CMS Quality Measure Development Plan: Supporting the Transition to The Quality Payment Program

2017 Annual Report

Center for Clinical Standards and Quality
Centers for Medicare & Medicaid Services (CMS)

CMS Quality Measure Development Plan: Supporting the Transition to the Quality Payment Program

2017 Annual Report

June 2, 2017

Prepared by: Health Services Advisory Group, Inc.

Table of Contents

Executive Summary

The Medicare Access and Children's Health Insurance Program (CHIP) Reauthorization Act of 2015 (MACRA)[1] supports a transformation of the health care delivery system by establishing a new approach to value-based payment for physicians and other clinicians. The Quality Payment Program aims to improve health outcomes, promote smarter spending, minimize burden of participation, and provide fairness and transparency in operations through two avenues of participation: Advanced Alternative Payment Models (APMs) and the Merit-based Incentive Payment System (MIPS).[2]

Section 1848(s)(1) and (3) of the Social Security Act (the Act), as added by section 102 of MACRA, requires the development of the *Centers for Medicare & Medicaid Services (CMS) Quality Measure Development Plan (MDP)*[3] and the MDP Annual Report. Section 1848(s)(6) authorizes $15 million for measure development each fiscal year (FY) from 2015 through 2019, available through the end of FY 2022.[i] (Appendix A contains the relevant statutory language.) CMS has taken a purposeful approach to inform the upcoming release of funding under MACRA through collaboration with stakeholders to target measure development priorities.

The MDP, posted on the CMS website on May 2, 2016, outlines a strategic approach to measure development to support the Quality Payment Program. The MDP Annual Report addresses the following objectives to fulfill the statutory requirements:

- **Reports on the progress made by the Secretary of Health and Human Services (HHS) in developing quality measures for the Quality Payment Program[ii] and in implementing the MDP.[iii]** The MDP provides a foundation for building a measure portfolio for the Quality Payment Program and identifies initial priorities among clinical specialties, quality domains, and measurement gaps. MACRA section 102 funding used to date to support measure development, including the foundational strategic planning activities described in this report, totals an estimated $5.9 million. Among these activities were an environmental scan and gap analysis that examined the priorities detailed in Section V of the MDP[3] and a nationally credentialed technical expert panel (TEP) (Appendix B), convened by a CMS measure development contractor in November 2016, that assessed the findings and provided input.

  In implementing strategic approaches of the MDP, CMS has engaged in significant collaboration with stakeholders. Focus groups, onsite practice visits, webinars, and open door forums have expanded outreach to the medical community, demonstrated transparency, and obtained valuable feedback from clinicians and specialty groups. Collaboration between patients and care teams is promoted through the Person and Family Engagement (PFE) Affinity Group, chartered by the CMS Quality Improvement Council to improve outreach and two-way communication.[4]

- **Provides other information the Secretary determines to be appropriate.[iv]** The Office of the National Coordinator for Health Information Technology (ONC), in consultation with other HHS agencies, has developed the *Federal Health IT Strategic Plan 2015–2020*

[i] Section 1848(s)(6)
[ii] Section 1848(s)(3)(A)
[iii] Section 1848(s)(3)(B)(i)
[iv] Section 1848(s)(3)(B)(v)

to advance data exchange and interoperability. The plan outlines a federal commitment to expedite the availability of high-quality, accurate, secure, and relevant electronic health information for stakeholders across the nation.[5] CMS and HHS are leading initiatives to spur innovations in health information technology (IT) that will further reduce the burden of data collection for clinician quality measurement.

A core objective for HHS and CMS is to improve beneficiary outcomes, including the reduction of health disparities. Recent federal reports provide analyses and recommendations that CMS is studying to determine, in collaboration with stakeholders, how to account for social risk factors and reduce health disparities in CMS quality measurement programs.

- **Details updates to the MDP, including newly identified gaps and the status of previously identified gaps.**[v] CMS developed the *CMS MDP Environmental Scan and Gap Analysis Report* in 2016.[6] Key findings (Appendix C) form the basis for TEP recommendations to support measure development for the Quality Payment Program:
    - From a scan of 989 clinician-level measures in national databases and HHS measure lists, 159 measures were applicable to the measurement priorities in the MDP. MIPS includes 67 of those measures for the 2017 performance period (Appendix C, Table 8); the remaining 92 measures can be considered for future inclusion in the Quality Payment Program (Appendix C, Table 9).
    - Gaps were identified for 88 potential measure subtopics derived from federal reports, stakeholder groups, and relevant public comment documents (Appendix C, Table 7). Each subtopic describes in some detail a structure, process, or outcome of care within a topic.
    - The TEP rated the importance of the 88 subtopics, then focused on 15 of the highest-rated subtopics for in-depth discussion and reassessment.
    - To consider additional patient and caregiver perspectives, the TEP reviewed a summary of interviews conducted with 25 individuals about their experiences with the health care system relevant to one or more of the prioritized clinical specialties (general medicine, mental health/substance use, palliative care, oncology, pathology, radiology, orthopedic surgery).
    - The TEP recommended 12 of the 15 subtopics for initial measure development to support the Quality Payment Program (Table 3). These were prioritized as important clinical concepts that are meaningful to patients, caregivers, and families. Among the recommended subtopics are diagnostic accuracy (discussed as applicable to multiple specialties), outcomes related to symptom management (palliative care), and correlation of findings with a focus on assessing team-based care (radiology and pathology).
- **Describes the quality measures developed during the previous year (April 16, 2015–December 31, 2016, for this initial report).**[vi] Three clinician quality measures applicable to the Quality Payment Program (one of which is included for 2017) completed development between April 16, 2015, and December 31, 2016 (Appendix D, Table 10). Combined expenditures during that period for development of these measures

[v] Section 1848(s)(3)(B)(iv)
[vi] Section 1848(s)(3)(B)(ii)

are estimated at $433,480.[vii] These process of care measures reflect key tenets of the MDP, including the use of electronic specifications, and address the MACRA quality domains of affordable care, clinical care, and patient and caregiver experience.

- **Describes applicable quality measures in development at the time of this report (April 16, 2015–December 31, 2016)**.[viii] Development or testing occurred during this period for 29 electronically specified measures, of which 18 may be considered for future inclusion in the Quality Payment Program (Appendix E, Table 11). Seven are applicable to the initial priorities and gaps identified in the MDP, addressing affordable care, care coordination, clinical care, and patient and caregiver experience. Eleven measures were suspended after initial testing because of barriers related to feasibility, evidence, implementation, or a smaller than expected performance gap. (Appendix E, Table 12, details the reasons.) Combined expenditures during the specified period were estimated at $3,774,123: $2,336,644 for 22 measures targeting processes of care, $760,887 for three care outcome measures, and $676,592 for four patient-reported outcome measures.[vii]
- **Provides an inventory of applicable quality measures.**[ix] The inventory of clinician measures applicable to the 2017 Quality Payment Program includes 271 quality measures for MIPS and 99 quality measures across six Advanced APMs. In addition, 113 qualified clinical data registries (QCDRs) can report CMS-approved measures specific to each registry (formally referred to as "non-MIPS measures") in addition to MIPS measures.

Progress relative to the requirements of the MDP Annual Report demonstrates strides toward quality measurement that is less burdensome to clinicians, more meaningful, and capable of driving improvements in health care delivery that benefit patients, families, and caregivers. CMS efforts to implement and support the Quality Payment Program have promoted increased collaboration and transparency, broader knowledge sharing among public and private stakeholders, and a sustained focus on partnering with patients, families and caregivers, frontline clinicians, and specialty societies.

Through the foundational work described in this report, CMS, in partnership with stakeholders, is undertaking strategic steps in support of measurement under the Quality Payment Program:

- Designating funding to support external stakeholder efforts to develop, improve, update, or expand quality measures for use in the Quality Payment Program, as announced in a funding opportunity forecast at: https://www.grants.gov/web/grants/view-opportunity.html?oppId=293852.
- Focusing on prioritized measurement gaps as concepts for potential development
- Further examining measurement gaps for additional specialties and subspecialties
- Assessing the 92 applicable measures identified in the *CMS MDP Environmental Scan and Gap Analysis Report* for potential inclusion in the Quality Payment Program
- Evaluating the measurement portfolio to ensure measures function as intended and reflect the realities of clinical practice

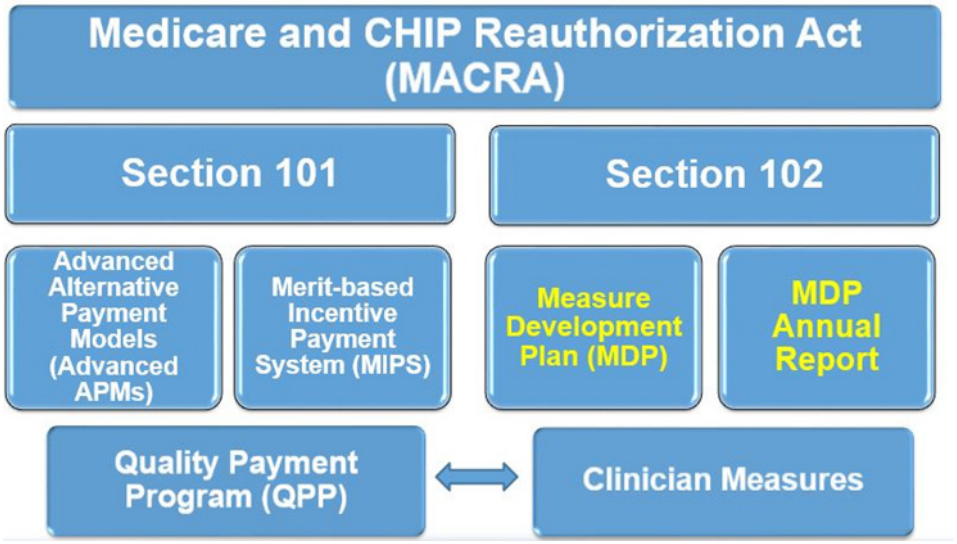
[vii] Measures included in Appendices D and E were not funded by MACRA section 1848(s), as funding for development was obligated prior to the passage of MACRA, using existing CMS funds under Title XVIII.
[viii] Section 1848(s)(3)(B)(iii)
[ix] Section 1848(s)(3)(B)(iv)

I. Introduction

MACRA provides a unique opportunity to transform health care delivery from a volume-based Medicare payment system to one focused on high-quality care at a reasonable cost.[7] Under MACRA, CMS is transitioning three discrete clinician reporting programs into the Quality Payment Program, consisting of MIPS and incentives for participation in Advanced APMs. The Quality Payment Program aims to improve health outcomes, promote smarter spending, minimize burden of participation, and provide fairness and transparency in operations. Person-centered CMS policies emphasize engaging patients and improving beneficiary outcomes, while flexible and transparent program design with easy-to-use tools enhances the clinician reporting experience. In implementing these policies within the Quality Payment Program, the CMS goal is to champion the values and health care priorities of patients, families, and caregivers through quality improvement while reducing the cost and effort for clinicians to report quality measures.

On May 2, 2016, CMS published the *CMS Quality Measure Development Plan: Supporting the Transition to the Merit-based Incentive Payment System (MIPS) and Alternative Payment Models (APMs)*.[3] Since then, CMS has conducted foundational strategic planning work to engage patients, caregivers, frontline clinicians, and specialty societies, among others, as key collaborators in progressing approaches outlined in the MDP. The CMS Quality Measure Development Plan 2017 Annual Report describes activities to advance the Quality Payment Program and marks another MACRA milestone as the Secretary of HHS posts online "a report on the progress made in developing quality measures for application under the applicable provisions."[x] Collectively, the Measure Development Plan (MDP) and the MDP Annual Report serve as the primary public documents to inform stakeholders—including clinicians, patients, families, and caregivers—about quality measure development. Figure 1 describes how these documents relate to certain provisions of sections 101 and 102 of MACRA.

Figure 1: MDP and MDP Annual Report Relationship to MACRA



[x] Section 1848(s)(3)(A), (5)

MIPS builds upon existing quality measure sets from the Physician Quality Reporting System (PQRS), Value Modifier (VM), and Medicare Electronic Health Record (EHR) Incentive Program for Eligible Professionals. Beginning in 2019, CMS will apply a payment adjustment to each MIPS eligible clinician, in a budget-neutral manner, based on a final score across the performance categories of quality, improvement activities (defined in MACRA as clinical practice improvement activities), and advancing care information (defined in MACRA as meaningful use of certified EHR technology). A fourth category, cost (defined in MACRA as resource use), will be calculated but not used to determine payment adjustments in 2019.[8]

As part of the Quality Payment Program, sufficient participation in an Advanced APM allows eligible clinicians to earn incentive payments and be exempt from MIPS requirements and payment adjustments. APMs are either (1) CMS Center for Medicare and Medicaid Innovation (CMS Innovation Center) models (other than a Health Care Innovation Award); (2) Medicare Shared Savings Program (Shared Savings Program) tracks; or (3) certain federal demonstration programs. Advanced APMs are a subset of APMs. To be an Advanced APM, an APM must (1) require the use of certified EHR technology, (2) base payments for services on quality measures comparable to those in MIPS, and (3) be either a medical home model expanded under Innovation Center authority or an APM that requires participants to bear more than nominal financial risk for losses. The following are the Advanced APMs for 2017:

- Comprehensive ESRD Care (CEC) Model[9] (LDO arrangement and non-LDO two-sided risk arrangement) − 16 measures included
- Comprehensive Primary Care Plus (CPC+) Model[10] – 17 measures
- Shared Savings Program Accountable Care Organizations, Track 2 and Track 3[11] – 29 measures
- Next Generation ACO Model[12] – 29 measures
- Oncology Care Model (OCM)[13] – two-sided risk arrangement – six measures
- Comprehensive Care for Joint Replacement (CJR) Payment Model (Track 1 − CEHRT)[14] – two measures

Advanced APMs must meet three specific requirements, one of which is basing payments for services on quality measures comparable to those in MIPS. Sufficient participation in an Advanced APM for a year will earn clinicians a 5 percent APM incentive payment for years from 2019 through 2024 and exempt them from the MIPS reporting requirements and payment adjustment for the year. To qualify for the 5 percent APM incentive payment for a year, participants must receive a certain percentage of Medicare payments for covered professional services or see a certain percentage of Medicare patients through an Advanced APM during the associated performance period. Earning an APM incentive payment in one year does not guarantee receipt of the incentive payment in future years.

The CMS Quality Measure Development Plan and the MDP Annual Report together provide a strategic framework to inform and guide CMS and measure developers on priority areas for quality measure development. The MDP highlights known measurement and performance gaps and recommends engaging frontline clinicians, patients, families, and caregivers in closing those gaps through the development, adoption, and refinement of quality measures. As a companion document, the MDP Annual Report describes progress in implementing the MDP, including the

development of quality measures for the Quality Payment Program and progress in addressing newly as well as previously identified performance measure gaps.[xi]

Objectives

The 2017 MDP Annual Report addresses the following requirements to fulfill provisions of section 102 of MACRA:

- **Reports on the progress made in developing quality measures for the Quality Payment Program[xii] and the Secretary's efforts to implement the MDP.[xiii]** This report documents key activities undertaken to implement strategic approaches outlined in the MDP. Key among the activities that informed this report was a focused environmental scan and gap analysis that provided new details about the measurement priorities specified in the MDP. A technical expert panel was convened by the measure development contractor to assess those findings and provide recommendations for measure development. To promote meaningful engagement between patients and care teams, as well as to empower individuals and caregivers, CMS established a Person and Family Engagement Affinity Group and other venues for outreach and two-way communication. Onsite practice visits and physician focus groups are obtaining feedback from frontline clinicians, while listening sessions, open door forums, and other events are reaching larger segments of the stakeholder community. A measure development webinar series promotes knowledge sharing with both patient advocacy groups and specialty societies; other forums share best practices with measure developers.
- **Provides other information the Secretary determines to be appropriate.**[xiv] The report describes progress on essential initiatives in health information technology standards, innovation, data access and sharing, and operational processes related to clinician burden of data collection, electronic specifications, and data acquisition.
- **Details updates to the MDP, including newly identified gaps and the status of previously identified gaps.**[xv] Key findings of the *CMS MDP Environmental Scan and Gap Analysis Report* (Appendix C), as well as the recommendations of the TEP, are summarized to support measure development and future updates of the MDP. CMS is aligning recommendations from the TEP with additional CMS work under way to identify gap areas across priority domains and specialties
- **Describes the quality measures developed during the previous year (April 16, 2015–December 31, 2016, for this initial report).**[xvi] Information is provided about measures developed during the previous year and includes developer; steward; name; quality domain(s); and whether electronically specified. The total number of quality measures developed, endorsement status, and estimated amount of funding spent to develop the measures are also provided.[xvii]

[xi] Section 1848(s)(3)(B)(iv)
[xii] Section 1848(s)(3)(A)
[xiii] Section 1848(s)(3)(B)(i)
[xiv] Section 1848(s)(3)(B)(v)
[xv] Section 1848(s)(3)(B)(iv)
[xvi] Section 1848(s)(3)(B)(ii)(I-V)
[xvii] Section 1848(s)(3)(B)(ii)(IV)

- **Describes applicable quality measures in development during the previous year (April 16, 2015–December 31, 2016).**[xviii] In addition to the same level of detail described for measures developed in the previous year, if available, the timeline for measure development completion for those measures still in development is included.
- **Provides an inventory of applicable measures.**[xix] The inventory includes MIPS quality measures published in the CY 2017 Quality Payment Program final rule, MIPS-comparable measures for Advanced APMs, and measures that are reportable through MIPS QCDRs for the applicable year.

