David Nau	PQA is pleased that the MAP identified "medications" as a priority for measurement in both the cardiovascular and diabetes families of measures and that it is important to have measures that focus on medication persistence and adherence (patients taking medications regularly). However, we are concerned that the MAP indicated that there is a "gap" in medication persistence measures for both secondary prevention of acute cardiovascular conditions and for chronic cardiovascular condition measurement. The "Proportion of Days Covered" measures developed by the Pharmacy Quality Alliance (PQA) are NQF-endorsed measures of medication adherence and persistence. These measures assess the percentage of patients 18 years and older who met the Proportion of Days Covered (PDC) threshold of 80 percent during the measurement period. The PDC measures include cardiovascular and diabetes medication classes. The Centers for Medicare and Medicaid Services (CMS) Medicare Plan Rating system uses the PQA Proportion of Days Covered measures for quality reporting and for the Quality Bonus Payments (QBPs) demonstration project. Thus, there are NQF-endorsed measures of medication adherence and persistence that are already being used by CMS. Rather than identifying this area as a "prioritized gap measure," we recommend that MAP add the PQA Proportion of Days Covered (PDC) measures to the families of measures identified by the MAP
Prevention and Treatment – Cardiovascular Conditions and Diabetes	PhRMA	Jennifer Van Meter	MAP admits that the cost measures it recommends will need to be improved and refined with broader use and it recommends caution in using these measures for payment incentives. PhRMA also believes that extreme caution should be exercised with these measures because their results are at risk for misinterpretation since they are not coupled with quality measures that can serve as a framework for understanding their context. Reporting total costs across a population alongside condition specific quality measures provides an inaccurate display of cost expended for quality of care rendered. We suggest that the NQF-endorsed Relative Resource Use measures may be better measures for this purpose since these measures address condition specific costs that are to be reported alongside the same condition specific quality measures. MAP identifies several measure gaps for diabetes care, including measures to address sequelae of diabetes exacerbations. As a more specific description of this gap, we suggest that MAP add measure gaps related to the long-term cardiovascular outcomes associated with diabetes care. While this type of measure concept would be quite complex, it would address the long-term goal of achieving diabetes control. We also note that PQA has developed adherence measures that are NQF-endorsed, which may be appropriate to include in this family of measures.

Comment Category	Commenter Organization	Commenter Name	Comment
Prevention and Treatment – Cardiovascular Conditions and Diabetes	Society of Thoracic Surgeons	Jane Han	STS's comments were submitted via email. The Society of Thoracic Surgeons (STS) appreciates the opportunity to comment on the MAP Families of Measures Report. STS is the largest cardiothoracic surgery organization in the world, representing more than 6,500 surgeons, researchers, and allied health care professionals. Established in 1989, the STS National Database and its many associated quality assessment and improvement activities are all built on the foundation of more than 5 million cardiac surgical records. STS supports the objectives outlined in the MAP Strategic Plan and MAP's decision to identify families of measures to promote performance measure alignment and subsequently achieve other important objectives (i.e., improve outcomes in high-leverage areas, coordinate measurement efforts to accelerate improvement and reduce data collection burden). STS would like to thank MAP for including in its cardiovascular family of measures STS's Risk-Adjusted Operative Mortality for CABG measure (NQF#0119) and The STS CABG Composite Score (NQF #0696). We strongly support the inclusion of these measures. The Society also appreciates recognition of NQF #0122, Risk-Adjusted Operative Mortality for Mitral Valve Replacement (MVR) + CABG Surgery. However, we would like to request that MAP consider replacing NQF #0122 with either our Risk-Adjusted Operative Mortality for Aortic Valve Replacement (AVR) measure (NQF #0120) or preferably, our new AVR composite measure (in press, The Annals of Thoracic Surgery, and ready for submission to NQF in the near future). Over the past decade, there has been a decline in frequency of isolated CABG surgery and a corresponding increase in the relative percentage of valve surgery cases. Among the latter, isolated AVR is the most common valve operation, accounting for approximately 40% of valve cases collected in the STS Adult Cardiac Surgery Database in 2011. Specifically, of 65,694 valve operations, 26,934 were isolated AVR surgery cases, while isolated MVR and MVR + CABG only accounted for 5,647 and 2,218 procedures, respectively. For this reason, we believe that one of our two isolated AVR measures would capture many more cardiac cases than NQF #0122, and that together with our isolated CABG measures, it would provide a much more comprehensive assessment of a CT program's performance.
Prevention and Treatment – Cardiovascular Conditions and Diabetes	Society of Thoracic Surgeons	Jane Han	STS's comments were submitted via email. Our Society has demonstrated dedication to public reporting and transparency through our collaboration with Consumer Reports and the reporting of the CABG Composite Score on STS and Consumer Reports' websites. We continue to move forward in this effort through the ongoing development of composite measures for public reporting. The STS Quality Measurement Task Force has recently developed an isolated AVR composite measure that includes two outcomes domains, risk-adjusted mortality and risk-adjusted morbidity. STS Database participants received results of their AVR composite scores in May 2012, and participants will have the opportunity to voluntarily publicly report their results for both CABG and AVR in January 2013. In addition, this measure has been assigned to the NQF Cardiovascular Project and will be submitted to NQF for endorsement consideration in 2013. Ideally, we would like to have the AVR Composite Score considered for inclusion in MAP's cardiovascular family of measures. Thank you for the opportunity to submit comments regarding this important report.

APPENDIX G:
High-Leverage Measurement Opportunities—Background Information

In order to facilitate assessment and prioritization of potential high-leverage measurement opportunities, the Institute of Medicine (IOM) framework, *Priority Areas for National Action: Transforming Health Care Quality* (2003), was adopted:

- **Impact**—the extent of the burden—disability, mortality, and economic costs—imposed by a condition, including effects on patients, families, communities, and societies.
- **Improvability**—the extent of the gap between current practice and evidence-based best practice and the likelihood that the gap can be closed and conditions improved through change in an area; and the opportunity to achieve dramatic improvements in the six national quality aims identified in the Quality Chasm report (safety, effectiveness, patient-centeredness, timeliness, efficiency and equity).
- **Inclusiveness**—the relevance of an area to a broad range of individuals with regard to age, gender, socioeconomic status, and ethnicity/race (equity); the generalizability of associated quality improvement strategies to many types of conditions and illnesses across the spectrum of health care (representativeness); and the breadth of change effected through such strategies across a range of health care settings and providers (reach).

These three criteria—impact, improvability, and inclusiveness—were used as a structure for background information compiled about the various topics and subtopics of interest. This information was presented to MAP committee members to provide context for discussion on which issues were most important to address within each measure family. Preference for source data was given to government agencies and centers (e.g. CDC, CMS, AHRQ), though additional resources included peer-reviewed literature, NQF publications, and articles from other non-profits and industry. The tables below summarize the information by family, followed by the corresponding citations for the reference material.

IOM Criteria Applied to Safety Topic Areas

Topic	Impact	Improvability	Inclusiveness
Venous Thromboembolism (VTE)	• Per the Partnership for Patients, there are >100,000 cases per year of hospital patients having VTE • Most common preventable cause of hospital death (AHRQ, 2008); an estimated 10-30% of patients die within 30 days • Estimate of cost per patient in a recent study was $7.6 – 16.6 k/year	• Partnership for Patients estimates that 40% of VTEs are currently preventable • Effective evidence-based guidelines for reducing VTEs available	• Affects broad populations, but is more likely with certain risk factors (e.g. older age, limited mobility, genetic history, certain concurrent conditions) • Applies across settings, and strategies for improvement may be used broadly
Catheter-Associated Urinary Tract Infection (CAUTI)	• Most common type of Healthcare-Acquired Infection; as many as • 560,000 CAUTI episodes occur annually • Less cost and mortality relative to other HAIs, but high rate of • occurrence still makes a large impact	• The Partnership for Patients estimates that 40% of CAUTI episodes are currently preventable • A variety of evidence-based guidelines for prevention are available	• Affects a fairly broad population; tends to be more applicable to inpatient settings
Central Line-Associated Bloodstream Infection (CLABSI)	• Frequent and serious; mortality rate of 12-25% per Partnership for Patients • Billions of dollars in excess cost to the U.S. healthcare system	• The Partnership for Patients estimates that 50% of CLABSI episodes are preventable • A variety of evidence-based guidelines for prevention are available	• Most applicable to sub-populations with other comorbidities, often within inpatient settings
Surgical Site Infections (SSI)	• CDC estimated that >110,000 SSIs occurred in 2009; total annual costs in U.S. hospitals estimated to be >$3.2 billion	• The Partnership for Patients estimates that 35% of all SSIs are currently preventable • A variety of evidence-based guidelines are available, including several applicable to multiple surgical categories	• Applies to patients that have undergone surgical procedures, and therefore strategies applied to somewhat limited range of settings
Ventilator-Associated Pneumonia (VAP)	• Relatively frequent and serious, with potential for significant associated costs; Partnership for Patients indicates there are about 40,000 events and 6,000 deaths annually	• The Partnership for Patients estimates that 50% of VAP episodes are preventable • A variety of evidence-based guidelines for prevention are available	• Most applicable to sub-populations with other comorbidities within inpatient settings
Clostridium difficile (C. diff)	• Hospital visits due to C. diff infection tripled in the past decade • Linked to 14,000 deaths in the U.S. annually • >$1 billion in extra health care costs annually	• Infection control measures and more cautious antibiotic use are effective for preventing C. diff infections	• Risk of infection and mortality generally increased in older individuals • Involves multiple settings due to risk factors implicated
Methicillin-resistant Staphylococcus aureus (MRSA)	• Approximately 94k invasive MRSA infection occur in the U.S. annually, associated with about 19k deaths (CDC MRSA toolkit) • Healthcare-related MRSA infections are often more severe and include bloodstream infections, SSIs, or pneumonia	• Specific guidelines available, and basic infection control practices noted to be effective for prevention • 2010 CDC study indicated that invasive MRSA infections that began in hospitals declined 28% from 2005-2008	• Affects a fairly broad population; there are condition-specific considerations with different settings