This report thereby summarizes 2015–2016 activities to fulfill the statutory requirements and build on the foundation of the Measure Development Plan.

Report Development

MACRA section 102 authorizes $15 million each fiscal year from 2015 through 2019, available through the end of FY 2022,[xx] for measure development and associated activities. CMS has spent approximately $5.9 million ($4.4 million in FY 2016 and $1.5 million in FY 2017) of this funding for foundational work to advance quality measure development to inform the development of this Annual Report, advance the priorities identified in the MDP, and provide a strong foundation for measure development opportunities funded by MACRA. CMS conducted an environmental scan, performed measure gap analyses, and obtained input from stakeholders to inform measure development procurement releases. The *CMS MDP Environmental Scan and Gap Analysis Report* and the MDP TEP contributed significantly to these planning initiatives.

To obtain multi-stakeholder input, 22 diverse and highly qualified individuals were selected from a pool of applicants received through an open call for TEP nominations on the CMS.gov website. The selected individuals include patient and caregiver representatives, frontline clinicians, consumer advocates, payers, quality measurement and health information technology experts, and representatives of professional societies. The TEP composition encompasses all specialties CMS identified in the MDP as initial priority areas (mental health/substance use, oncology, orthopedic surgery, pathology, palliative care, radiology, general medicine). Many TEP members have experience in multiple areas, ensuring targeted representation of health systems, payers, and clinical practices both large and small. In addition to 15 physician representatives, the TEP includes two non-physician clinicians eligible for the Quality Payment Program: a family nurse practitioner and a physician assistant. (See Appendix B for the MDP TEP membership list.)

The *CMS MDP Environmental Scan and Gap Analysis Report*[6] focuses on the initial measurement gaps and priorities identified in the MDP, which include the clinical specialties determined to have performance measure gaps as well as the general medicine category encompassing crosscutting measures (applicable across multiple specialty areas). The quality domains derived from the CMS Quality Strategy and related MACRA priorities, together with measure topics and clinical specialties prioritized in the MDP, were incorporated into a conceptual framework. Scanning databases to populate the framework with applicable measures revealed gaps for the targeted specialties at the subtopic level. This MDP Annual Report

[xviii] Section 1848(s)(3)(B)(iii)
[xix] Section 1848(s)(3)(B)(iv)
[xx] Section 1848(s)(6)

includes findings from the *CMS MDP Environmental Scan and Gap Analysis Report* that augment the plan with specific recommendations for CMS and potential measure developers to consider for future measure development to support the Quality Payment Program.

To ensure the inclusion of person and family perspectives, semi-structured telephone interviews were conducted to discuss aspects of patient care and interaction with a care team. Interviewees included 20 patients and five caregivers who had experience with the specialties identified as priorities in the MDP. The individuals discussed their personal health care experiences, including interactions with primary care clinicians, specialists, and broader care teams as applicable. The individuals also rated the importance of selected measure topics identified from the initial priorities of the MDP. This information was summarized for consideration by the TEP.

The TEP was convened [by the measure development contractor on November 17, 2016, to individually reaffirm priorities among measure subtopics that the TEP rated in preparation for the meeting and to provide individual recommendations on criteria for evaluating the impact of the MDP. To improve transparency and broaden awareness and collaboration with stakeholders, CMS publicly posted the *MDP TEP Meeting Summary* and the *CMS MDP Environmental Scan and Gap Analysis Report* to the CMS.gov website.

Through this foundational work and ongoing tasks, the TEP provides expert input to CMS, other stakeholders, and potential measure developers to further the vision of a person-centered, quality-based, and meaningful clinician quality measure portfolio.

II. MACRA Requirements for the MDP Annual Report

This section of the MDP Annual Report details progress on each of the requirements outlined in the Objectives section above, including CMS efforts to implement the plan; broader HHS efforts to support the strategic approaches and considerations within the plan; methods to identify and close measure gaps; and an accounting of inventories of clinician quality measures applicable to the Quality Payment Program.

Efforts to Implement the Measure Development Plan

Since the publication of the MDP, CMS has made progress in implementing strategic approaches and addressing operational requirements and key considerations described in the plan. The approaches described in the following subsections reflect key components outlined in the MDP and underscore the CMS commitment to listen to, engage with, and learn from stakeholders as the agency continues the transition to the Quality Payment Program and advances health care delivery system reform.

Partnering With Patients, Families, and Caregivers in the Measure Development Process

Meaningfully engaging patients, caregivers, and their families as partners in measure identification and development, as well as clinical care, continues to be a focal point of the CMS person-centric approach to clinical quality measurement. The long-term vision for the CMS measure portfolio can be achieved only through the direct involvement of patients and their families/caregivers in identifying and selecting measures that matter to them, as well as in care planning, goal-setting, and shared decision-making with clinical care teams. CMS reinforces this commitment through broader outreach and communication with patient advocacy groups such as the National Partnership for Women and Families,[15] PatientsLikeMe,[16] and the Patient-Centered Outcomes Research Institute.[17]

CMS established the Person and Family Engagement (PFE) Affinity Group[4] to extend outreach, recruitment, and communication approaches; to promote meaningful engagement between patients and their care teams; and to empower patients and caregivers as key contributors and influencers in measurement recommendations at the national level. The creation of the PFE Affinity Group reflects the critical importance of persons', caregivers', and families' perspectives. The PFE has worked to create an inclusive, collaborative, and aligned national person and family engagement framework to drive genuine transformation in clinician attitudes, behavior, and practice. In December 2016, the PFE Affinity Group published the PFE Strategy to ensure the consideration of the health, values, and goals of individuals in consultation with the entire health care team.[18]

The best practices and lessons learned from these engagement efforts have contributed to a redesign of the Person and Family Engagement section in the *Blueprint for the CMS Measures Management System* (MMS Blueprint).[19] Additionally, CMS measure development contractors broaden patient, family, and caregiver outreach and recruitment through focus groups and interviews to ensure the voice of the patient is heard throughout the measure development life cycle. Consistent with this approach, the assessments of measure priorities and gaps described in this report were informed by patient, family, and caregiver representation on the TEP and via patient and caregiver interviews.

Partnering with Frontline Clinicians and Professional Societies

Meaningful partnerships with stakeholders provide the opportunity to obtain external recommendations on CMS clinician measurement programs and priorities. CMS has engaged in open dialogue with frontline clinicians and professional societies to better inform measure development priorities for the Quality Payment Program and to identify process or logistical improvements to reduce clinician burden. For example, the collaboration and measure development recommendations originating from the multi-stakeholder MDP TEP are informing CMS priorities for initial measure development opportunities funded under MACRA.

Additionally, CMS is listening to the constructive stakeholder feedback received in public comments on the CY 2017 Quality Payment Program final rule. A common theme emerging from stakeholder comments was an appeal to recognize and address the challenges and burden of submitting CMS quality measure data. While considering the input and recommendations, CMS further engaged the stakeholder community in open door forums, listening sessions, patient advocacy groups, and specialty society and association meetings. In addition, CMS conducted onsite practice visits and physician focus groups to obtain feedback from frontline clinicians and small and rural practices about the operational challenges and burdens of implementing quality measures. At the time of report publication, CMS has conducted 346 knowledge-sharing, outreach, and training events on the Quality Payment Program, reaching 147,800 people.

To increase awareness and expand opportunities for frontline clinicians, specialty societies, and professional associations to participate in CMS measure development-related activities, CMS has broadened the reach of communications. Call for TEP announcements and related opportunities now reach more than 35,000 interested parties. TEP applications and overall participation in measures-related activities have increased. CMS also initiated a measure development webinar series focused on knowledge sharing, best practices, and innovations for stakeholder engagement. A new specialty "Spotlight" series engages individual specialty societies and highlights innovations and approaches that can increase efficiencies in measure development processes.

CMS provides direct technical assistance to help both small and large practices successfully participate in the Quality Payment Program. Practices of 15 clinicians or fewer—including those in rural locations, health professional shortage areas, and medically underserved areas—receive on-the-ground training through the Small, Underserved, and Rural Support (SURS) initiative.[20] Quality Innovation Network-Quality Improvement Organizations (QIN-QIOs) provide customized technical assistance for practices of more than 15 clinicians. The QIN-QIOs assist eligible clinicians in choosing and reporting on quality measures, assessing and optimizing health information technology, and supporting change management and strategic planning.[20]

Nationwide, CMS aims to support more than 140,000 clinical practices in sharing and refining their quality improvement strategies through the Transforming Clinical Practice Initiative (TCPI), launched in 2014. Through this initiative, Practice Transformation Networks facilitate peer-based learning to help clinicians gain core competencies to become leaders of positive change in the health care system.[21]

In addition, CMS has engaged frontline clinicians in initiatives to inform its approach to communication, outreach, Quality Payment Program implementation, and clinician quality measure development. One of these initiatives, Clinician Champions, brings together a group of practicing clinicians to assist CMS in exploring effective methods of communication about CMS programs to practitioners across the country. A second initiative, Clinician Voices, empowers frontline clinicians to inform and evolve the Quality Payment Program through participation in activities such as solution development, user testing, presentations, interviews, surveys, workgroups, and focus groups. Through this collaborative approach aimed at ensuring the Quality Payment Program remains patient-centered and clinician-driven, interested individuals from diverse clinical disciplines and geographic regions can actively engage with CMS and provide feedback.

CMS Measures Management System (MMS)

The MMS provides a framework for developing and maintaining the quality measures used in CMS quality initiatives and programs: the MMS Blueprint. To promote broader knowledge sharing with patient advocacy groups and specialty societies, the MMS created and facilitated a measure development webinar series focused on processes in the measure development life cycle, including measure specifications, testing, and implementation.

The measure development and testing cycle is an iterative and robust process that strives to create measures that are feasible, reliable, valid, and appropriate for implementation. The process is designed with a series of checkpoints to allow those measures that are appropriate for implementation to continue through the development and testing process, but also to identify measures not viable for implementation. Understandably, not all measures that begin development complete the process and become fully developed for implementation, and it is reasonable to expect that some measures will discontinue development along the way. Prior to testing, the developer must propose a measure concept that represents an opportunity for quality improvement and is deemed important by stakeholders, including patients, caregivers, and professionals. After such a concept has received approval to move forward, the developer uses preliminary specifications to carry out initial testing. If the initial testing results are acceptable, the measure will proceed to further testing once full specifications are developed. If any implementation concerns are noted during this process, measure development could be stopped or paused until these concerns have been addressed. Iterative testing—in conjunction with continual public input throughout development, including public comment opportunities and TEP review of specifications and testing results—assures that only measures which pass each critical checkpoint continue to advance toward implementation. The system also informs CMS of successes and challenges as it works toward the goal of developing a measure portfolio for which strong statistical evidence of a true gap in performance exists and which consists primarily of clinical and patient-reported outcome measures.

To support more efficient measure development, CMS continues to expand and refine the tools available through the CMS MMS. One such tool, the CMS Measures Inventory, is a compilation of measures used in various CMS programs. Over the past year, CMS expanded the inventory to include additional measures included in Medicare Part C and D Star Ratings and the Nursing Home Quality Initiative. CMS also incorporated measures under consideration and measures under development into the inventory to provide a more comprehensive view of the measure landscape. CMS is working to automate the inventory and improve functionality and usability through a Web-based interface intended to be publicly available in late 2017.

CMS is also developing a tool to automate measure development literature review with the goal of streamlining environmental scans and information gathering. CMS makes environmental scan and gap analysis reports accessible across measure development contractors through a shared workspace, the CMS Measure & Instrument Development and Support Communication, Coordination and Collaboration (MIDS C3) Library. Through the evolution and use of these tools and ongoing knowledge sharing across measure developers and the agency, CMS is committed to making measure development more efficient, timely, and transparent.

Coordination and Sharing Across Measure Developers

CMS leverages best practices and lessons learned to strengthen coordination across the measure developer community. For example, the CMS Quality Measures Technical Forum (QMTF) and HHS Measurement Policy Council (MPC) leadership teams share experiences related to quality measurement, alignment, and core measure activities and leverage expertise from other federal agencies, such as the Department of Defense, Department of Veterans Affairs, and Office of Personnel Management. Key takeaways from these discussions are shared with CMS measure developers through weekly conference calls, monthly National Quality Forum (NQF) measure developer webinars, and the MIDS C3 forum, a webinar series. In addition, CMS has broadened the types of contractual deliverables that are shareable across measure developers to include environmental scan and gap analysis reports and measure testing plans. CMS also solicits input from contractors prior to the public release of updates of the MMS Blueprint.

More broadly, in 2011, CMS formed the Quality Improvement Council (QIC) to guide quality improvement and promote continual learning and dissemination of quality improvement activities. The QIC chartered cross-agency affinity groups with specific objectives to build collaboration, enhance health quality programs, and produce impactful outcomes. In 2016, CMS expanded the affinity groups to support the implementation of the CMS Quality Strategy (Figure 2). During the 2016 CMS Quality Conference, 11 of the 12 affinity groups conducted breakout sessions, and three of the groups (Person and Family Engagement, Population Health Improvement, and Value Based Purchasing) were featured in a CMS Quality Strategy goal alignment and implementation presentation at the conference.

Figure 2: Quality Improvement Council Affinity Groups

Gap Analysis

As introduced in the Report Development section, the approach to inform future clinician measure development started with an environmental scan and gap analysis centered on the initial priority gap areas and specialties identified in Section V of the MDP. This focused effort identified an initial set of measurement topics and subtopics to consider for new measure development under MACRA. For example, within the domain of effective treatment/clinical care, the prioritized measure subtopics focus on outcome measures and patient-reported outcome performance measures (PRO-PMs). The topics and subtopics identified were evaluated by a multi-stakeholder technical expert panel, and recommendations were prioritized for further CMS consideration. Patient, caregiver, and family perspectives and experiences shared during the TEP meeting and through additional patient and caregiver interviews strongly influenced the identification and evaluation of topics and subtopics. Additional specifics regarding the environmental scan, gap analysis, and TEP recommendations can be found in the "Closing Measurement Gaps Through Advancement of the MDP" subsection of this report.

While CMS understands the importance of developing meaningful and applicable quality measures for every clinician, the scope of this initial effort was not intended to address all priority gap areas, specialties, and subspecialties at once. CMS is conducting supplemental environmental scans and gap analyses to address additional specialty and subspecialty gap areas

and to evaluate opportunities to adapt or adopt measures from other settings for the Quality Payment Program. As CMS conducts environmental scans and gap analyses, stakeholders such as specialty societies and patient advocacy groups are actively engaged to review and evaluate findings to ensure that the gaps and measure development opportunities identified are clearly conveyed and understandable. Additionally, the 2018 release of the triennial *National Impact Assessment of the Centers for Medicare & Medicaid Services Quality Measures Report* will frame overall measure priorities and gap analysis efforts in the context of achieving the goals and objectives of the CMS Quality Strategy.

Multi-Payer Applicability

In February 2016, leaders from CMS and America's Health Insurance Plans (AHIP) announced the release of a series of core measure sets under the Core Quality Measures Collaborative (CQMC).[22] The initial core measure sets provide the foundation for progressing multi-payer applicability. However, to achieve CMS goals for broader applicability of quality measures across programs, payers, and care settings, continued work is needed to improve measure alignment and strengthen the core measure sets agreed to by the CQMC. CMS participates in the CQMC to progress harmonization of quality measures across public and private programs. To broaden representation and enhance important multi-stakeholder initiatives such as the CQMC and the Measure Applications Partnership (MAP),[23] CMS has increased awareness of opportunities for participation through improved outreach, messaging, and visibility of calls for public comment on proposed quality measures. The diverse perspectives within such initiatives contributed to the inclusion of many CQMC measures in the CY 2017 Quality Payment Program final rule.

In December 2016, NQF, under contract with CMS, released the *Variation in Measure Specifications – Sources and Mitigation Strategies Final Report*[24] to identify how, where, and why variation is occurring across current measures and opportunities to work toward reducing the incidence and impact of such variation.

Additional HHS Efforts to Support the MDP

Initiatives across CMS and, more broadly, across HHS and the private sector are driving advances in health information technology standards, innovation, data access and sharing, and operational processes. These advances, as highlighted below, support the implementation of key component areas within the MDP, including "Reducing the Burden of Data Collection and Reporting," "Consideration for Electronic Specifications," and "Streamlining Data Acquisition for Measure Testing." Collaboration and sustained progress in each of these areas are critical factors in implementing the MDP.

Reducing the Burden of Data Collection and Quality Measure Reporting

Clinicians utilize significant resources to meet quality measure reporting requirements. The activities required to meet these quality reporting requirements include data collection and data entry, changes to practice workflow and infrastructure to support these processes, and increased administrative duties, all of which contribute to the burden of quality reporting impacting clinicians and reduce time available for patient care. CMS and its federal partners recognize the challenges clinicians are experiencing and are collectively pursuing process improvements and innovation to reduce burden through private-sector engagement and open dialogue. The following efforts are examples of progress in these areas:

Driving Quality Improvement Collaborative on Data Integrity and Implementation – In December 2016, the ONC hosted private-sector users of health IT, including clinical providers and implementers, at a learning collaborative to emphasize and drive quality improvement based on user experiences and perspectives. Key objectives for the meeting included learning how clinical providers and practice sites measure and document their clinical processes; proposing methods to crowdsource prototypic workflows; and listening to suggestions from health IT users on approaches to improve electronic measure development. The collaborative aimed to facilitate rapid-cycle change through process improvement and workflow design driven by clinicians and implementers in the field. Based on feedback from the collaborative, ONC is considering ways to promote meaningful clinician-to-clinician knowledge sharing and innovation around best practices, lessons learned, and challenges in measure implementation, decision support, and quality reporting.

Progressing interoperability and information exchange – To progress toward this next era of interoperability and data exchange, ONC, in consultation with agencies across HHS, developed the *Federal Health IT Strategic Plan 2015–2020*.[5] The plan outlines the commitments of federal agencies that use or influence the use of health IT to expedite the availability of high-quality, accurate, secure, and relevant electronic health information for stakeholders across the nation. ONC also initiated a complementary planning effort with public and private partners to accomplish seamless and secure data flow, resulting in the publication of the *Shared Nationwide Interoperability Roadmap.*[25]

Considerations for Electronic Specifications

Electronic measures can reduce clinician burden by automating measure submission. However, current health IT standards are not adequate to fully automate measure reporting. Therefore, advancing health IT standards is essential in driving broader development, implementation, and use of electronic specifications for clinical quality measures, especially in priority gap areas such as care coordination and PRO-PMs. ONC works closely with CMS to drive the development and progression of industry standards through collaboration with stakeholders and standards-developing organization communities to support broader implementation and use of electronic clinical quality measures (eCQMs). These collaborative efforts have yielded progress in areas such as these:

- Evaluating limitations and deficiencies in current standards through close coordination with Health Level Seven® International (HL7®)[26] and Integrating the Healthcare Enterprise (IHE).[27]
- Coordinating with HL7® and IHE to progress industry standards for harmonizing clinical decision support and eCQM standards through the Fast Healthcare Interoperability Resources (FHIR)-based Clinical Quality Framework.[28]
- Coordinating with the National Library of Medicine's Value Set Authority Center[29] to develop a new value set collaboration tool.
- Promoting broader transparency and communication of the standards used within HHS eCQMs through the Electronic Clinical Quality Improvement (eCQI) Resource Center.[30]
- Improving stakeholder feedback mechanisms specific to eCQM specifications, standards, and implementation (e.g., JIRA).[31]

- Implementing a prepublication process for eCQM annual updates to allow health IT vendors to test proposed changes in measures prior to final publication of the updated specifications.[4]

Streamlining Data Acquisition for Measure Testing

Robust testing ensures that measures used by CMS will function as intended to attain quality improvement goals. Data availability is a current barrier to measure developers. Therefore, greater data transparency, integration, and consolidation are critical in promoting robust measure testing and implementation processes across the public and private sectors. As an example, health IT vendors working with select regions participating in the Comprehensive Primary Care Plus initiative have made important strides by integrating and aggregating Medicare and commercial payer claims data into feedback reports available to participating practices. CMS regards clinicians, health IT vendors, and QCDRs as important partners in ensuring needed clinical data are available in actionable formats and in a timely manner to support measure development and testing.

Based on feedback from the measure development community, CMS has improved Bonnie, a software tool designed for streamlined pretesting of eCQMs to verify the behavior of measure logic against a set of patient test cases.[32] To support the evolution of health IT standards such as Clinical Quality Language (CQL), a learning tool has been incorporated into Bonnie to test CQL logic. The current version of Bonnie also includes enhanced measure versioning to better align with and support the NQF packaging and submission process.

CMS also works with the NQF Measure Incubator™,[33] a privately funded initiative that facilitates efficient measure development and testing (including but not limited to eCQMs) through innovation, collaboration, and partnership. With a focus on addressing critical health care areas with few or no quality measures, the NQF Measure Incubator is currently facilitating the development of eight measures, including four PRO-PMs. These efforts are conducted with private funding but support many of the principles of the MDP, including development of broader quality measures and testing using electronic specifications.

Accounting for Social Risk Factors in Quality Measurement Programs

Social risk factors such as income, education, race and ethnicity, employment, disability, community resources, and social support (certain factors of which are sometimes referred to as socioeconomic status [SES] factors or socio-demographic status [SDS] factors) play a major role in health. A core objective for CMS, clinicians, and other care providers is to improve beneficiary outcomes, including reducing health disparities, and ensure that all beneficiaries, including those with social risk factors, receive high-quality care.

On December 21, 2016, the Office of the Assistant Secretary for Planning and Evaluation (ASPE) submitted the first of several reports[34] required under section 2(d) of the Improving Medicare Post-Acute Care Transformation (IMPACT) Act of 2014.[35] The first study analyzed the effects of certain social risk factors of Medicare beneficiaries on quality measures, resource use measures, and payment adjustments implemented in one or more of nine Medicare value-based purchasing programs.[34] The report also included considerations for strategies to account for social risk factors in these programs. The National Academies of Sciences, Engineering, and Medicine has released several reports on social risk, including a January 10, 2017, report on

various potential methods for measuring and accounting for social risk factors, including stratified public reporting.[36] NQF has undertaken a two-year trial period in which new measures, measures undergoing maintenance review, and measures endorsed with the condition that they enter the trial can be assessed to determine whether risk adjustment for selected social risk factors is appropriate for these measures.

CMS will consider the analyses and recommendations from these and future reports to inform policy on accounting for social risk factors in performance measures, including implementing any legislative requirements to account for social risk. CMS plans to work with stakeholders to consider what method or combination of methods would be most appropriate for accounting for social risk factors and reducing health disparities in CMS quality measurement programs. CMS is committed to ensuring that beneficiaries have access to and receive excellent care and that the quality of care is assessed fairly in CMS programs.

Closing Measurement Gaps by Advancing the MDP

The CMS Quality Measure Development Plan provides the strategic framework for building and implementing a measure portfolio to support the Quality Payment Program. CMS anticipates updating the MDP, as deemed appropriate, to reflect the status of measure inventories and performance gaps, prioritize ongoing measure development, and refine approaches to achieve the operational requirements under MACRA.

Since the publication of the MDP, foundational work has been undertaken to support measure development and to inform the content for this MDP Annual Report and future iterations of the MDP. The pillars supporting this work are the environmental scan and gap analysis of clinician measures, focused on the initial gaps and priorities identified in the MDP and aligned with the domains in the CMS Quality Strategy, and the formation of the multi-stakeholder TEP, both of which are detailed below.

The environmental scan identified existing measures that could address previously identified gaps; some of these measures are included in the CY 2017 Quality Payment Program final rule.[37] Others can be considered later to address additional gaps. The *CMS MDP Environmental Scan and Gap Analysis Report* defines gaps at the subtopic level to focus measure development more precisely within the initial domains, topics, and specialties the MDP prioritized.

The findings from the environmental scan and gap analysis formed the basis of assessments by the TEP, representing a range of external stakeholder perspectives. The TEP further analyzed the gap areas and rated the importance of subtopics for each of the specialties. The TEP ratings and discussions identified a prioritized set of 12 subtopics for initial measure development that would address gaps identified in the MDP.

In response to a request from the TEP to share the findings with external stakeholders, CMS publicly posted the *CMS MDP Environmental Scan and Gap Analysis Report*[6] and the *MDP TEP Meeting Summary*[38] to the CMS.gov website in February 2017.

CMS MDP Environmental Scan and Gap Analysis Report

The *CMS MDP Environmental Scan and Gap Analysis Report* was prepared to further examine the initial gaps and priorities previously identified in Section V of the MDP. The methodology followed an eight-step process that aligns with the MMS Blueprint.[19]

1. Identify the scope of the environmental scan, according to initial domains, topics, and specialties prioritized in the MDP.
2. Develop the conceptual framework.
3. Identify the quality measure subtopics.
4. Map the measure subtopics to the conceptual framework.
5. Scan existing measures.
6. Classify existing measures by topic/subtopic/specialty.
7. Identify measure gap areas.
8. Present results to the TEP and identify priority measure topics and subtopics.

The information gathered in the gap analysis was organized into a conceptual framework (Appendix C, Table 6) based on the six prioritized domains, 11 topics, and seven specialties included in Section V of the MDP.[3] To identify more detailed measure gaps, subtopics were identified from federal reports, multi-stakeholder groups, public comments on the draft MDP and Quality Payment Program proposed rule, and the PQRS preferred measure sets. The resulting 138 subtopics were mapped to the domains, topics, and specialties of the conceptual framework in preparation for the scan of existing measures (Appendix C, Table 7).

To provide context for the terminology used in this section, operational definitions are provided in Table 1. The discussion of gaps is focused at the topic and subtopic level within the domains of the CMS Quality Strategy and the National Quality Strategy.

Table 1: Operational Definitions of Terms Used in CMS MDP Environmental Scan and Gap Analysis Report

Term	Operational Definition	Example
Domain	Highest-level categorization of quality measures that reflects the desired attributes of health care. Derived from the six priorities/goals of the National and CMS quality strategies.	Patient Safety
Topic	Broad area of care outcomes identified in the conceptual framework	Medication Safety
Subtopic	Structure, process, or outcome of care described in more detail within a given topic area.	Adverse drug events related to anticoagulants

The sources scanned for clinician-level quality measures included large, publicly available quality measure databases, including the NQF Quality Positioning System (NQF QPS),[39] National Quality Measures Clearinghouse (NQMC),[40] and CMS Measures Inventory,[41] as well as databases of CMS public reporting programs, other federal agencies, and other organizations and health care systems. As the scan occurred during the public comment period for the Quality Payment Program proposed rule,[42] published in the *Federal Register* in May 2016, that was also reviewed to determine how many of the proposed measures for MIPS would address the priority gaps, domains, and specialties identified in the MDP and subsequently in this environmental scan. Upon the release of the CY 2017 Quality Payment Program final rule on November 4, 2016,[37] the measures identified as relevant to the MDP priorities and included in the conceptual framework were reviewed and confirmed to be included in the Quality Payment Program.

Measures developed at the individual clinician level of analysis and for which measure information was readily accessible were included in the scan. In total, 989 measures (Appendix C, Figure 3) were scanned from the sources described above, 604 of which were relevant to individual clinician quality measurement. Of the 604 measures, 159 measures were applicable to the topics, subtopics, and specialties included in the MDP and were mapped to a single topic/subtopic/specialty combination in the conceptual framework (Appendix C, Table 7). Of these 159 measures, 67 were included in the CY 2017 Quality Payment Program final rule.

The mapping of the 159 measures to the conceptual framework highlighted measurement gaps in high-priority subtopics to be considered for future measure development. Table 2 lists by specialty the 63 percent of subtopics (88/138) for which no measures were identified.

Table 2: Overview of Gaps Identified by Priority Domain, Topic, and Specialty-Specific Subtopics

CMS Quality Domain/ MACRA Domain	Topic	Specialty-Specific Subtopics With No Measures[xxi]
Effective Treatment/ Clinical Care	Outcomes	**General Medicine/Crosscutting:** Care goal achievement; multiple chronic/complex conditions **Oncology:** Care goal achievement; disease-free survival for X years; five-year cure rate; outcomes for medical, surgical, radiation treatment; pain control; specific cancer survival rates; stage-specific survival rates **Orthopedic Surgery:** Adverse events surrounding surgery (post-operative cellulitis, pneumonia, etc.); complications from procedures; ED visits post-surgery; length of stay; return to surgery **Palliative Care:** Maintaining dignity and independence; symptom management
	Patient-reported outcome measures (PRO-PMs) [related to clinical care]	**General Medicine/ Crosscutting:** Care goal achievement **Mental Health/Substance Use Conditions:** Care goal achievement; health-related QOL; patient activation/engagement **Oncology:** Care goal achievement; functional status pre/post treatment; health-related QOL; patient activation/ engagement **Orthopedic Surgery:** Care goal achievement; health-related QOL; patient activation/engagement **Palliative Care:** Care goal achievement; functional status pre/post treatment; health-related QOL
Patient Safety/ Safety	Diagnostic accuracy	**General Medicine/Crosscutting:** Diagnostic accuracy **Mental Health/Substance Use Conditions:** Diagnostic accuracy **Orthopedic Surgery:** Diagnostic accuracy **Oncology:** Diagnostic accuracy **Pathology:** Diagnostic accuracy **Radiology:** Cancer detection
	Medication safety	**General Medicine/Crosscutting:** Adverse drug events (diabetic agents) **Mental Health/Substance Use Conditions:** Medication management/reconciliation; opioids **Oncology:** Medication side effects **Orthopedic Surgery:** Medication side effects **Palliative Care:** Medication side effects **Radiology:** Contrast-related adverse events

[xxi] Specialties from Section V of CMS MDP not listed in each topic include: (1) specialties for which no subtopics were identified for a given topic; and (2) specialties for which measures were identified.

CMS Quality Domain/ MACRA Domain	Topic	Specialty-Specific Subtopics With No Measures[xxi]
Communication and Coordination/ Care Coordination	Assessing team-based care	**General Medicine/Crosscutting:** Bidirectional sharing of information; physical-mental health integration **Mental Health/Substance Use Conditions:** Physical-mental health integration **Orthopedic Surgery:** Surgical care continuum **Palliative Care:** Team-based care; team-based care plan **Pathology:** Correlation of findings; directed patient treatment decision support and care coordination efforts **Radiology:** Communication between radiologists and clinicians regarding final results reports; correlation of findings
	Effective use of new technology	**General Medicine/Crosscutting:** Telehealth **Mental Health/Substance Use Conditions:** Telehealth **Oncology:** Telehealth **Orthopedic Surgery:** Telehealth **Palliative Care:** Telehealth **Pathology:** Telehealth **Radiology:** Telehealth
Person and Family Engagement/ Patient and Caregiver Experience	Personal preference and shared decision-making	**General Medicine/Crosscutting:** Ability for care self-management; fidelity to care plan and attainment of goals; information provided at appropriate times; patient understanding **Mental Health/Substance Use Conditions:** Treatment options and/or care goal presented to determine patient preferences **Oncology:** Hospice and end of life metrics for medical oncology; treatment options and/or care goal presented to determine patient preferences **Radiology:** Diagnostic options consistent with patient preferences
	Patient-reported outcome performance measures (PRO-PMs) [related to patient experience]	**Oncology:** Patient/caregiver experience **Palliative Care:** Patient/caregiver experience
Healthy Living/ Population Health and Prevention	Population-level outcomes	**General Medicine/Crosscutting:** Community engagement; criminal justice; employment; healthy communities; life expectancy; overweight and obesity; preventive services; unintended pregnancy; well-being **Mental Health/Substance Use Conditions:** Alcohol/substance use; criminal justice; employment; tobacco use
	Detection/prevention of chronic disease	**Mental Health/Substance Use Conditions:** Tobacco use
Affordable Care	Appropriate use measures	**Mental Health/Substance Use Conditions:** Appropriate use **Orthopedic Surgery:** Appropriate use **Palliative Care:** Appropriate use **Pathology:** Appropriate use

In summary, 159 relevant measures were mapped to the conceptual framework. Sixty-seven of the 159 measures identified from the environmental scan were included in the CY 2017 Quality Payment Program final rule (Appendix C, Table 8). These 67 measures address some of the prioritized gaps identified in the MDP. The remaining 92 existing measures (Appendix C, Table 9) could be considered for future inclusion in the Quality Payment Program to address some of the remaining priority gaps. Furthermore, after the 159 relevant measures were mapped to the conceptual framework, measure gaps for subtopics were identified across all quality domains and specialties in the conceptual framework; 63 percent (88/138) of subtopics lacked associated existing measures (Appendix C, Table 7). These 88 subtopics identified in Table 2 represent exciting opportunities for new areas of measure development to support the Quality Payment Program in future years.

TEP Recommendations for Initial Measure Development

The TEP members received the draft *CMS MDP Environmental Scan and Gap Analysis Report* and the MDP as background to prepare for the rating of priority subtopics with gaps in measures. Each TEP member completed an online pre-assessment survey tool in advance of the meeting to rate the importance of the 88 subtopics for which no existing measures were identified. The TEP members rated the subtopics on a Likert scale of 1 (not at all important) to 9 (extremely important) and provided qualitative comments on each subtopic, based on individual expertise and stakeholder perspective. The results indicated that 73 of the 88 subtopics were rated important (median 7–9) and 15 of the 88 subtopics were rated moderately important (median 4–6). Next, the TEP ratings were analyzed and the selections ranked for each specialty, based on the highest median ratings and the least standard deviation within each specialty. Based on these rankings, 15 subtopics were selected for discussion and for a revised rating at the TEP meeting.

Table 3 displays the pre-assessment and post-assessment median ratings for each of the subtopics discussed at the TEP meeting. Subtopics highlighted in green are those that maintained the highest importance rating (median score 7–9) after the meeting discussion.