Topic	Impact	Improvability	Inclusiveness
Pressure Ulcers	• Over 2.5 million people get pressure ulcers annually (in health care settings and home); accounts for between 8-28% of all documented hospital-acquired conditions • Higher stage ulcers increase risk for infection and possibly death	• The Partnership for Patients estimates that 50% of the most severe pressure ulcers in acute care settings are preventable • Several evidence-based guidelines and an extensive AHRQ toolkit is available	• Certain populations (e.g. elderly and those with limited mobility) at higher risk; capability exists for changes across healthcare settings
Falls	• Fall episodes occur frequently within hospitals and other healthcare facilities, but the level of resulting harm varies substantially • Estimates vary, but over 29,000 preventable falls may be occurring in hospitals annually	• The Partnership for Patients estimates that 25% of fall injuries are preventable • Evidence-based guidelines for fall injury prevention are available, but strategies have been challenging to establish	• Applies somewhat broadly , but certain groups are at much higher risk (e.g. elderly and individuals with disabilities); there are setting-specific considerations
Trauma (burns, shock, laceration, etc.)	• Burns, shock, lacerations, and other such incidents in healthcare settings can lead to serious harms and costs • Incidence rates vary depending on grouping and sub-population	• Limited guidelines exist for preventing non-specific health care related trauma, though some exist for specific procedures or topic areas (e.g. preventing Operating Room fires)	• Applies to a broad range of patients, more often in hospital settings
Iatrogenic Pneumothorax	• Potentially serious complication of procedures near the lung • An RTI study of FY 2009 Medicare hospital data indicated there were • 20,836 discharges with this HAC, and estimated total increase in • payments >$10 million • With treatment, mortality rate relatively low if otherwise healthy	• A 2012 RTI report update for CMS indicated that there is one current guideline with recommendations addressing prevention of iatrogenic pneumothorax • Ultrasound guidance for CVC placement likely underutilized	• Applies most often to patients in a hospital setting with other comorbidities due to the type of initiating procedures
Foreign Object Retained After Surgery	• Potentially serious but relatively uncommon • 2012 RTI report for CMS indicates there were 241 discharges with this HAC among the >10 million FFS discharges subject to POA coding rules in FY 2009	• There are several evidence-based guidelines, but the fairly low incidence of the event limits the magnitude of change possible	• Applies to patients that have undergone surgical procedures, and therefore strategies applied to somewhat limited range of settings
Air Embolism	• Potentially serious but relatively uncommon event • Incidence difficult to estimate, but a RTI study of FY 2009 CMS hospital data indicated the rate of discharges with this secondary diagnosis at risk was <0.1 per 1000 at risk	• Limited information available on opportunities for improvement, potentially due to the low incidence rates • A 2012 RTI report update for CMS indicated that there are no current guidelines that address prevention of air embolism	• Most likely to affect individuals after select procedures (e.g. neurosurgical and otolaryngological surgery, intravascular catheters, and positive pressure ventilation) that are generally hospital-based

Topic	Impact	Improvability	Inclusiveness
Adverse Drug Events	• Hospital patients experience approximately 1.9 million adverse drug events annually (PFP website); mortality estimates vary widely • Estimated >700,000 ED visits occur for ADE's in the US annually • Studies cited in the 2007 IOM report on Preventing Medication Errors indicate conservative estimates of preventable ADEs in long-term care and ambulatory care number 800,000 and 530,000, respectively • Estimated financial impact >$4 billion annually	• PFP estimates that 50% of ADEs in hospitals are preventable • Many efficacious error prevention strategies available per IOM report	• Affects a wide range of individuals, though more in elderly and individuals with multiple comorbidities; applies across conditions, settings, and programs
Manifestations of Poor Glycemic Control	• Moderate to low incidence; 2012 RTI report for CMS indicates there were 424 discharges with this HAC among the >10 million FFS • discharges subject to POA coding rules in FY 2009 • Moderate cost impact – per RTI report above, approximately $2 million in excess cost estimated for this population • May have broader implications if considered beyond HAC criteria	• Several evidence-based guidelines are available • Fairly low incidence limits the potential magnitude of change	• Limited in conditions; may apply across settings
Blood Incompatibility	• Relatively uncommon. The rate of admission for transfusion • reactions, age 18 or over in the U.S. for 2008 was .06 per 100,000 • 2012 RTI report for CMS indicates there were only 13 discharges with this HAC among the >10 million FFS discharges subject to POA coding rules in FY 2009	• 2012 RTI report indicated there are no U.S. guidelines for prevention, but two international guidelines exist • Low incidence limits the potential magnitude of change	• Tends to apply to a more limited subset of the population and settings
Obstetrical Adverse Events	• Obstetrical adverse events occur in approximately 9% of all deliveries in the U.S. • Wide range of severity, including permanent injuries to the infant and maternal death and $$	• The Partnership for Patients estimates that 30% of obstetrical adverse events are preventable • Several evidence-based approaches have been successfully implemented by hospitals and hospital systems	• Women of childbearing age and the fetus or infant are the population at risk; strategies are most applicable to inpatient hospital settings due to the focus on the period of labor and delivery
Imaging Overuse (CT, Contrast, Radiation)	• The U.S. population's total ionizing radiation exposure has nearly doubled in the past 20 years, in large part due to increased use of CT, nuclear medicine, and interventional fluoroscopy • Concerns exist over exposure risks, as well as costs • Much variability in usage of imaging services across the U.S.	• Up to 30-50% of imaging exams may not be medically necessary • Guidelines for avoiding inappropriate imaging are available (e.g. ACR)	• Applies to broad range of individuals and variety of conditions; involves both inpatient and outpatient settings

Topic	Impact	Improvability	Inclusiveness
Antibiotic Overuse (appropriate use/drug selection, culture / sensitivity testing)	• Major public health issue due to the potential for antibiotic resistance, which is associated with increased risk of hospitalization and death, as well as higher costs • May lead to more side effects, allergic reactions, C. diff infections • Per the CDC, current data suggests >10 million courses of antibiotics are prescribed each year unnecessarily	• Guidelines for avoiding inappropriate use of antibiotics are available, particularly for upper respiratory infections	• Broad implications for the general population; applies to both inpatient and outpatient settings

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IOM Criteria Applied to Care Coordination Topic Areas