Table 3: TEP Ratings of Topics/Subtopics by Specialty

Specialty	Topic: Subtopic	Median Rating (Pre-Assessment)	Median Rating (Post-Assessment)
General Medicine/ Crosscutting	Outcomes: Multiple chronic/ complex conditions	8.0	8.0
	Diagnostic Accuracy: Diagnostic accuracy	8.0	7.0
	Personal Preference and Shared Decision-Making: Patient understanding	8.0	4.0*
Mental Health/ Substance Use	Medication Safety: Opioids	9.0	8.0
	Medication Safety: Medication management/reconciliation	8.0	5.0*
Palliative Care	Outcomes: Symptom management	9.0	9.0
	Outcomes: Maintaining dignity and independence	8.0	8.0

Specialty	Topic: Subtopic	Median Rating (Pre-Assessment)	Median Rating (Post-Assessment)
Oncology	Patient-Reported Outcome Measures (clinical): Functional status pre-/post treatment	8.0	7.0
	Outcomes: Stage-specific survival rates	8.0	7.0
Pathology	Assessing Team-Based Care: Directed patient treatment decision support and care coordination efforts[xxii]	7.0	8.0
	Assessing Team-Based Care: Correlation of findings	7.5	7.0
Radiology	Assessing Team-Based Care: Communication between radiologists and clinicians regarding final results reports	9.0	8.0
	Assessing Team-Based Care: Correlation of findings	7.0	7.0
Orthopedic Surgery	Outcomes: Return to surgery	8.0	7.0
	Assessing Team-Based Care: Surgical care continuum	8.0	6.0*

*Rated "moderately important"

In summary, TEP members recommended 12 subtopics across seven specialties for initial measure development to support the Quality Payment Program. Three subtopics initially rated during the pre-assessment as "important" (median rating 7–9) received subsequent ratings of "moderately important" (median rating 4–6). For the reasons cited below, these three subtopics are not recommended for initial measure development to support the Quality Payment Program:

General Medicine/Crosscutting: *Personal Preference and Shared Decision-Making: Patient understanding*
TEP members agreed this subtopic is very important but noted feasibility challenges in developing measures that address this subtopic. In addition, TEP members sought to ensure that performance measures developed include desirable attributes such as accurately reflecting the aspect of care being measured; avoiding unintended consequences of measurement; minimizing the burden of data collection; and not contributing to clinician burnout.

Mental Health/Substance Use: *Medication Safety: Medication management/reconciliation*
TEP members commented that medication reconciliation, while an important measure subtopic, is better suited as a crosscutting measure rather than a subtopic for mental health/substance use; that assessment accounts for the post-discussion rating of 5.0. Also, measures of medication reconciliation are already in use and can be used within the mental health/substance use specialties.

[xxii] In response to input from TEP members, the CMS measure development contractor removed the words "Timely and" from the original subtopic language of "Timely and directed patient treatment decision support," and the TEP provided input on the amended subtopic.

Orthopedic Surgery: *Assessing Team-Based Care: Surgical care continuum*
TEP members suggested that attribution for this subtopic may not be feasible for MIPS as a clinician-level measure, as the surgical care continuum can cross multiple provider groups with bundled services spanning a 90-day episode of care. Surgical care continuum services are bundled, making them better suited for an Advanced APM, where measurement could be applied to the health care team at either the hospital level or the level of an accountable care organization (ACO).

As a complement to the quantitative approach used to prioritize the subtopics for initial measure development, important qualitative themes surfaced during TEP discussions.

- Measures focused on care coordination and patient and family engagement that may be applicable across care settings will play an important role in the coming years in determining the success of team-based care.
- Many subtopics drew support in concept as important aspects of the quality of care provided to patients; however, TEP members noted that certain concepts would be difficult to design as quality measures—in particular, those subtopics related to communications between the provider and the patient/caregiver and between providers. These complex concepts, however, will likely provide important feedback on gaps in care across specialties and the continuum of care.

The conceptual framework used to guide the environmental scan and gap analysis is based on the initial priorities included in the Section V of the MDP; therefore, areas critical to clinical performance within primary care, such as continuity of care, and additional important concepts, including access to care, will be addressed as CMS continues to assess quality measures across settings. TEP members stressed the critical importance of incorporating these additional concepts into measure development priorities. This diverse group of stakeholders prioritized subtopics for initial measure development to fill known gaps in measures through thoughtful assessment, feedback, and discussion of subtopics. CMS will be considering these recommendations to address the needs of the Quality Payment Program.

Quality Measures Developed During the Previous Year

This subsection of the report summarizes a description of CMS measures intended for inclusion in MIPS or Advanced APMs, for which development was completed between April 16, 2015, and December 31, 2016, using an estimated $433,480 in Title XVIII funding obligated before the passage of MACRA.[xxiii] Table 4 summarizes the number of measures developed within the prioritized CMS Quality Strategy/MACRA quality domains and whether measures were electronically specified.

[xxiii] Measures included in Appendix D were not funded by MACRA section 1848(s)(6), as funding for development was obligated prior to the passage of MACRA, using existing CMS funds under Title XVIII.

Table 4: Summary of CMS-Funded Measures Developed

CMS Quality Domain/ MACRA Domain	# Developed 4/16/15–12/31/16	# Electronically Specified[xxiv]
Affordable Care	1	1
Communication and Coordination/Care Coordination	0	N/A
Effective Treatment/ Clinical Care	1	1
Healthy Living/Population Health and Prevention	0	N/A
Patient Safety/Safety	0	N/A
Person and Family Engagement/Patient and Caregiver Experience	1	1
Total	3	3

Between April 16, 2015, and December 31, 2016, CMS completed development of three measures across the CMS Quality Strategy domains of affordable care, effective treatment, and person and family engagement. These three process of care measures developed reflect the key tenets and principles outlined in the MDP, including the use of electronic specifications to reduce the burden of quality reporting.

Clinical process measures must have a strong scientific evidence base to demonstrate a linkage between the process being measured and improved outcomes. For example, appropriate statin therapy prescribed (clinical process) and adherence to the medication regimen can reduce a patient's cholesterol level (clinical outcome). A description of these three measures and applicability to the MACRA domains, priorities, and gaps identified in the MDP follows; detailed measure information appears in Appendix F.

1. *Appropriate Use of DXA Scans in Women Under 65 Years Who Do Not Meet the Risk Factor Profile for Osteoporotic Fracture:* This general medicine/crosscutting measure, focused on containing costs by measuring appropriate use, is applicable to the MACRA domain of affordable care and therefore could fill an important performance measure gap in this area.
2. *Cognitive Impairment Assessment Among Older Adults (75 Years and Older):* This general medicine/crosscutting measure is focused on identifying patients with documented results of a cognitive assessment during the measurement period using a standardized assessment tool or a patient/informant interview; the measure is applicable to the MACRA domain of patient and caregiver experience. Although important for tracking cognitive function over time, this measure does not align with the personal preference and shared decision-making and PRO-PM topic areas identified as performance measure gap priorities for this domain.
3. *Statin Therapy for the Prevention and Treatment of Cardiovascular Disease (QPP 438):* This general medicine/crosscutting measure, focused on the treatment of certain cardiovascular conditions with statins, is an electronically specified version of a measure included in the Quality Payment Program. This measure is applicable to the MACRA domain of clinical care.

[xxiv] Section 1848(s)(3)(B)(ii)(V)

Quality Measures in Development During the Previous Year

This subsection of the report summarizes a description of CMS measures intended for inclusion in MIPS or Advanced APMs that were in development (but not yet completed) between April 16, 2015, and December 31, 2016, using an estimated $3,774,123 in Title XVIII funding obligated from multiple sources prior to the passage of MACRA. Table 5 summarizes the number of measures in development within the prioritized CMS Quality Strategy/MACRA quality domains and whether measures were electronically specified. See Appendix E for a list of the measures and the measure stewards and developers.

Table 5: Summary of CMS-Funded Measures in Development[xxv,xxvi]

CMS Quality Domain/ MACRA Domain	# in Development 4/16/15–12/31/16	# Electronically Specified
Affordable Care	2	2
Communication and Coordination/Care Coordination	6	6
Effective Treatment/Clinical Care	8	8
Healthy Living/ Population Health and Prevention	0	N/A
Patient Safety/ Safety	6	6
Person and Family Engagement/Patient and Caregiver Experience	7	7
Total	29	29

These 29 measures on which development progressed between April 16, 2015, and December 31, 2016, included 22 targeting process of care, three care outcomes, and four patient-reported outcomes. All were being developed as eCQMs. As noted above, the combined expenditures for these 29 measures in development are estimated at $3,774,123, including $2,336,644 for 22 process measures, $760,887 for three outcome measures, and $676,592 for four PRO-PMs.

CMS continues to prioritize the development of measures driven by clinical outcomes and processes with strong evidence linked to improved outcomes. Process measures often are building blocks for future outcome measures, as they provide both the evidence base and a mechanism to ensure the data to calculate clinical outcomes are feasible to collect and submit. Therefore, process measures may be the first step in filling a measurement gap for a specific specialty or clinical condition. Priority measures such as appropriate use measures are typically designed as process measures, as they evaluate whether the appropriate clinical indications to support the provision of certain health care services (i.e., processes) are present. These can include services such as certain imaging studies for specific clinical conditions. Measure development and testing activities, as summarized in the CMS MMS subsection, are critical to vet and assess measure concepts prior to their implementation in the Quality Payment Program. These activities include a multi-staged approach to measure testing, consisting of alpha and beta test phases to assess various measure properties, including feasibility, usability, reliability, and validity. The development and testing processes inform CMS and stakeholders about the viability of a measure for broad-based implementation. These processes can be

[xxv] Section 1848(s)(3)(B)(iii)(I)

[xxvi] Measures included development in Appendix E were not funded by MACRA section 1848(s), as funding for development was obligated prior to the passage of MACRA, using existing CMS funds under Title XVIII.

conceived as a series of gates through which each measure must successfully pass to advance for consideration in CMS quality programs.

After preliminary testing, 11 of the 29 measures in development were suspended due to barriers in areas such as feasibility, reliability, and scientific evidence. (Appendix E, Table 12, includes information on the suspended measures.) Early identification of these types of issues during the measure testing phase is an integral and necessary part of the measure development process, as outlined in the MMS Blueprint.

The remaining 18 measures have been electronically specified, supporting a key tenet of the MDP. Additionally, seven of the 18 measures continuing development are directly applicable to the initial priorities and gaps identified in Section V of the MDP:

- Two measures are applicable to the CMS/MACRA quality domains of effective treatment/clinical care.
    - Both measures can be categorized within the topic of PRO-PMs and are applicable to the orthopedic surgery specialty and the priority subtopic of functional status pre/post orthopedic treatment/joint-specific.
- Three measures are applicable to the CMS/MACRA domains of patient safety/safety and to the topic of medication safety.
    - These measures pertain to the adverse drug event subtopics for anticoagulants, diabetic agents, and opioids and are applicable to the general medicine/crosscutting specialty.
- Two measures are applicable to the CMS/MACRA domains of communication and coordination/care coordination.
    - Both measures are applicable to the priority subtopic of communication between clinicians under the topic of assessing team-based care and address the general medicine/crosscutting specialty.

Of the 18 measures continuing development, 11 are applicable to additional priority areas within the CMS Quality Strategy (e.g., appropriate use measures). In addition, consistent with MACRA and CMS priorities for types of measures, two of the measures in development address clinical outcomes. Clinical outcome measures represent a high priority because the goal of process measures with a close link to clinical outcomes is to inform clinicians how to improve clinical practice with an objective of moving to clinical outcome measures.

- *Adverse Drug Events for Patients Taking Anticoagulant Medications in an Ambulatory Setting*
- *Diabetes: Hemoglobin A1c Overtreatment in the Elderly*

Detailed information on the 18 measures that are continuing development, including estimated time to completion, appears in Appendix E. CMS will consider these measures in development for inclusion in the Quality Payment Program once measure testing has been completed. CMS is aware that many organizations are actively developing quality measures for use by clinicians; therefore, CMS will promote broader collaboration with external measure development organizations through measure development opportunities funded under MACRA to advance clinician measures for the Quality Payment Program.

Inventory of Applicable Quality Measures

The inventory of applicable quality measures describes the universe of clinician measures available in 2017 for reporting by participants in the Quality Payment Program. The inventory consists of the 2017 MIPS measures, 2016 MIPS QCDR measures (for illustrative purposes only, as the 2017 MIPS QCDR measures will vary to some extent), and MIPS-comparable measures approved for use in 2017 Advanced APMs.

For this initial performance period, the measure portfolio for MIPS draws primarily from existing CMS quality and value-based purchasing programs. Selected measures were posted for stakeholder review and input through the rulemaking process, which culminated in the publication of the CY 2017 Quality Payment Program final rule on November 4, 2016, to take effect January 1, 2017.

2017 Inventory of MIPS Measures Published in the CY 2017 Quality Payment Program Final Rule

The rule lists 271 quality measures available for the 2017 performance period, including 73 intermediate outcome or outcome measures, 182 process measures, and nine efficiency measures; the remainder are structural or patient engagement/experience measures. CMS demonstrated a commitment to address important gap areas by incorporating 67 measures that directly align with the initial priorities in the MDP. An interactive tool to view the comprehensive list of measures is available at https://qpp.cms.gov/measures/quality.

MIPS Qualified Clinical Data Registry Measures

CMS permits clinicians who can actively participate in MIPS to report through QCDRs, which provide CMS-approved measures specific to each registry (formally referred to as "non-MIPS measures") in addition to MIPS measures. QCDRs expand options for clinicians who otherwise lack sufficient quality measures applicable to their specialties. For the 2017 MIPS performance period, CMS approved 113 QCDRs in Version 1 of the *2017 CMS-Approved Qualified Clinical Data Registry Measures (QCDRs) Vendor List*, 16 of which focus on clinical specialties included in the MDP as initial priorities: mental health (two), oncology (five), orthopedic surgery (five), palliative care (one), pathology (two), and radiology (one). Additional QCDRs are applicable to the general medicine/crosscutting specialty. Of these 113 QCDRs, each contains at least one outcome measure (or a high-priority measure if an outcome measure is not available), consistent with the 2017 requirement for clinicians reporting under MIPS. CMS plans to post the Version 2 of the QCDR qualified posting in June 2017 as the final version of 2017 QCDRs, which may contain additional approved measures specific to some of the QCDRs. The approved 2017 MIPS QCDRs and corresponding measures list are located at: https://qpp.cms.gov/docs/QPP_2017_CMS_Approved_QCDRs.pdf.

Beginning with the 2018 performance period, an earlier nomination process (September 1 to November 1 of the prior year) will ensure earlier public posting of the approved QCDRs and corresponding measure specifications.

CMS Advanced APM Quality Measures

The CMS Innovation Center tests new payment and service delivery models to reduce program expenditures while preserving or enhancing the quality of care for Medicare, Medicaid, and CHIP beneficiaries. The CMS Innovation Center tests models with a wide range of clinician participants, including those in small practices and rural areas. Clinicians participating in CMS Innovation Center models can share in savings or receive additional payments, as provided under each model, to provide high-quality, cost-efficient care for a clinical condition, an episode of care, or a specific population.

In addition, CMS conducts demonstrations and administers the Shared Savings Program under other statutory authorities. Certain models and initiatives from sources undertaken with payers other than Medicare meet the criteria to be Other Advanced APMs.

Advanced APMs base payment for items and services in part on MIPS-comparable quality measures, meaning the measures are reliable and valid and have an evidence-based focus. See Appendix F for the list of MIPS-comparable measures for each Advanced APM included in the 2017 Quality Payment Program.

III. Conclusion and Next Steps

CMS is strongly committed to improving quality measures and reducing the reporting burden for clinicians, as well as demonstrating transparency and responsiveness to stakeholders. This commitment is demonstrated by the progress CMS is making in implementing the requirements of section 102 of MACRA since the posting of the MDP. The 2017 MDP Annual Report will serve as an important baseline for future annual reports and revisions to the MDP as appropriate, based on measure development activities anticipated to begin in 2017. Through sustained progress, CMS will improve measurement processes and implement measures for the Quality Payment Program that are meaningful and impactful to clinicians and the persons they serve.

CMS has advanced the strategic approaches outlined in the MDP with respect to multi-payer applicability, coordination and sharing across measure developers, gap analysis, streamlining data acquisition for measure testing, and electronic specification of measures. CMS is heeding the voices of person, families, and caregivers as well as frontline clinicians and professional societies to accomplish these objectives.

MACRA requires an annual accounting of clinician quality measures developed or intended for the Quality Payment Program using Medicare funds. In this 2017 annual report, CMS provides a summary of clinician quality measure development activities and expenditures for 32 measures and includes details about each measure, as well as an inventory of measures for the 2017 Quality Payment Program (Appendices D, E, and F). While development began for most of the measures prior to the passage of MACRA, many measures reflect the key tenets and principles outlined in the MDP. The environmental scan and gap analysis, coupled with recommendations by the TEP, provide a guidepost for potential measure development: 88 subtopics were specified as performance measurement gaps, of which the TEP recommended 12 (Table 3) to consider for initial measure development to support the Quality Payment Program.

Through the foundational work described in this report, CMS, in partnership with patients and stakeholders, is undertaking strategic steps to advance measurement for the Quality Payment Program and implement the key tenets of the MDP:

- CMS has announced the intention to provide funding assistance specifically designated to support external stakeholder efforts to develop, improve, update or expand quality measures for use in the Quality Payment Program: https://www.grants.gov/web/grants/view-opportunity.html?oppId=293852
- CMS will rapidly advance and prioritize measure gaps identified through this report for future development and formally announce funding opportunities to support these efforts. Initial measure development opportunities will be based on the recommendations of the MDP TEP, driven by the priorities and principles within the MDP and firmly rooted in emphasizing the voice of the patient and frontline clinician in the measure development process.
- CMS will focus on clinical and patient-reported outcomes, when feasible and appropriate, in support of the overarching CMS goal to move the clinician measure portfolio toward measurement of care outcomes and away from process measures that do not have a clear link to clinical outcomes.
- CMS will expand the conceptual framework and gap analyses to identify opportunities for measure development for additional specialties and subspecialties.

- Finally, CMS will evaluate the existing clinician measurement portfolio to ensure that current measures function as intended and reflect the realities of clinical practice.

Guided by the General and Technical Principles outlined in the MDP, CMS and measure developers will maximize the value of measurement through a consistent and systematic approach to identify, select, and develop measures driven by clinical outcomes and processes with strong evidence linked to improved outcomes.

Through these efforts, CMS will assemble a portfolio of measures that provide meaningful data to clinicians to improve the quality of care and the health of a diverse population, thus achieving the goals of the CMS Quality Strategy and the Quality Payment Program Strategic Plan.