Topic	Impact	Improvability	Inclusiveness
Avoidable Admissions & Readmissions	• Approximately 19% of Medicare beneficiaries (~ 2 million/year) who are discharged from a hospital are readmitted within 30 days • In non-obstetric Medicaid patients ages 21-64 hospitalized in 2007, about 1 in 10 had >=1 readmission within 30 days • Costs of avoidable hospital readmissions may be as high as $25 billion per year	• Across all insured patients, about 11% of readmissions are estimated to be avoidable • About 13% of adult non-obstetric hospitalizations are estimated to be preventable	• Applies to a wide range of individuals; transitioning can occur from various settings • There are challenges accounting for patient factors such as income status, social support structure, underlying disability, race, ethnicity, English proficiency, etc.
Medical Homes	• A healthcare home should be the usual source of care selected by a patient, and function as the central point for coordinating care around the patient's needs and preferences • The patient-centered medical home (PCMH, or medical home) aims to reinvigorate primary care and achieve the triple aim of better quality, lower costs, and improved experience of care	• A systematic review of early evidence on effectiveness of the PCMH found varied interventions, but most were not fundamental practice transformations; "some favorable effects" were observed on the triple aim outcomes for certain interventions, with a few negative effects on costs, but mostly inconclusive results	• Relevant to the general population • Medical homes are practices that deliver patient-centered care, coordinate care across providers and settings, and have robust information technology to facilitate information transfer
Health Information Technology (HIT)	• "Successful deployment of healthcare information systems provides the critical link to improving care coordination" • Increasing evidence is becoming available that HIT can help prevent adverse events, improve quality, enhance communication, and facilitate lower administrative costs	• Electronic health information systems have potential to improve communication across settings and providers; however, it is essential that systems be interoperable, with communication protocols established between providers and the ability to share all relevant patient information	• Relevant to the general population • Implications for coordination of care across providers and settings
Care Transitions	• Transitions can be a critical phase; hand-offs are estimated to be a factor in about 35% of The Joint Commission's sentinel events	• Results have varied; an example program, The Care Transitions Intervention® led to a 30% reduction in hospital readmissions in a RCT, and further study indicates it can be effective in real world implementation • Incorporating the patient's perspective and ensuring needs are met during transitions may help reduce subsequent hospitalization	• Relevant to the general population • Implications for coordination of care across providers and settings

Topic	Impact	Improvability	Inclusiveness
Communication	• Communication involves all healthcare team members working within the same shared plan of care, ready availability of consultation notes and progress reports, shared decision-making with the patient and family, use of various communication methodologies, and maintenance of privacy with access to information • Surveys have indicated that millions of patients receive inconsistent information from providers	• Evidence exists that communication between providers and across settings also needs much improvement, particularly when considering that most patients with chronic conditions receive care from multiple providers	• Relevant broadly, but self-reported poor communication with providers is more common among patients who are older or who have more severe conditions • Implications for coordination of care across providers and settings
Care Planning	• Proactive plan of Care and follow-up involves an established and current care plan that anticipates routine needs and actively tracks up-to-date progress on the patient's and family's long- and short-term goals	• Research on the isolated effect of care planning is limited and shows somewhat mixed results, with studies tending to focus on specific conditions	• Plans of care are particularly important for patients with chronic diseases, and are vital during transitions for facilitating communication, tracking meds, follow-up, etc. • Implications for coordination of care across providers and settings

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IOM Criteria Applied to Cardiovascular Disease and Diabetes Topic Areas

Topic	Impact	Improvability	Inclusiveness
Smoking cessation & Tobacco use	• 19.3% of adults age 18 and over currently smoke cigarettes • Nearly 1 in 4 high school seniors is a regular cigarette smoker • Smoking is the leading cause of preventable death in U.S. • Cigarette smokers are 2-4 times more likely to develop coronary heart disease, and have about double the risk of stroke	• Though progress has been made in reducing tobacco use, there are still millions of smokers; evidence-based guidelines and effective strategies for tobacco screening and cessation programs exist	• Affects a wide range of the population and variety of conditions; higher smoking rates occur among American Indians/ Alaska Natives, adults with lower education levels, and adults below poverty level
Nutrition, Exercise, and Weight Management	• Healthy diets and regular physical activity are associated with decreased risk of type 2 diabetes, hypertension, obesity, and many other chronic conditions • CDC data shows that 36% of adults and 17% of children/adolescents are obese; obesity-related conditions include heart disease, stroke, and type 2 diabetes	• There are a variety of evidence-based interventions for promoting physical activity and healthy eating (e.g. CDC Strategy Guides) • The USPSTF recommends that clinicians screen all adults for obesity and offer intensive counseling and behavioral interventions for obese adults	• Affects a broad range of individuals, and strategies/ capability for change can be applied widely; generally more applicable to outpatient & community settings • There are racial and ethnic disparities, as well as geographic variability, in obesity prevalence
Lipid Screening	• Individuals with high cholesterol levels have about twice the risk for heart disease • There is good evidence that when abnormally high cholesterol levels are identified, lipid-lowering treatment can substantially decrease risk of heart disease	• Lipid disorders are common, but can remain undetected for an extended period due to lack of symptoms • Strong evidence-based guidelines exist about screening for lipid disorders in selected sub-populations (e.g. USPSTF)	• Affects a broad range of individuals, and strategies/ capability for change can be applied widely; screening most often done in outpatient settings
Blood Pressure Screening	• Hypertension is a major risk factor for heart disease and stroke • In 2010, CDC data indicated hypertension was estimated to cost the U.S. $93 billion	• Per the CDC, around 20% of adults with high blood pressure are not aware that they have it • Strong evidence-based guidelines exist about screening for high blood pressure in adults (e.g. USPSTF)	• Affects a broad range of individuals, and strategies/ capability for change can be applied widely; screening most often done in outpatient or community settings
Diabetes Screening	• Individuals with pre-diabetes have increased risk of type 2 diabetes, heart disease, and stroke • Weight loss and increased physical activity can prevent or delay type 2 diabetes	• It is estimated that of the 25.8 million people in the U.S. with diabetes, 7 million are still undiagnosed • Evidence-based guidelines exist regarding screening for diabetes in certain at–risk populations, such as individuals with elevated blood pressure (USPSTF)	• Affects a broad range of individuals, but racial and ethnic difference exist in the prevalence of diabetes • Strategies/capability for change can be applied widely; screening most often done in outpatient or community settings

Topic	Impact	Improvability	Inclusiveness
Aspirin	• Aspirin is an inexpensive intervention that can decrease the incidence of cardiovascular events, including myocardial infarction in men and ischemic strokes in women	• Evidence-based guidelines exist for recommending aspirin use in at–risk populations when the potential benefit outweighs the potential harms (USPSTF) • There are many individuals at risk of cardiac events despite lack of a previous history of myocardial infarction or stroke	• Affects a broad range of individuals, but age, gender, and racial/ethnic differences exist in the prevalence of risk factors • Strategies/capability for change can be applied widely; applies primarily to outpatient or community settings
Diabetes: Glycemic Control	• Per the CDC, studies have shown that glycemic control benefits individuals with either type 1 or type 2 diabetes • It is estimated that each percentage point drop in A1c blood test levels can reduce the risk of microvascular complications by 40%	• There are effective tests and therapies for glucose control, yet many people with diabetes are not well-controlled • Evidence-based guidelines exist regarding assessment and treatment	• Relevant to all individuals with diabetes; chronic management tends to be most applicable to outpatient or LTC settings, with different acute care needs • Strategies/capability for change can be applied widely but may be more challenging for some sub-populations (e.g. children and elderly)
Diabetes: Lifestyle Management and Vaccination	• Healthy eating and physical activity can be effective, relatively low-cost mechanisms to manage diabetes with low risk of adverse effects • Smoking cessation decreases risk of cardiovascular events and other complications among individuals with diabetes • Influenza, Pneumococcal, and Hep B vaccination can help prevent serious illnesses to which a person with diabetes may be particularly susceptible	• Studies such as the Look AHEAD trial have provided evidence that lifestyle management can achieve weight loss, improve control of diabetes, and decrease cardiovascular risk • Influenza and Pneumococcal immunization rates in younger adults with diabetes suboptimal	• Relevant to all individuals with diabetes; chronic management tends to be most applicable to outpatient or LTC settings
Diabetes: Blood Pressure Control	• In general, approximately every 10 mmHg reduction in systolic BP results in a 12% decrease in risk of diabetes complications • Among individuals with diabetes, improved control of blood pressure can reduce risk of cardiovascular disease by 33-50%	• While approximately 1 in 3 American adults have problems with high blood pressure, the condition is not well-controlled in half of these individuals • Evidence-based guidelines exist for blood pressure management among individuals with diabetes	• Relevant to all individuals with diabetes; chronic management tends to be most applicable to outpatient or LTC settings, with different acute care needs • Strategies/capability for change apply widely
Diabetes: Lipid Control	• Individuals with type 2 DM have increased prevalence of abnormal lipid levels, a factor in their higher risk of CVD • Improved control of LDL cholesterol may decrease cardiovascular complications by 20-50%	• Almost two-thirds of adults with history of high LDL cholesterol do not have their levels under control • Evidence-based guidelines exist for lipid management among individuals with diabetes	• Relevant to all individuals with diabetes; chronic management tends to be most applicable to outpatient or LTC settings • Strategies/capability for change apply widely