References

1. Medicare Access and CHIP Reauthorization Act of 2015, Pub. L. No. 114–10 §101(b). 129 Stat. 87, 91, (2015).
2. Centers for Medicare & Medicaid Services. Quality Payment Program. Baltimore, MD: US Department of Health and Human Services; 2017. https://qpp.cms.gov/. Accessed February 6, 2017.
3. Centers for Medicare & Medicaid Services. *CMS Quality Measure Development Plan: Supporting the Transition to the Merit-based Incentive Payment System (MIPS) and Alternative Payment Models (APMs).* Baltimore, MD: US Department of Health and Human Services; 2016. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/Final-MDP.pdf. Accessed January 20, 2017.
4. Centers for Medicare & Medicaid Services. Person and Family Engagement. Baltimore, MD: US Department of Health and Human Services; 2016. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/Person-and-Family-Engagement.html. Accessed February 22, 2017.
5. The Office of the National Coordinator for Health Information Technology (ONC), Office of the Secretary, US Department of Health and Human Services. *Federal Health IT Strategic Plan 2015–2020.* Baltimore, MD: US Department of Health and Human Services; 2015. https://www.healthit.gov/sites/default/files/9-5-federalhealthitstratplanfinal_0.pdf. Accessed January 23, 2017.
6. Center for Clinical Standards and Quality, Centers for Medicare & Medicaid Services. *CMS Quality Measure Development Plan Environmental Scan and Gap Analysis Report (MACRA, Section 102).* Baltimore, MD: Centers for Medicare & Medicaid Services; 2017. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/MDP_EScan_GapAnalysis_Report.pdf. Accessed March 23, 2017.
7. Centers for Medicare & Medicaid Services. The Medicare Access & CHIP Reauthorization Act of 2015 Path to Value. Baltimore, MD: US Department of Health and Human Services; 2015. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/MACRA-LAN-PPT.pdf. Accessed September 29, 2016.
8. Centers for Medicare & Medicaid Services. What's the Merit-based Incentive Payment System (MIPS)? Baltimore, MD: Centers for Medicare & Medicaid Services, https://qpp.cms.gov/learn/qpp. Accessed February 16, 2017.
9. Centers for Medicare & Medicaid Services. Comprehensive ESRD Care Model. Baltimore, MD: US Department of Health and Human Services; 2017. https://innovation.cms.gov/initiatives/Comprehensive-ESRD-care/. Accessed January 23, 2017.
10. Centers for Medicare & Medicaid Services. Comprehensive Primary Care Plus. Baltimore, MD: US Department of Health and Human Services; 2017. https://innovation.cms.gov/initiatives/comprehensive-primary-care-plus. Accessed January 23, 2017.

11. Centers for Medicare & Medicaid Services. Shared Savings Program. Baltimore, MD: US Department of Health and Human Services; 2016. https://www.cms.gov/Medicare/Medicare-Fee-For-Service-Payment/sharedsavingsprogram/index.html. Accessed January 23, 2017.
12. Centers for Medicare & Medicaid Services. Next Generation ACO Model. Baltimore, MD: US Department of Health and Human Services; 2017. https://innovation.cms.gov/initiatives/Next-Generation-ACO-Model/. Accessed January 23, 2017.
13. Centers for Medicare & Medicaid Services. Oncology Care Model. Baltimore, MD: US Department of Health and Human Services; 2017. https://innovation.cms.gov/initiatives/oncology-care/. Accessed January 23, 2017.
14. Centers for Medicare & Medicaid Services. Comprehensive Care for Joint Replacement Model. Baltimore, MD: US Department of Health and Human Services; 2017. https://innovation.cms.gov/initiatives/cjr. Accessed March 20, 2017.
15. National Partnership for Women & Families. National Partnership for Women & Families. Washington, DC: National Partnership for Women & Families; 2017. http://www.nationalpartnership.org/?referrer=https://www.google.com/. Accessed January 23, 2017.
16. PatientsLikeMe. PatientsLikeMe. 2017. https://www.patientslikeme.com/. Accessed January 23, 2017.
17. Patient-Centered Outcomes Research Institute. Patient-Centered Outcomes Research Institute. Washington, DC; 2017. http://www.pcori.org/. Accessed January 23, 2017.
18. Centers for Medicare & Medicaid Services. *Person and Family Engagement Strategy.* Baltimore, MD: US Department of Health and Human Services; 2016. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/Downloads/Person-and-Family-Engagement-Strategic-Plan-12-12-16.pdf. Accessed March 2, 2017.
19. Centers for Medicare & Medicaid Services. *Blueprint for the CMS Measures Management System Version 13.0.* Baltimore, MD: US Department of Health and Human Services; 2017. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/Downloads/Blueprint-130.pdf. Accessed May 18, 2017.
20. Centers for Medicare & Medicaid Services. Quality Payment Program - Small, Underserved, & Rural Support: Support for Small Practices. Baltimore, MD: US Department of Health and Human Services; 2017. https://qpp.cms.gov/docs/QPP_Support_for_Small_Practices.pdf. Accessed May 5, 2017.
21. Centers for Medicare & Medicaid Services. *Transforming Clinical Practice Initiative Support and Alignment Networks 2.0 Funding Opportunity Announcement Frequently Asked Questions.* Baltimore, MD: US Department of Health and Human Services; 2016. https://innovation.cms.gov/Files/x/tcpi-faqs-sanrd2.pdf. Accessed May 5, 2017.
22. Centers for Medicare & Medicaid Services. Core Measures. Baltimore, MD: US Department of Health and Human Services; 2016. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/Core-Measures.html. Accessed January 19, 2017.
23. National Quality Forum. Measure Applications Partnership. Washington, DC: National Quality Forum;

2017. http://www.qualityforum.org/Setting_Priorities/Partnership/Measure_Applications_Partnership.aspx. Accessed January 23, 2017.
24. National Quality Forum. *Variation in Measure Specifications: Sources and Mitigation Strategies Final Report.* Washington, DC: National Quality Forum; 2016. http://www.qualityforum.org/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=84176. Accessed May 18, 2017.
25. The Office of the National Coordinator for Health Information Technology (ONC). *Connecting Health and Care for the Nation: A Shared Nationwide Interoperabiity Roadmap.* Baltimore, MD: US Department of Health and Human Services; 2017. https://www.healthit.gov/sites/default/files/hie-interoperability/nationwide-interoperability-roadmap-final-version-1.0.pdf. Accessed January 23, 2017.
26. Health Level Seven® International (HL7®). Health Level Seven® International. 2017. http://www.hl7.org. Accessed February 14, 2017.
27. Integrating the Healthcare Enterprise. Integrating the Healthcare Enterprise. 2017. https://www.ihe.net. Accessed February 14, 2017.
28. Fast Healthcare Interoperability Resources (FHIR). FHIR-Based Clinical Quality Framework. 2017. http://wiki.hl7.org/index.php?title=Clinical_Quality_Information_Work_Group. Accessed February 14, 2017.
29. US National Library of Medicine. NLM Value Set Authority Center. Bethesda, MD: US National Library of Medicine; 2017. https://vsac.nlm.nih.gov/. Accessed January 23, 2017.
30. eCQI Resource Center. Electronic Clinical Quality Improvement (eCQI). Baltimore, MD: US Department of Health and Human Services. https://ecqi.healthit.gov/ecqi. Accessed January 23, 2017.
31. The Office of the National Coordinator for Health Information Technology (ONC). ONC Issue Tracking System. Baltimore, MD: US Department of Health and Human Services; 2017. https://oncprojectracking.healthit.gov/. Accessed January 24, 2017.
32. Centers for Medicare & Medicaid Services, The Office of the National Coordinator for Health Information Technology (ONC), eCQI Resource Center. Bonnie. Baltimore, MD: US Department of Health and Human Services; 2017. https://ecqi.healthit.gov/ecqm-tools/tool-library/bonnie. Accessed March 3, 2017.
33. National Quality Forum. NQF Measure Incubator™. Washington, DC: National Quality Forum; 2017. https://www.qualityforum.org/NQF_Measure_Incubator.aspx. Accessed January 26, 2017.
34. Office of the Assistant Secretary for Planning and Evaluation. *Report to Congress: Social Risk Factors and Performance Under Medicare's Value-Based Purchasing Programs.* Washington, DC: US Department of Health and Human Services; 2016. https://aspe.hhs.gov/system/files/pdf/253971/ASPESESRTCfull.pdf. Accessed March 20, 2017.
35. Improving Medicare Post-Acute Care Transformation (IMPACT) Act of 2014, Pub. L. No. 113-185 (2014).
36. National Academies of Sciences Engineering and Medicine. *Accounting for Social Risk Factors in Medicare Payment.* Washington, DC: The National Academies Press; 2017.
37. Medicare Program; Merit-Based Incentive Payment System (MIPS) and Alternative Payment Model (APM) Incentive Under the Physician Fee Schedule, and Criteria for

Physician-Focused Payment Models; Final Rule. *Fed Regist*. 2016; 81(214):77008-77831.

38. Center for Clinical Standards and Quality, Centers for Medicare & Medicaid Services (CMS). *CMS Quality Measure Development Plan Technical Expert Panel Meeting Summary (MACRA, Section 102).* Baltimore, MD: Centers for Medicare & Medicaid Services; 2017. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/MDP_TEP_Nov17_MtgSummary.pdf. Accessed March 20, 2017.
39. National Quality Forum. Quality Positioning System. Washington, DC: National Quality Forum; 2016. http://www.qualityforum.org/QPS. Accessed March 10, 2017.
40. Agency for Healthcare Research and Quality. National Quality Measures Clearinghouse. Rockville, MD: US Department of Health and Human Services; 2015. https://www.qualitymeasures.ahrq.gov/. Accessed October 14, 2016.
41. Centers for Medicare & Medicaid Services. *CMS Measures Inventory.* Baltimore, MD: US Department of Health and Human Services; 2016. https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/CMS-Measures-Inventory.html. Accessed October 14, 2016.
42. Medicare Program; Merit-Based Incentive Payment System (MIPS) and Alternative Payment Model (APM) Incentive Under the Physician Fee Schedule, and Criteria for Physician-Focused Payment Models; Proposed Rule. *Fed Regist*. 2016; 81(89): 28161-28686.

Appendix A – MACRA Statutory Language Excerpts

Section 1848(s)(3)

‘(3) ANNUAL REPORT BY THE SECRETARY.—

‘‘(A) IN GENERAL.—Not later than May 1, 2017, and annually thereafter, the Secretary shall post on the Internet website of the Centers for Medicare & Medicaid Services a report on the progress made in developing quality measures for application under the applicable provisions.

‘‘(B) REQUIREMENTS.—Each report submitted pursuant to subparagraph (A) shall include the following:

‘‘(i) A description of the Secretary’s efforts to implement this paragraph.

‘‘(ii) With respect to the measures developed during the previous year—

‘‘(I) a description of the total number of quality measures developed and the types of such measures, such as an outcome or patient experience measure;

‘‘(II) the name of each measure developed;

‘‘(III) the name of the developer and steward of each measure;

‘‘(IV) with respect to each type of measure, an estimate of the total amount expended under this title to develop all measures of such type; and

‘‘(V) whether the measure would be electronically specified.

‘‘(iii) With respect to measures in development at the time of the report—

‘‘(I) the information described in clause (ii), if available; and

‘‘(II) a timeline for completion of the development of such measures.

‘‘(iv) A description of any updates to the plan under paragraph (1) (including newly identified gaps and the status of previously identified gaps) and the inventory of measures applicable under the applicable provisions.

‘‘(v) Other information the Secretary determines to be appropriate.”

Section 1848(s)(6)

‘‘(6) FUNDING.—For purposes of carrying out this sub-section, the Secretary shall provide for the transfer, from the Federal Supplementary Medical Insurance Trust Fund under section 1841, of $15,000,000 to the Centers for Medicare & Medicaid Services Program Management Account for each of fiscal years 2015 through 2019. Amounts transferred under this paragraph shall remain available through the end of fiscal year 2022.

Appendix B – TEP Composition

MDP Technical Expert Panel Membership List

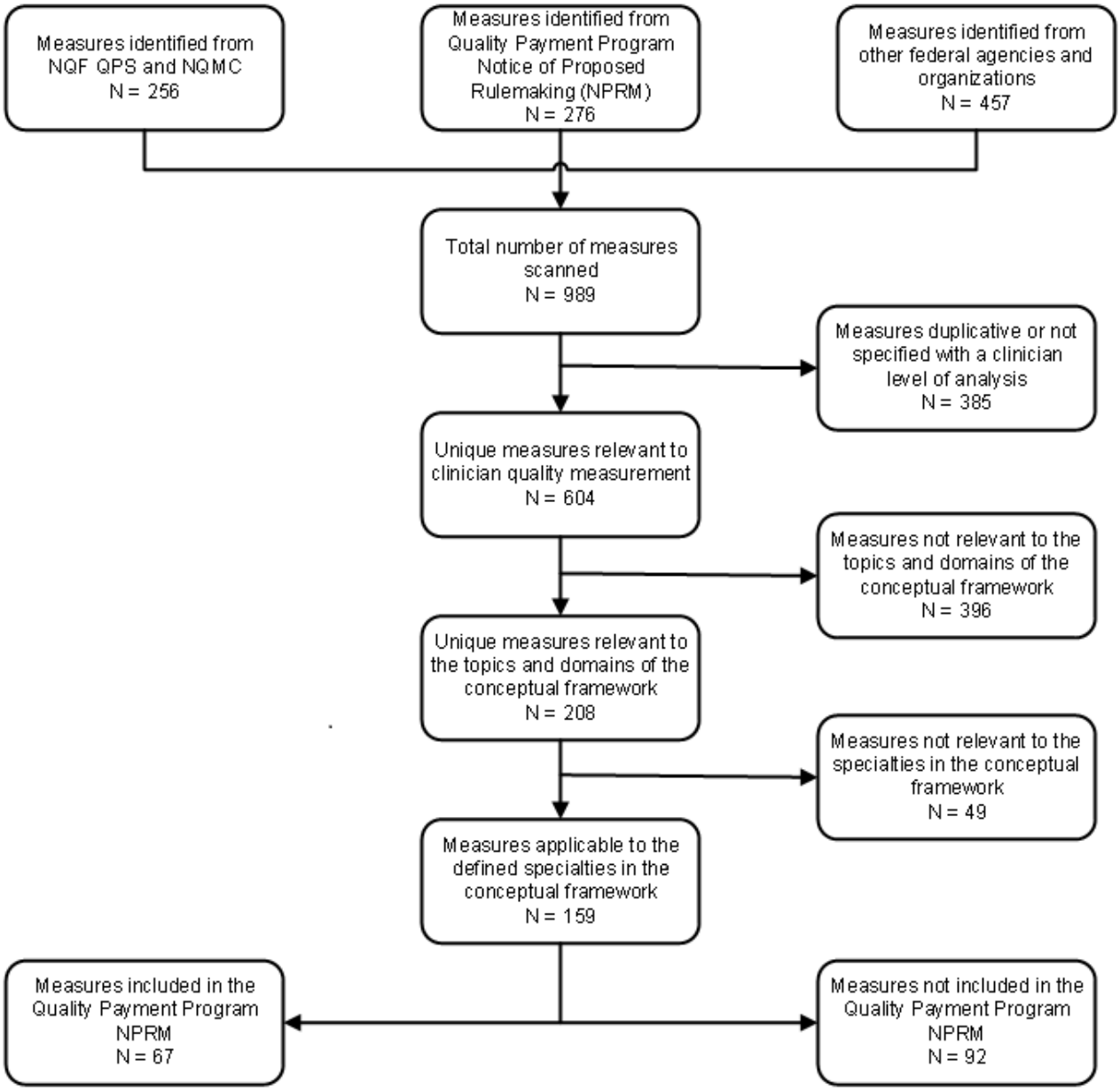
The following Technical Expert Panel (TEP) members contributed input and insight into the development of this report.