Topic	Impact	Improvability	Inclusiveness
Diabetes: Dental Care	• Periodontal disease is more common in people with diabetes. Young adults with diabetes have about twice the risk as those without diabetes • Around one-third of people with diabetes have severe periodontal disease, including loss of attachment of gums to the teeth	• Controlling blood glucose levels, consistent dental self-care, and regular visits to a dentist are generally recommended to help prevent serious mouth problems • Evidence-based guidelines are limited	• Relevant to all individuals with diabetes; chronic management tends to be most applicable to outpatient or LTC settings • Strategies may need to be tailored based on the population due to social and environmental factors
Diabetes: Peripheral Neuropathy	• In 2008, over 70,000 people with diabetes had a leg or foot amputated; people with diabetes are 8x as likely to lose a leg or foot to amputation	• Comprehensive foot care programs can reduce amputation rates by 45-85% • Studies indicate that good blood sugar control slows the onset/progression of complications that can lead to lower extremity complications	• Relevant to all individuals with diabetes; chronic management tends to be most applicable to outpatient or LTC settings
Diabetes: Eye Care	• Diabetes is the leading cause of blindness among adults age 20-74 years old • More severe or poorly controlled diabetes over a longer period increases the risk of retinopathy • Symptoms of diabetic retinopathy usually do not occur until after severe eye damage	• Detecting and treating diabetic eye disease with laser therapy can decrease severe vision loss by about 50-60% • About 65% of adults with diabetes and poor vision can be helped by eyeglasses	• Relevant to all individuals with diabetes; chronic management tends to be mostly in outpatient or LTC settings • Disparities in age, race, and ethnicity exist in obtaining periodic eye exams
Diabetes: Nephropathy	• Diabetes is the leading cause of kidney failure (44% of all new cases); in 2008, a total of 202,290 people with ESRD due to diabetes were on chronic dialysis or had previously had a kidney transplant • Development of severe kidney disease significantly impairs quality of life and increases costs of care	• Detecting and treating early diabetic kidney disease by lowering BP can reduce decline in kidney function by 30-70% • ACEIs and ARBs reduce proteinuria by about 35%	• Relevant to all individuals with diabetes, though disparities exist (e.g. African Americans are more likely than whites to develop ESRD); chronic management tends to be most applicable to outpatient or LTC settings
Cardiovascular Disease: Lipid and Blood Pressure Control	• The number of people living with cardiovascular disease has increased as the general population ages, with CHD being the leading cause of death in the U.S. • Among individuals with existing cardiovascular disease, maintaining desirable lipid and blood pressure levels can reduce risk of MI and death, as well as the need for heart bypass surgery or angioplasty	• Evidence-based guidelines and effective therapies exist for lipid and blood pressure management for individuals with cardiovascular disease; NHLBI ATP and JNC guideline updates are anticipated to be released this year • Studies on the use of recommended therapies indicate that many patients not receiving optimal treatment	• Applies to a broad population of individuals with CHD or CHD equivalents; chronic management tends to be most applicable for outpatient or LTC settings