Name, Credentials	Professional Role	Organizational Affiliation, City, State
Peter Aran, MD	Medical Director, Population Health Management	Blue Cross Blue Shield of Oklahoma, Tulsa, OK
Eileen Barrett, MD, MPH, FACP	Assistant Professor of Medicine	University of New Mexico School of Medicine, Albuquerque, NM
Michael Brown, DO	Assistant Chief Medical Informatics Officer Family Physician	Mosaic Life Care Heartland Regional Medical Center, St. Joseph, MO
Diana Cardona, MD, FCAP	Associate Professor of Pathology; Chief, Bone & Soft Tissue Pathology Section Medical Director of Histology and Immunopathology Laboratories	Duke University Medical Center, Durham, NC
Rebecca Etz, PhD	Associate Professor, Department of Family Medicine and Population Health	Virginia Commonwealth University School of Medicine, Richmond, VA
Matthew Fitzgerald, DrPH	Senior Director; Executive Director, Physician Quality Measure Management Contract Public Board Director	Signature Consulting Group Inc., Windsor Mills, MD American Board of Ophthalmology, Bala Cynwyd, PA
Lisa Gall, DNP, RN, FNP, LHIT-HP	Clinical Program Manager Family Nurse Practitioner (part-time)	Stratis Health, Bloomington, MN CentraCare Health (rural hospital/ urgent care center)
Stephanie Glier, MPH	Senior Manager, Consumer-Purchaser Alliance	Pacific Business Group on Health, San Francisco, CA
Jerry Halverson, MD	Medical Director	Rogers Memorial Hospital, Oconomowoc, WI
Ernest Hymel, MD, PhD, MBA	Chief of Oncology Services Managing Partner/Practicing Radiation Oncologist	Baptist Hospital of Southeast Texas Golden Triangle Radiation Oncology, PLLC Beaumont, TX
Jesse James, MD, MBA *TEP Co-Chair*	Chief Medical Information Officer	Evolent Health, Arlington, VA
Warren Jones, MD, FAAFP	Director of Quality and Health Disparities	Provider Resources, Inc., Erie, PA
Jean Kutner, MD, MSPH, FAAHPM, FACP	Chief Medical Officer Associate Dean for Clinical Affairs	University of Colorado Hospital University of Colorado School of Medicine, Aurora, CO

Name, Credentials	Professional Role	Organizational Affiliation, City, State
Amy Mullins, MD, CPE, FAAFP	Medical Director, Quality Improvement	American Academy of Family Physicians (AAFP), Leawood, KS
Amy Nguyen Howell, MD, MBA, FAAFP	Chief Medical Officer	CAPG, Los Angeles, CA
Todd Pickard, MMSc, PA-C	Director of Physician Assistant Practice, Office of Vice President of Medical Affairs	University of Texas MD Anderson Cancer Center, Houston, TX
Daniel Roth, MD	Interim Senior Vice President, Clinical Integration Chief Operating Officer	Trinity Health Trinity Health Partners, Livonia, MI
David Seidenwurm, MD *TEP Co-Chair*	Medical Director, System Radiology Quality and Safety	Sutter Medical Group, Sacramento, CA
Adolph Yates, Jr., MD	Associate Professor	University of Pittsburgh Medical Center, Pittsburgh, PA
Stacy Zimmerman, MD, FACP, FAAP	Internal Medicine Associate Program Director and Clinical Leader of Patient Centered Medical Home Activities	Unity Health, Searcy, AR
Peggy Zuckerman, MSEd	Patient and Advocate	SmartPatients, LLC, Mountain View, CA
Caregiver (Name withheld upon request)		West Hartford, CT

Appendix C – Findings of the *CMS MDP Environmental Scan and Gap Analysis Report*

Figure 3: Results of Scan for Existing Clinician Measures



CMS MDP Environmental Scan and Gap Analysis Conceptual Framework

Table 6 presents the unpopulated conceptual framework used for the *CMS MDP Environmental Scan and Gap Analysis Report*, including the priority domains, topics, and specialties in Section V of the Measure Development Plan.

Table 6: Environmental Scan Conceptual Framework (Unpopulated)[xxvii]

CMS Quality Domain/ MACRA Domain	Topic Area	Specialty						
		General Medicine/ Crosscutting	Mental Health/ Substance Use Conditions	Oncology	Orthopedic Surgery	Palliative Care	Pathology	Radiology
Effective Treatment/ Clinical Care	Outcomes							
	PRO-PMs							
Patient Safety/ Safety	Diagnostic Accuracy							
	Medication Safety							
Communication and Coordination/ Care Coordination	Assessing Team-Based Care							
	Effective Use of New Technology							
Person and Family Engagement/ Patient and Caregiver Experience	Personal Preference and Shared Decision-Making							
	PRO-PMs							
Healthy Living/ Population Health and Prevention	Population-Level Outcomes							
	Detection/ Prevention of Chronic Disease							
Affordable Care	Overuse Measures							

[xxvii] *CMS MDP Environmental Scan and Gap Analysis Report:* https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/MDP_EScan_GapAnalysis_Report.pdf

Table 7 presents key findings of the *CMS MDP Environmental Scan and Gap Analysis Report,* including the priority subtopics mapped to the domains,[xxviii] topics, and specialties in the conceptual framework. The number of measures that pertain to each measure subtopic is included in parentheses ( ); the sum of these numbers corresponds to the 159 existing clinical measures identified in the *CMS MDP Environmental Scan and Gap Analysis Report* (see Figure 3). Subtopics highlighted in gray correspond to measures in the Quality Payment Program; cells shaded light blue indicate that a topic is not applicable to a specialty. Eighty-eight subtopics have measurement gaps, denoted by a (0).

Table 7: Environmental Scan Conceptual Framework (Populated)[xxix]

CMS Quality Domain/ MACRA Domain	Topic	Subtopics Within Initial Prioritized Specialties						
		General Medicine/ Crosscutting	Mental Health/ Substance Use Conditions	Oncology	Orthopedic Surgery	Palliative Care	Pathology	Radiology
Effective Treatment/ Clinical Care	Outcomes	- Care goal achievement (0) - Intermediate outcomes (e.g., HbA1c, BP) (17; 6 of 17 in QPP) - Medication adherence and persistence (4) - Multiple chronic/ complex conditions (0)	- Medication adherence and persistence (5; 1 of 5 in QPP) - Mortality (1) - Multiple chronic/ complex conditions (1) - Recovery-oriented outcomes (1) - Suicide (2)	- Care goal achievement (0) - Disease-free survival for X years (0) - Five-year cure rate (0) - Outcomes for medical, surgical, radiation treatment (0) - Pain control (0) - Specific cancer survival rates (0) - Stage-specific survival rates (0)	- Adverse events surrounding surgery (post-operative cellulitis, pneumonia, etc.) (0) - Complications from procedures (0) - ED visits post-surgery (0) - Length of stay (0) - Return to surgery (0)	- Comfort at end of life (1) - Maintaining dignity and independence (0) - Symptom management (0)	No subtopics identified	No subtopics identified

[xxviii] MACRA section 102 funds support the MDP and 2017 MDP Annual Report, which focus on quality measures; MACRA section 101 also supports efforts by CMS to develop measures for other MIPS performance categories, including episodic cost and resource use: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/MACRA-Feedback.html

[xxix] *CMS MDP Environmental Scan and Gap Analysis Report*: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/MDP_EScan_GapAnalysis_Report.pdf

CMS Quality Domain/ MACRA Domain	Topic	Subtopics Within Initial Prioritized Specialties						
		General Medicine/ Crosscutting	Mental Health/ Substance Use Conditions	Oncology	Orthopedic Surgery	Palliative Care	Pathology	Radiology
Effective Treatment/ Clinical Care	PRO-PMs	- Care goal achievement (0) - Functional status (3) - Health-related QOL (1) -Patient activation/ engagement (1)	- Care goal achievement (0) - Functional status (4; 2 of 4 in QPP) - Health-related QOL (0) - Patient activation/ engagement (0)	- Care goal achievement (0) - Functional status pre/post treatment (0) - Health-related QOL (0) - Patient activation/ engagement (0)	- Care goal achievement (0) - Functional status pre/post orthopedic treatment/joint specific (9; 7 of 9 in QPP) - Health-related QOL (0) - Patient activation/ engagement (0)	- Care goal achievement (0) - Functional status (0) - Health-related QOL (0)	No subtopics identified	No subtopics identified
Patient Safety/ Safety	Diagnostic Accuracy	- Diagnostic accuracy (0)	- Diagnostic accuracy (0)	- Diagnostic accuracy (0)	- Diagnostic accuracy (0)	No subtopics identified	- Diagnostic accuracy (0) - Timely diagnosis (0)	- Cancer detection (0) - Diagnostic accuracy (1)
	Medication Safety	- Adverse drug events (anticoagulants) (1) - Adverse drug events (diabetic agents) (0) - Antibiotic stewardship (4) - Inappropriate medication use (4; 1 of 4 in QPP) - Medication management/ reconciliation (5; 2 of 5 in QPP) - Medication side effects (1) - Opioids (2; 1 of 2 in QPP)	- Medication management/ reconciliation (0) - Medication side effects (5) - Opioids (0)	- Medication side effects (0)	- Medication side effects (0)	- Medication side effects (0)	No subtopics identified	- Contrast-related adverse events (0)

CMS Quality Domain/ MACRA Domain	Topic	Subtopics Within Initial Prioritized Specialties						
		General Medicine/ Crosscutting	Mental Health/ Substance Use Conditions	Oncology	Orthopedic Surgery	Palliative Care	Pathology	Radiology
Communication and Coordination/ Care Coordination	Assessing Team-Based Care	- Bidirectional sharing of information (0) - Communication between patient and provider (6) - Communication between providers (2) - Physical-mental health integration (0)	- Physical-mental health integration (0)	- Team-based care (1)	- Surgical care continuum (preoperative, perioperative, intraoperative, postoperative, and post-discharge) (0)	- Team-based care (0) - Team-based care plan (0)	- Communication between pathologists and clinicians regarding final results reports (1) - Correlation of findings (0) - Timely and directed patient treatment decision-support and care coordination efforts (0)	- Communication between radiologists and clinicians regarding final results reports (0) - Correlation of findings (0)
	Effective Use of New Technology	- Interoperability to enhance communication (1) - Telehealth (2)	- Telehealth (0)	- Telehealth (0)	- Telehealth (0)	- Telehealth (0)	- Telehealth (0)	- DICOM image availability (2) - Telehealth (0)
Person and Family Engagement/ Patient and Caregiver Experience	Personal Preference and Shared Decision-Making	- Ability for care self-management (0) - Fidelity to care plan and attainment of goals (0) - Information provided at appropriate times - Patient understanding (0) - Treatment options and/or care goal presented to determine patient preferences (2)	- Treatment options and/or care goal presented to determine patient preferences (0)	- Hospice and end of life metrics for medical oncology (0) - Treatment options and/or care goal presented to determine patient preferences (0)	- Treatment options and/or care goal presented to determine patient preferences (1)	- Hospice and end of life preferences (2; 1 of 2 in QPP)	No subtopics identified	- Diagnostic options consistent with patient preferences (0)
	PRO-PMs	- Patient/ caregiver experience (1)	- Patient/caregiver experience (4)	- Patient/caregiver experience (0)	- Patient/caregiver experience (1)	- Patient/caregiver experience (0)	No subtopics identified	No subtopics identified

CMS Quality Domain/ MACRA Domain	Topic	Subtopics Within Initial Prioritized Specialties						
		General Medicine/ Crosscutting	Mental Health/ Substance Use Conditions	Oncology	Orthopedic Surgery	Palliative Care	Pathology	Radiology
Healthy Living/ Population Health and Prevention	Population-Level Outcomes	- Alcohol/substance use (4) - Community engagement (0) - Criminal justice (0) - Employment (0) - Healthy communities (0) - Housing (1) - Life expectancy (0) - Overweight and obesity (0) - Preventive services (0) Tobacco use (5) - Unintended pregnancy (0) - Well-being (0)	- Alcohol/substance use (0) - Criminal justice (0) - Employment (0) - Housing (2) - Suicide (1) - Tobacco use (0)	No subtopics identified	No subtopics identified	No subtopics identified	No subtopics identified	No subtopics identified
	Detection/ Prevention of Chronic Disease	- Alcohol/substance use (1) - Immunizations (6; 2 of 6 in QPP) - Screening measures (16; 9 of 16 in QPP) - Tobacco use (3; 1 of 3 in QPP)	- Alcohol/substance use (1) - Screening measures (1) - Tobacco use (0)	No subtopics identified	No subtopics identified	No subtopics identified	No subtopics identified	No subtopics identified
Affordable Care	Overuse Measures	- Appropriate use (7; 6 of 7 in QPP)	- Appropriate use (0)	- Appropriate use (3; 2 of 3 in QPP) - ER Utilization (1) - Inpatient hospital admission rate (1)	- Appropriate use (0)	- Appropriate use (0)	- Appropriate use (0)	- Appropriate use (7; 6 of 7 in QPP)

Table 8: Existing Clinician Quality Measures Identified in MDP Environmental Scan Applicable to the Section V MDP Priorities and Included in CY 2017 Quality Payment Program Final Rule (n = 67)

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
1	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, BP)	0018	Controlling High Blood Pressure	National Committee for Quality Assurance
2	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, BP)	0059	Diabetes: Hemoglobin A1c Poor Control	National Committee for Quality Assurance
3	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, BP)	2082	HIV viral load suppression	Health Resources and Services Administration
4	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, BP)	N/A	Adult Kidney Disease: Blood Pressure Management	Renal Physicians Association
5	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, BP)	N/A	Optimal Asthma Control	MN Community Measurement
6	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, BP)	N/A	Hypertension: Improvement in Blood Pressure	Centers for Medicare & Medicaid Services
7	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.2-PRO-PMs	Health-related QOL	N/A	Quality of Life Assessment for Patients With Primary Headache Disorders	American Academy of Neurology
8	General Medicine/ Crosscutting	2-Patient Safety/ Safety	2.2-Medication Safety	Antibiotic stewardship	0058	Antibiotic Treatment for Adults With Acute Bronchitis: Avoidance of Inappropriate Use	National Committee for Quality Assurance
9	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Antibiotic stewardship	0069	Appropriate Treatment for Children with Upper Respiratory Infection (URI)	National Committee for Quality Assurance
10	General Medicine/ Crosscutting	2-Patient Safety/ Safety	2.2-Medication Safety	Antibiotic stewardship	N/A	Adult Sinusitis: Appropriate Choice of Antibiotic: Amoxicillin Prescribed for Patients with Acute Bacterial Sinusitis (Appropriate Use)	American Academy of Otolaryngology – Head and Neck Surgery
11	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Antibiotic stewardship	N/A	Adult Sinusitis: Antibiotic Prescribed for Acute Sinusitis (Appropriate Use)	American Academy of Otolaryngology – Head and Neck Surgery
12	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Inappropriate medication use	0654	Acute Otitis Externa: Systemic Antimicrobial Therapy – Avoidance of Inappropriate Use	American Academy of Otolaryngology – Head and Neck Surgery
13	General Medicine/ Crosscutting	2-Patient Safety/ Safety	2.2-Medication Safety	Medication management/ reconciliation	0097	Medication Reconciliation	National Committee for Quality Assurance
14	General Medicine/ Crosscutting	2-Patient Safety/ Safety	2.2-Medication Safety	Medication management/ reconciliation	0419	Documentation of Current Medications in the Medical Record	Centers for Medicare & Medicaid Services

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
15	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Medication side effects	0022	Use of High-Risk Medications in the Elderly	National Committee for Quality Assurance
16	General Medicine/ Crosscutting	2-Patient Safety /Safety	2.2-Medication Safety	Opioids	N/A	Evaluation or Interview for Risk of Opioid Misuse	American Academy of Neurology
17	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.1-Assessing Team-Based Care	Communication between providers	0045	Communication with the physician or other clinician managing on-going care post fracture for men and women aged 50 years and older	National Committee for Quality Assurance
18	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.1-Assessing Team-Based Care	Communication between providers	N/A	Closing the Referral Loop: Receipt of Specialist Report	National Committee for Quality Assurance
19	General Medicine/ Crosscutting	4-Person and Family Engagement/Experience	4.1-Personal Preference & Shared Decision-Making	Treatment options and/or care goal presented to determine patient preferences	0326	Advance Care Plan	National Committee for Quality Assurance
20	General Medicine/ Crosscutting	4-Person and Family Engagement/Experience	4.1-Personal Preference & Shared Decision-Making	Treatment options and/or care goal presented to determine patient preferences	N/A	Discussion and Shared Decision Making Surrounding Treatment Options	American Gastroenterological Association
21	General Medicine/ Crosscutting	4-Person and Family Engagement/Experience	4.2-PRO-PMs	Patient/caregiver experience	0005	CAHPS Clinician & Group Surveys (CG-CAHPS)-Adult, Child	Agency for Healthcare Research and Quality
22	General Medicine/ Crosscutting	5-Healthy Living/Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	0038	Childhood Immunization Status	National Committee for Quality Assurance
23	General Medicine/ Crosscutting	5-Healthy Living/Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	1407	Immunizations for Adolescents	National Committee for Quality Assurance
24	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	1395	Chlamydia Screening and Follow-up	National Committee for Quality Assurance
25	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	2372	Breast Cancer Screening	Centers for Medicare & Medicaid Services
26	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Tobacco Use	0024	Weight Assessment and Counseling for Nutrition and Physical Activity for Children and Adolescents	National Committee for Quality Assurance

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
27	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Tobacco Use	0046	Screening for Osteoporosis for Women 65-85 Years of Age	National Committee for Quality Assurance
28	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/Prevention of Chronic Disease	Tobacco Use	0418	Preventive Care and Screening: Screening for Clinical Depression and Follow-Up Plan	Centers for Medicare & Medicaid Services
29	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Appropriate use	0421	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up	Centers for Medicare & Medicaid Services
30	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Appropriate use	2152	Preventive Care and Screening: Unhealthy Alcohol Use: Screening & Brief Counseling	AMA-convened Physician Consortium for Performance Improvement
31	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Appropriate use	N/A	Preventive Care and Screening: Screening for High Blood Pressure and Follow-Up Documented	Centers for Medicare & Medicaid Services
32	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Appropriate use	N/A	Maternal Depression Screening	OptumInsight
33	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Medication adherence and persistence	0028	Preventive Care & Screening: Tobacco Use: Screening & Cessation Intervention	AMA-convened Physician Consortium for Performance Improvement
34	General Medicine/ Crosscutting	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0002	Appropriate Testing for Children with Pharyngitis	National Committee for Quality Assurance
35	General Medicine/ Crosscutting	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0658	Appropriate Follow-Up Interval for Normal Colonoscopy in Average Risk Patients	American Gastroenterological Association
36	General Medicine/ Crosscutting	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0659	Colonoscopy Interval for Patients with a History of Adenomatous Polyps-Avoidance of Inappropriate Use	American Gastroenterological Association
37	General Medicine/ Crosscutting	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0670	Cardiac stress imaging not meeting appropriate use criteria: Preoperative evaluation in low risk surgery patients	American College of Cardiology

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
38	General Medicine/ Crosscutting	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0671	Cardiac stress imaging not meeting appropriate use criteria: Routine testing after percutaneous coronary intervention (PCI)	American College of Cardiology
39	General Medicine/ Crosscutting	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0672	Cardiac stress imaging not meeting appropriate use criteria: Testing in asymptomatic, low risk patients	American College of Cardiology
40	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Medication adherence and persistence	1879	Adherence to Antipsychotic Medications for Individuals with Schizophrenia	Centers for Medicare & Medicaid Services
41	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.2-PRO-PMs	Functional status pre/post treatment	0710	Depression Remission at Twelve Months	MN Community Measurement
42	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.2-PRO-PMs	Functional status pre/post treatment	0711	Depression Remission at Six Months	MN Community Measurement
43	Oncology	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0210	Proportion receiving chemotherapy in the last 14 days of life	American Society of Clinical Oncology
44	Oncology	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0389	Prostate Cancer: Avoidance of Overuse of Bone Scan for Staging Low Risk Prostate Cancer Patients	AMA-convened Physician Consortium for Performance Improvement
45	Oncology	6-Affordable Care	6.1-Overuse Measures	ER utilization	0211	Proportion with more than one emergency room visit in the last days of life	American Society of Clinical Oncology
46	Oncology	6-Affordable Care	6.1-Overuse Measures	Inpatient hospital admission rate	0213	Proportion admitted to the ICU in the last 30 days of life	American Society of Clinical Oncology
47	Orthopedic Surgery	1-Effective Treatment/ Clinical Care	1.2-PRO-PMs	Functional status pre/post orthopedic treatment/joint specific	0422	Functional status change for patients with Knee impairments	Focus on Therapeutic Outcomes, Inc.
48	Orthopedic Surgery	1-Effective Treatment/ Clinical Care	1.2-PRO-PMs	Functional status pre/post orthopedic treatment/joint specific	0423	Functional status change for patients with Hip impairments	Focus On Therapeutic Outcomes, Inc.
49	Orthopedic Surgery	1-Effective Treatment/ Clinical Care	1.2-PRO-PMs	Functional status pre/post orthopedic treatment/joint specific	0424	Functional status change for patients with Foot and Ankle impairments	Focus on Therapeutic Outcomes, Inc.