Topic	Impact	Improvability	Inclusiveness
Cardiovascular Disease: Lifestyle Management and Vaccines	• Healthy eating, exercise, weight management, and avoidance of tobacco and heavy alcohol use can all reduce risk of cardiovascular events among individuals with established cardiovascular disease • Influenza and Pneumococcal vaccinations are recommended for individuals with CVD to reduce complications of infection • Such interventions have the potential to make substantial impacts at a population level, with relatively small risk of adverse events	• Evidence-based guidelines exist for recommended approaches to promote smoking cessation, increased physical activity, weight management, and immunization • Studies indicate that many patients with cardiovascular disease are not receiving appropriate counseling or other interventions	• Applies to a broad population; chronic management tends to be most applicable to outpatient or community settings
Ischemic Heart Disease: Medication therapy	• About 935,000 heart attacks occur in the U.S. annually, resulting in approximately 130,000 deaths • Antithrombotic therapy can have a major impact in acute settings, as well as for long-term prevention of cardiac events • Beta blockers and ACEIs/ARBs are highly effective long-term treatments in appropriate patients • Other medications may play a useful role for select populations	• Evidence-based guidelines exist for medication therapy in different settings and sub-populations of patients with ischemic heart disease (e.g. ACC/AHA) • Studies on use of recommended therapies show many patients are not receiving indicated medications or are not consistently adherent to their regimens	• Applies to a broad range of individuals with ischemic heart disease, and includes multiple settings; risk of adverse medication effects is higher in the elderly
Ischemic Heart Disease: Procedures	• Coronary artery bypass grafting (CABG), percutaneous coronary intervention (PCI), and related procedures can be used very effectively in select sub-populations of patients with ischemic heart disease • Procedural treatment is more often indicated for severe and/or acute-care issues • Some attention has been given to potential overuse of interventional cardiac procedures	• Evidence-based guidelines exist for use of interventional procedures in various sub-populations of patients with ischemic heart disease (e.g. ACC/AHA) • A notable amount of variation in use of procedures by region indicates there may be opportunities to improve adherence to guidelines	• Applies to a broad range of individuals with ischemic heart disease, but more applicable to inpatient settings
Stroke/TIA: Treatments	• Approximately 795,000 people have a stroke each year in the U.S.; estimated direct and indirect costs of stroke were $53.9 billion in 2010 • Acute management with thrombolytic therapy and/or other interventions is a critical factor in the disposition of patient outcomes • Sub-acute and long-term management include consideration for antithrombotic therapy, control of risk factors/complications, potential need for revascularization, and addressing rehabilitation	• Evidence-based guidelines exist for treatment of stroke (e.g. AHA/ASA) • Several large studies have indicated that stroke guideline adherence is lower than desired; efforts such as the Get With The Guidelines® program from the AHA/ASA are striving for improvement	• Applies to a broad range of individuals; acute management issues occur predominately within inpatient settings and longer-term management shifts to outpatient and LTC settings

Topic	Impact	Improvability	Inclusiveness
Heart Failure: Treatments	• In the U.S., approximately 5.8 million people have heart failure (HF); estimated costs of HF in 2010 were $39.2 billion • Appropriate management includes monitoring signs/symptoms, addressing modifiable risk factors, medication therapy (ACEIs/ARBs, diuretics, beta blockers, and/or aldosterone antagonists) as appropriate, and consideration for ICD and cardiac resynchronization therapy when indicated	• Evidence-based guidelines exist for treatment of HF (e.g. ACC/AHA) • Heart failure death rates vary substantially by region; age-adjusted rate (among those 65+) per 100,000 in the U.S. ranged from 41.6 to 344.3 in 2006	• Applies to a broad population, though more in elderly; management issues can apply across settings, with acute exacerbations mainly inpatient
Atrial Fibrillation: Treatments	• A-fib is the most common arrhythmia; affected about 2.66 million people in 2010, but estimated to be up to 12 million in 2050 • Estimated cost for treatment of atrial fibrillation in 2005 was $6.65 billion • Treatments include lifestyle changes, medications for heart rate and/or rhythm control, and surgery; anti-thrombotic therapy is also important to consider for decreasing stroke risk	• Evidence-based guidelines exist for management (e.g. ACCF/AHA/HRS) • Use of recommended therapy, such as antithrombotic therapy in high-risk patients, is suboptimal	• Applies to a fairly broad population, incidence increases with age; many management issues apply across settings, though acute complications are most often handled as an inpatient
Cardiovascular Rehabilitation	• Many cardiovascular conditions/events produce long-term consequences • There is evidence that cardiac rehabilitation can improve outcomes in certain patients, particularly post-MI • Certain components of rehabilitation may be more efficacious than others	• Consensus recommendations exist for appropriate composition and utilization of cardiac rehabilitation programs (e.g. AACVPR/AHA) • Opportunities exist for expanding adoption of successful programs and enhancing care standardization	• Applies to a broad population of individuals with cardiovascular conditions, but most often to those with more severe disease • Issues are relevant across a variety of settings as patients transition through various phases of treatment
Appropriate/ Overuse of Services	• Unnecessary tests and procedures waste health care resources and have the potential to do harm • Costs may be significant—e.g. for Cardiovascular disease: Kale et al estimated excess direct costs of using expensive brand-name statins for initiating lipid lowering therapy at around $5.8 billion per year, and of annual ECGs by adults presenting for general medical exams to be $6-$38 million	• It is estimated that as much as 30% of care is duplicative or unnecessary; recommendations for avoiding certain tests or treatments based on evidence (or lack thereof) have begun to emerge, such as the Choosing Wisely® campaign	• Affects a broad range of individuals; strategies/capability for change can be applied widely, though is more applicable in certain regions

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