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
50	Orthopedic Surgery	1-Effective Treatment/ Clinical Care	1.2-PRO-PMs	Functional status pre/post orthopedic treatment/joint specific	0425	Functional status change for patients with lumbar impairments	Focus on Therapeutic Outcomes, Inc.
51	Orthopedic Surgery	1-Effective Treatment/ Clinical Care	1.2-PRO-PMs	Functional status pre/post orthopedic treatment/joint specific	0426	Functional status change for patients with Shoulder impairments	Focus on Therapeutic Outcomes, Inc.
52	Orthopedic Surgery	1-Effective Treatment/ Clinical Care	1.2-PRO-PMs	Functional status pre/post orthopedic treatment/joint specific	0427	Functional status change for patients with elbow, wrist and hand impairments	Focus on Therapeutic Outcomes, Inc.
53	Orthopedic Surgery	1-Effective Treatment/ Clinical Care	1.2-PRO-PMs	Functional status pre/post orthopedic treatment/joint specific	0428	Functional status change for patients with General orthopaedic impairments	Focus on Therapeutic Outcomes, Inc.
54	Orthopedic Surgery	4-Person and Family Engagement/Experience	4.1-Personal Preference & Shared Decision-Making	Treatment options and/or care goal presented to determine patient preferences	N/A	Total Knee Replacement: Shared Decision-Making: Trial of Conservative (Non-surgical) Therapy	American Association of Hip and Knee Surgeons
55	Palliative Care	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Comfort at end of life	N/A	Pain Brought Under Control Within 48 Hours	National Hospice and Palliative Care Organization
56	Palliative Care	4-Person and Family Engagement/Experience	4.1-Personal Preference & Shared Decision-Making	Hospice and end of life preferences	N/A	Amyotrophic Lateral Sclerosis (ALS) Patient Care Preferences	American Academy of Neurology
57	Pathology	3-Communication/ Care Coordination	3.1-Assessing Team-Based Care	Communication between pathologists and clinicians regarding final results reports	N/A	Non-melanoma Skin Cancer (NMSC): Biopsy Reporting Time - Pathologist	American Academy of Dermatology
58	Radiology	2-Patient Safety/Safety	2.1-Diagnostic Accuracy	Diagnostic accuracy	0508	Diagnostic Imaging: Inappropriate Use of “Probably Benign” Assessment Category in Screening Mammograms	AMA-convened Physician Consortium for Performance Improvement
59	Radiology	3-Communication/ Care Coordination	3.2-Effective Use of New Technology	DICOM image availability	N/A	Optimizing Patient Exposure to Ionizing Radiation: Computed Tomography (CT) Images Available for Patient Follow-up and Comparison Purposes	American College of Radiology

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
60	Radiology	3-Communication/ Care Coordination	3.2-Effective Use of New Technology	DICOM image availability	N/A	Optimizing Patient Exposure to Ionizing Radiation: Search for Prior Computed Tomography (CT) Imaging Studies Through a Secure, Authorized, Media-Free, Shared Archive	American College of Radiology
61	Radiology	6-Affordable Care	6.1-Overuse Measures	Appropriate use	N/A	Appropriate Follow-up Imaging for Incidental Abdominal Lesions	American College of Radiology
62	Radiology	6-Affordable Care	6.1-Overuse Measures	Appropriate use	N/A	Appropriate Follow-Up Imaging for Incidental Thyroid Nodules in Patients	American College of Radiology
63	Radiology	6-Affordable Care	6.1-Overuse Measures	Appropriate use	N/A	Overuse of Neuroimaging for Patients With Primary Headache and A Normal Neurological Examination	American Academy of Neurology
64	Radiology	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0052	Use of Imaging Studies for Low Back Pain	National Committee for Quality Assurance
65	Radiology	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0562	Overutilization of Imaging Studies in Melanoma	American Academy of Dermatology
66	Radiology	6-Affordable Care	6.1-Overuse Measures	Appropriate use	N/A	Adult Sinusitis: Computerized Tomography (CT) for Acute Sinusitis (Overuse)	American Academy of Otolaryngology – Head and Neck Surgery
67	Radiology	6-Affordable Care	6.1-Overuse Measures	Appropriate use	N/A	Adult Sinusitis: More than One Computerized Tomography (CT) Scan Within 90 Days for Chronic Sinusitis (Overuse)	American Academy of Otolaryngology – Head and Neck Surgery

Table 9: Existing Clinician Quality Measures Identified in MDP Environmental Scan Applicable to the Section V MDP Priorities and Not Included in CY 2017 Quality Payment Program Final Rule (n = 92)

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
1	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	N/A	DM: BP GE 160/100 or not done (OP)	Veterans Health Administration
2	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	N/A	HTN: Dx HTN BP GE 160/100 or not recorded (OP)	Veterans Health Administration
3	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	N/A	DM – BP GE 160/100 or not done (SCI&D)	Veterans Health Administration
4	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	N/A	Blood Pressure Management-DM	Veterans Health Administration
5	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	N/A	Blood Pressure Management: AMI	Veterans Health Administration
6	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	N/A	HTN: Dx HTN and no DM with BP less than 150/90 (OP)	Veterans Health Administration
7	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	0061	Comprehensive Diabetes Care: Blood Pressure Control (<140/90 mm Hg)	National Committee for Quality Assurance
8	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	0073	Ischemic Vascular Disease (IVD): Blood Pressure Control	National Committee for Quality Assurance
9	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	2607	Diabetes Care for People with Serious Mental Illness: Hemoglobin A1c (HbA1c) Poor Control (>9.0%) (SMI-PC)	National Committee for Quality Assurance
10	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	N/A	HTN: No Dx of HTN BP LE 140/90 (OP)	Veterans Health Administration
11	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Intermediate outcomes (e.g., HbA1c, B/P, etc.)	N/A	HTN: No Dx of HTN BP GE 160/100 or not recorded (OP)	Veterans Health Administration
12	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Medication adherence and persistence	N/A	Statin adherence for patients with cardiovascular disease (eMeasure)	Veterans Health Administration
13	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Medication adherence and persistence	N/A	Statin adherence for patients with cardiovascular disease: men (eMeasure)	Veterans Health Administration
14	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Medication adherence and persistence	N/A	Statin adherence for patients with cardiovascular disease: women (eMeasure)	Veterans Health Administration

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
15	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Medication adherence and persistence	N/A	Adherence to Antipsychotic Medications for Individuals with Schizophrenia (SAA-BH)	Centers for Medicare & Medicaid Services
16	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.2-PROMs	Functional status	0429	Change in Basic Mobility as Measured by the AM-PAC	CREcare
17	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.2-PROMs	Functional status	0430	Change in Daily Activity Function as Measured by the AM-PAC	CREcare
18	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.2-PROMs	Functional status	N/A	Outpatient Functional Status Assessment	Veterans Health Administration
19	General Medicine/ Crosscutting	1-Effective Treatment/ Clinical Care	1.2-PROMs	Patient activation/ engagement	2483	Gains in Patient Activation (PAM) Scores at 12 Months	Insignia Health
20	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Anticoagulants	0555	INR Monitoring for Individuals on Warfarin	Centers for Medicare & Medicaid Services
21	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Inappropriate medication use	0655	Otitis Media with Effusion: Antihistamines or decongestants – Avoidance of inappropriate use	American Academy of Otolaryngology – Head and Neck Surgery
22	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Inappropriate medication use	0656	Otitis Media with Effusion: Systemic corticosteroids – Avoidance of inappropriate use	American Academy of Otolaryngology – Head and Neck Surgery
23	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Inappropriate medication use	0657	Otitis Media with Effusion: Systemic antimicrobials – Avoidance of inappropriate use	American Academy of Otolaryngology – Head and Neck Surgery
24	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Medication management/ reconciliation	N/A	Home meds rev w outpt/crgvr or accept rationale doc	Veterans Health Administration
25	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Medication management/ reconciliation	N/A	Consistent Medication List	Veterans Health Administration
26	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Medication management/ reconciliation	N/A	Med list given outpt	Veterans Health Administration
27	General Medicine/ Crosscutting	2-Patient Safety/Safety	2.2-Medication Safety	Opioids	N/A	% of pts on chronic opioid therapy receiving drug screen	Veterans Health Administration
28	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.1-Assessing Team-Based Care	Communication between patient and provider	N/A	Normal Test Results Timely to Patient	Veterans Health Administration
29	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.1-Assessing Team-Based Care	Communication between patient and provider	N/A	Test Results to Patient within 30 days	Veterans Health Administration

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
30	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.1-Assessing Team-Based Care	Communication between patient and provider	N/A	Face-to-Face Notification of Test Results	Veterans Health Administration
31	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.1-Assessing Team-Based Care	Communication between patient and provider	N/A	Telephone Notification of Test Results	Veterans Health Administration
32	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.1-Assessing Team-Based Care	Communication between patient and provider	N/A	Mail Notification of Test Results	Veterans Health Administration
33	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.1-Assessing Team-Based Care	Communication between patient and provider	N/A	Test Results Requiring Action Timely to Patient	Veterans Health Administration
34	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.2-Effective Use of New Technology	Interoperability to enhance communication	N/A	Secure Message Notification of Test Results	Veterans Health Administration
35	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.2-Effective Use of New Technology	Telehealth	N/A	Diabetes management through Telehealth	Health Resources and Services Administration
36	General Medicine/ Crosscutting	3-Communication/ Care Coordination	3.2-Effective Use of New Technology	Telehealth	N/A	Telehealth Notification of Test Results	Veterans Health Administration
37	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Alcohol/substance use	N/A	% primary care pts with moderate-severe alcohol misuse risk	Veterans Health Administration
38	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Alcohol/substance use	N/A	% of primary care pts with severe alcohol misuse risk	Veterans Health Administration
39	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Alcohol/substance use	N/A	% of primary care patients at risk of alcohol misuse	Veterans Health Administration
40	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Alcohol/substance use	N/A	% of patients with mental health/substance use dx	Veterans Health Administration
41	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Housing	N/A	Housing Status	Health Resources and Services Administration
42	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Tobacco use	N/A	Adult Local Current Smoking Prevalence	Centers for Medicare & Medicaid Services
43	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Tobacco use	N/A	Tobacco used in past 12 mos (OP Nexus non MH)	Veterans Health Administration

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
44	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Tobacco use	N/A	Tobacco used in past 12 mos (OP Nexus MH)	Veterans Health Administration
45	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Tobacco use	N/A	Tobacco used in past 12 mos (SCI&D)	Veterans Health Administration
46	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Tobacco use	N/A	% of outpatients with a positive screen for tobacco use	Veterans Health Administration
47	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Alcohol/substance use	N/A	% of primary care patients screened for alcohol misuse	Veterans Health Administration
48	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Immunizations	N/A	Childhood immunizations	Unknown
49	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Immunizations	N/A	Percent of children ages 19 through 35 months who have received the 4:3:1:3(4):3:1:4 series of routine vaccinations	Health Resources and Services Administration
50	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Immunizations	0475	Hepatitis B Vaccine Coverage Among All Live Newborn Infants Prior to Hospital or Birthing Facility Discharge	Centers for Disease Control and Prevention
51	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Immunizations	1959	Human Papillomavirus Vaccine for Female Adolescents (HPV)	National Committee for Quality Assurance
52	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	N/A	HIV Screening	Centers for Disease Control and Prevention
53	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	N/A	Osteoporosis Screening	Veterans Health Administration
54	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	1360	Audiological Evaluation no later than 3 months of age	Centers for Disease Control and Prevention

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
55	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	2597	Substance Use Screening and Intervention Composite	American Society of Addiction Medicine
56	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	2721	Screening for Reduced Visual Acuity and Referral in Children	Centers for Medicare & Medicaid Services
57	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	3039	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow-Up	Centers for Medicare & Medicaid Services
58	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	N/A	Percent of adolescents, ages 12 through 17, with a preventive medical visit in the past year	Health Resources and Services Administration
59	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Tobacco use	N/A	Tobacco - Outpt - Screened f/ Use - Nexus	Veterans Health Administration
60	General Medicine/ Crosscutting	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Tobacco use	N/A	% of VHA outpatients screened for tobacco use	Veterans Health Administration
61	General Medicine/ Crosscutting	6-Affordable Care	6.1-Overuse Measures	Appropriate use	0668	Appropriate Head CT Imaging in Adults with Mild Traumatic Brain Injury	American College of Emergency Physicians
62	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Medication adherence and persistence	1880	Adherence to Mood Stabilizers for Individuals with Bipolar I Disorder	Centers for Medicare & Medicaid Services
63	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Medication adherence and persistence	N/A	% of pts w/ schizophr & good antipsych med possession ratio	Veterans Health Administration
64	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Medication adherence and persistence	N/A	% of pts w/ schizophr & low antipsych med possession ratio	Veterans Health Administration
65	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Medication adherence and persistence	N/A	% of pts w/ schizophr & high antipsych med possession ratio	Veterans Health Administration
66	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Mortality	N/A	Standardized mortality ratio for pts with MH dx vs. pts w/o	Veterans Health Administration
67	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Multiple chronic/ complex conditions	N/A	Number of VA emergency dept visits for patients with MH dx	Veterans Health Administration
68	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Recovery oriented outcome	N/A	SUD treatment continuity	Veterans Health Administration

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
69	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Suicide	N/A	Deaths by Suicide (SUIC)	Substance Abuse and Mental Health Services Administration
70	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Suicide	N/A	Suicide Attempts (SU-A)	Substance Abuse and Mental Health Services Administration
71	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.2-PROMs	Functional status pre/post-treatment	1884	Depression Response at Six Months–Progress Towards Remission	MN Community Measurement
72	Mental Health/ Substance Use	1-Effective Treatment/ Clinical Care	1.2-PROMs	Functional status pre/post-treatment	1885	Depression Response at Twelve Months-–Progress Towards Remission	MN Community Measurement
73	Mental Health/ Substance Use	2-Patient Safety/ Safety	2.2-Medication Safety	Medication side effects	1932	Diabetes Screening for People with Schizophrenia or Bipolar Disorder who Are Using Antipsychotic Medications (SSD)	National Committee for Quality Assurance
74	Mental Health/ Substance Use	2-Patient Safety/ Safety	2.2-Medication Safety	Medication side effects	N/A	Metabolic Monitoring for Children and Adolescents on Antipsychotics (APM)	National Committee for Quality Assurance
75	Mental Health/ Substance Use	2-Patient Safety/ Safety	2.2-Medication Safety	Medication side effects	1933	Cardiovascular Monitoring for People with Cardiovascular Disease and Schizophrenia (SMC)	National Committee for Quality Assurance
76	Mental Health/ Substance Use	2-Patient Safety/ Safety	2.2-Medication Safety	Medication side effects	N/A	New diabetes dx for pts on new atypical antipsychotic med	Veterans Health Administration
77	Mental Health/ Substance Use	2-Patient Safety/ Safety	2.2-Medication Safety	Medication side effects	N/A	Obesity incidence for pts on atypical antipsych meds	Veterans Health Administration
78	Mental Health/ Substance Use	4-Person & Family Engagement/ Experience	4.2-PROMs	Patient/caregiver experience	N/A	Veteran Satisfaction Survey–MH Appointment Access	Veterans Health Administration
79	Mental Health/ Substance Use	4-Person & Family Engagement/ Experience	4.2-PROMs	Patient/caregiver experience	N/A	Patient Experience of Care Survey (PEC)	Substance Abuse and Mental Health Services Administration
80	Mental Health/ Substance Use	4-Person & Family Engagement/ Experience	4.2-PROMs	Patient/caregiver experience	N/A	Youth/Family Experience of Care Survey (Y/FEC)	Substance Abuse and Mental Health Services Administration
81	Mental Health/ Substance Use	4-Person & Family Engagement/ Experience	4.2-PROMs	Patient/caregiver experience	N/A	Veteran Satisfaction Survey–Patient-Centered MH Care	Veterans Health Administration

#	Clinical Specialty	Quality Domain	Topic	Subtopic	NQF ID	Measure Title	Steward
82	Mental Health/ Substance Use	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Housing	N/A	% of MH patients with onset of homelessness services	Veterans Health Administration
83	Mental Health/ Substance Use	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Housing	N/A	Housing Status (HOU)	Substance Abuse and Mental Health Services Administration
84	Mental Health/ Substance Use	5-Healthy Living/ Population Health & Prevention	5.1-Population Level Outcomes	Suicide	N/A	Adjusted suicide re-event rate	Veterans Health Administration
85	Mental Health/ Substance Use	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Alcohol/substance use	N/A	SUD - Outpt - Pts scrn Annually f/ Alcohol Misuse	Veterans Health Administration
86	Mental Health/ Substance Use	5-Healthy Living/ Population Health & Prevention	5.2-Detection/ Prevention of Chronic Disease	Screening measures	N/A	PTSD Screening Using the PC-PTSD	Veterans Health Administration
87	Oncology	3-Communication/ Care Coordination	3.1-Assessing Team-Based Care	Team-based care	N/A	Laryngeal squamous cell carcinoma	Washington University School of Medicine
88	Oncology	6-Affordable Care	6.1-overuse measures	Appropriate use	N/A	Non-Recommended PSA-Based Screening (eMeasure)	Veterans Health Administration
89	Orthopedic Surgery	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Functional status pre/post-treatment	2643	Average change in functional status following lumbar spine fusion surgery	MN Community Measurement
90	Orthopedic Surgery	1-Effective Treatment/ Clinical Care	1.1-Outcomes	Functional status pre/post-treatment	2653	Average change in functional status following total knee replacement surgery	MN Community Measurement
91	Orthopedic Surgery	4-Person & Family Engagement/ Experience	4.2-PROMs	Patient/ caregiver experience	1741	Patient Experience with Surgical Care Based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS)® Surgical Care Survey	American College of Surgeons, Division of Advocacy and Health Policy
92	Palliative Care	4-Person & Family Engagement/ Experience	4.1-Personal Preference & Shared Decision-Making	Hospice and end of life preferences	1641	Hospice and Palliative Care – Treatment Preferences	University of North Carolina-Chapel Hill

Appendix D – CMS-Funded Measures Developed During the Previous Year

Table 10: CMS-Funded Measures Developed Between April 16, 2015, and December 31, 2016[xxx,xxxi]

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Electronically Specified	Measure Type	Measure Title	Measure Steward/ Measure Developer
N/A / N/A	TBD	Person and Family Engagement/ Patient and Caregiver Experience	Yes	Process	Cognitive Impairment Assessment Among Older Adults (75 Years and Older)	Centers for Medicare & Medicaid Services/ Mathematica Policy Research
N/A / 438	TBD	Effective Treatment/ Clinical Care	Yes	Process	Statin Therapy for the Prevention and Treatment of Cardiovascular Disease	Centers for Medicare & Medicaid Services/ Quality Insights
N/A / N/A	TBD	Affordable Care	Yes	Process	Appropriate Use of DXA Scans in Women Under 65 Years Who Do Not Meet the Risk Factor Profile for Osteoporotic Fracture	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance

[xxx] Section 1848(s)(3)(B)(ii)(I), (II), (III), (V)

[xxxi] Measure development for the areas listed was not funded by MACRA section 1848(s)(6), as funding for development was obligated prior to the passage of MACRA, using existing CMS funds under Title XVIII.

Appendix E – CMS-Funded Measures in Development

Table 11: CMS-Funded Measures in Development Between April 16, 2015, and December 31, 2016, Pending Testing Completion[xxxii,xxxiii]

Est. Date of Completion	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Electronically Specified	Measure Type	Measure Title	Measure Steward/ Measure Developer
June 2018	TBD	Patient Safety/Safety	Yes	Outcome	Adverse Drug Events for Patients Taking Anticoagulant Medications in an Ambulatory Setting	Centers for Medicare & Medicaid Services/ Mathematica Policy Research
June 2018	229, 232, 233, 234, 238, 241, 244	Effective Treatment/ Clinical Care	Yes	Process	Annual Wellness Assessment: Preventive Care (Composite)	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
June 2018	TBD	Effective Treatment/ Clinical Care	Yes	Patient Reported Outcome-Performance Measure (PRO-PM)	Changes in Patient-Reported Outcomes (PROs) Following Non-Emergent PCI	Centers for Medicare & Medicaid Services/ The Lewin Group
June 2018	323	Patient Safety/Safety	Yes	Outcome	Diabetes: Hemoglobin A1c Overtreatment in the Elderly	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
June 2018	379	Effective Treatment/ Clinical Care	Yes	PRO-PM	Functional Status Improvement for Patients who Received a Total Hip Replacement	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
June 2018	378	Effective Treatment/ Clinical Care	Yes	PRO-PM	Functional Status Improvement for Patients who Received a Total Knee Replacement	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
June 2018	329	Effective Treatment/ Clinical Care	Yes	Process	HIV Screening for Patients with Sexually Transmitted Infection (STI)	Centers for Disease Control and Prevention/ Mathematica Policy Research

[xxxii] Section 1848(s)(3)(B)(ii)(I), (II), (III), (V)
[xxxiii] Measure development for the areas listed was not funded by MACRA Section 1848(s)(6), as funding for development was obligated prior to the passage of MACRA, using existing CMS funds under Title XVIII.

Est. Date of Completion	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Electronically Specified	Measure Type	Measure Title	Measure Steward/ Measure Developer
June 2018	349	Effective Treatment/ Clinical Care	Yes	Process	HIV Screening	Centers for Disease Control and Prevention/ Mathematica Policy Research
June 2018	TBD	Affordable Care	Yes	Process	Overuse of PCI in Asymptomatic Patients	Centers for Medicare & Medicaid Services/ PCPI
June 2018	460	Patient Safety/ Safety	Yes	Process	Potential Opioid Overuse	Centers for Medicare & Medicaid Services/ The Lewin Group
June 2018	344	Communication and Coordination/ Care Coordination	Yes	Process	Care Coordination after Asthma-Related Emergency Department Visit	Centers for Medicare & Medicaid Services/ Mathematica Policy Research
June 2018	343	Communication and Coordination/ Care Coordination	Yes	Process	Care Coordination after Asthma-Related Emergency Department Visit: EP Follow-up	Centers for Medicare & Medicaid Services/ Mathematica Policy Research
June 2018	250	Person and Family Engagement/Patient and Caregiver Experience	Yes	Process	Disease Activity Assessments and Target Setting for Patients with Rheumatoid Arthritis	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
June 2018	342	Communication and Coordination/ Care Coordination	Yes	Process	Documentation of a Health Care Partner for Patients with Dementia or Mild Cognitive Impairment	Centers for Medicare & Medicaid Services/ Mathematica Policy Research
June 2018	TBD	Person and Family Engagement/Patient and Caregiver Experience	Yes	Process	Functional Status Assessment and Target Setting for Patients with Congestive Heart Failure	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
June 2018	228	Person and Family Engagement/Patient and Caregiver Experience	Yes	Process	Functional Status Assessments and Target Setting for Patients with Asthma	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance

Est. Date of Com-pletion	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Electronically Specified	Measure Type	Measure Title	Measure Steward/ Measure Developer
June 2018	227	Person and Family Engagement/Patient and Caregiver Experience	Yes	Process	Functional Status Assessments and Target Setting for Patients with Chronic Obstructive Pulmonary Disease	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
June 2018	336	Person and Family Engagement/Patient and Caregiver Experience	Yes	Process	Pain Assessments and Target Setting for Patients with Osteoarthritis	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance

Table 12: CMS-Funded Measures in Development Between April 16, 2015, and December 31, 2016, That Were Suspended Due to Feasibility or Other Concerns[xxxiv,xxxv]

Est. Date of Com-pletion	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Electronically Specified	Measure Type	Measure Title	Measure Steward/ Measure Developer
N/A	N/A	Patient Safety/ Safety	Yes	Outcome	Adverse Drug Events for Patients Taking Antihyperglycemic Medications in an Ambulatory Setting[B,D]	Centers for Medicare & Medicaid Services/ Mathematica Policy Research
N/A	N/A	Effective Treatment/ Clinical Care	Yes	Process	Annual Wellness Assessment: Assessment and Management of Modifiable Behaviors (Composite)[B]	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
N/A	N/A	Communication and Coordination/ Care Coordination	Yes	Process	Appropriate Follow-Up for Abnormal Diagnostic Test Results[A,B]	Centers for Medicare & Medicaid Services/ Mathematica Policy Research
N/A	N/A	Person and Family Engagement/Patient and Caregiver Experience	Yes	Process	Chronic Disease Self-Management[A]	Centers for Medicare & Medicaid Services/The Lewin Group
N/A	387	Communication and Coordination/ Care Coordination	Yes	Process	Closing the Referral Loop: Critical Information Communicated with Request for Referral[E]	Centers for Medicare & Medicaid Services/PCPI
N/A	386	Communication and Coordination/ Care Coordination	Yes	Process	Closing the Referral Loop: Specialist Report Sent to Referring Provider[E]	Centers for Medicare & Medicaid Services/PCPI

[xxxiv] Section 1848(s)(3)(B)(ii)(I), (II), (III), (V), (B)(v)
[xxxv] Measure development for the areas listed was not funded by MACRA section 1848(s)(6), as funding for development was obligated prior to the passage of MACRA, using existing CMS funds under Title XVIII.

Est. Date of Completion	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Electronically Specified	Measure Type	Measure Title	Measure Steward/ Measure Developer
N/A	426	Affordable Care	Yes	Process	Non-Recommended PSA-Based Screening[A,C]	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
N/A	425	Patient Safety/ Safety	Yes	Process	Potentially Harmful Drug-Disease Interactions in the Elderly[B,C]	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
N/A	431	Patient Safety/ Safety	Yes	Process	Prevention of Adverse Drug Events (ADEs) in Patients Prescribed Medications at High Risk for an Adverse Drug-Drug Interaction (DDI)[B]	Centers for Medicare & Medicaid Services/ National Committee for Quality Assurance
N/A	N/A	Effective Treatment/ Clinical Care	Yes	Process	Screening and Follow-up for BRCA Mutations[B]	Centers for Medicare & Medicaid Services/PCPI
N/A	N/A	Person and Family Engagement/Patient and Caregiver Experience	Yes	PRO-PM	Stabilization in Anxiety Level[B]	Centers for Medicare & Medicaid Services/ The Lewin Group

Rationale for Suspending Measure Development

[A] Evidence – A measured process must demonstrably lead to improved patient outcomes; failure to support that linkage justifies suspension of development.

[B] Feasibility – Absence of data capture or availability for testing, EHR interoperability issues, incompatibility with clinical workflow, and the need for denominator refinement or further research on risk adjustment are factors that may make a measure concept currently infeasible.

[C] Implementation concern – Consultation with stakeholders may reveal a lack of acceptance for reasons such as difficulty adapting evidence to a clinician-based eCQM.

[D] Performance gap/reliability – A smaller than anticipated quality gap and poor reliability may disqualify a measure.

[E] Program change – CMS ceased development of a *de novo* eCQM determined to be conceptually and materially redundant with a measure in the new MIPS advancing care information performance category; a second measure was suspended but may be reconsidered for use as an advancing care information measure.

Appendix F – CMS Advanced APM Quality Measures Inventory[xxxvi]

Table 13: Comprehensive ESRD Care (CEC) Model – LDO arrangement and non-LDO two-sided risk arrangement

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
N/A	N/A	Patient Safety/ Safety	Outcome	ESCO Standardized Mortality Ratio	Centers for Medicare & Medicaid Services
0101/154	139v5	Patient Safety/ Safety	Process	Falls: Screening, Risk Assessment, and Plan of Care to Prevent Future Falls	National Committee for Quality Assurance
0326/047	N/A	Communication and Coordination/ Care Coordination	Process	Advance Care Plan	National Committee for Quality Assurance
0005 & 0006/321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	ICH-CAHPS: Nephrologists' Communication and Caring	Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	ICH-CAHPS: Quality of Dialysis Center Care and Operations	Agency for Healthcare Research & Quality
N/A	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	ICH-CAHPS: Providing Information to Patients	Agency for Healthcare Research & Quality
N/A	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	ICH-CAHPS: Rating of Kidney Doctors	Agency for Healthcare Research & Quality
N/A	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	ICH-CAHPS: Rating of Dialysis Center Staff	Agency for Healthcare Research & Quality
N/A	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	ICH-CAHPS: Rating of Dialysis Center	Agency for Healthcare Research & Quality
0097/046	N/A	Communication and Coordination/ Care Coordination	Process	Medication Reconciliation Post Discharge	National Committee for Quality Assurance
0055/117	131v5	Effective Treatment/ Clinical Care	Process	Diabetes Care: Eye Exam	National Committee for Quality Assurance

[xxxvi] This list includes only MIPS-comparable measures.

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
0056/163	123v5	Effective Treatment/ Clinical Care	Process	Diabetes Care: Foot Exam	National Committee for Quality Assurance
0041/110	147v4	Healthy Living/ Population Health and Prevention	Process	Influenza Immunization for the ESRD Population	Kidney Care Quality Alliance
0043/111	127v5	Healthy Living/ Population Health and Prevention	Process	Pneumonia Vaccination Status	National Committee for Quality Assurance
0418/134	2v6	Healthy Living/ Population Health and Prevention	Process	Screening for Depression and Follow-Up Plan	Centers for Medicare & Medicaid Services
0028/226	138v5	Healthy Living/ Population Health and Prevention	Process	Tobacco Use: Screening and Cessation Intervention	American Medical Association-Physician Consortium for Performance Improvement

Table 14: Comprehensive Primary Care Plus (CPC+) Model

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
0710/370	159v5	Effective Treatment/ Clinical Care	Intermediate Outcome	Depression Remission at Twelve Months	Minnesota Community Measurement
0018/236	165v5	Effective Treatment/ Clinical Care	Intermediate Outcome	Controlling High Blood Pressure	National Committee for Quality Assurance
0059/001	122v5	Effective Treatment/ Clinical Care	Intermediate Outcome	Diabetes: Hemoglobin A1c (HbA1c) Poor Control (>9%)	National Committee for Quality Assurance
0022/238	156v5	Patient Safety/Safety	Process	Use of High-Risk Medications in the Elderly	National Committee for Quality Assurance
N/A /281	149v5	Effective Treatment/ Clinical Care	Process	Dementia: Cognitive Assessment	American Medical Association-Physician Consortium for Performance Improvement
0101/318	139v5	Patient Safety/Safety	Process	Falls: Screening for Future Fall Risk	National Committee for Quality Assurance
0004/305	137v5	Effective Treatment/ Clinical Care	Process	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment	National Committee for Quality Assurance
N/A/374	50v5	Communication and Coordination/ Care Coordination	Process	Closing the Referral Loop: Receipt of Specialist Report	Centers for Medicare & Medicaid Services

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
0325/032	124v5	Effective Treatment/ Clinical Care	Process	Cervical Cancer Screening	National Committee for Quality Assurance
0034/113	130v5	Effective Treatment/ Clinical Care	Process	Colorectal Cancer Screening	National Committee for Quality Assurance
0055/117	131v5	Effective Treatment/ Clinical Care	Process	Diabetes: Eye Exam	National Committee for Quality Assurance
0028/226	138v5	Healthy Living/ Population Health and Prevention	Process	Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention	American Medical Association-Physician Consortium for Performance Improvement
0052/312	166v6	Affordable Care	Process	Use of Imaging Studies for Low Back Pain	National Committee for Quality Assurance
2372/112	125v5	Effective Treatment/ Clinical Care	Process	Breast Cancer Screening	National Committee for Quality Assurance
N/A	N/A	Person and Family Engagement/Patient and Caregiver Experience	Patient Engagement/ Experience	CG -CAPHS Survey 3.0	Agency for Healthcare Research & Quality
N/A	N/A	Healthy Living/ Population Health and Prevention	Efficiency	Inpatient Hospital Utilization	National Committee for Quality Assurance
N/A	N/A	Healthy Living/ Population Health and Prevention	Efficiency	Emergency Department Utilization	National Committee for Quality Assurance

ACOs are required to report on a set of quality measures under the Shared Savings Program rules, including measures assessing patient experience of care and level of certified EHR technology use. Table 15 reflects only a subset of Shared Savings Program quality measures that CMS has determined are also MIPS-comparable measures.

Table 15: Shared Savings Program Accountable Care Organizations – Track 2 and Track 3

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
0005 & 0006/321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Getting Timely Care, Appointments, and Information	Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: How Well Your Providers Communicate	Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Patients' Rating of Provider	Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Access to Specialists	Centers for Medicare & Medicaid Services/ Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Health Promotion and Education	Centers for Medicare & Medicaid Services/ Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Shared Decision Making	Centers for Medicare & Medicaid Services/ Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Health Status/Functional Status*	Centers for Medicare & Medicaid Services/ Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Stewardship of Patient Resources	Centers for Medicare & Medicaid Services/ Agency for Healthcare Research & Quality
1789/458	N/A	Communication and Coordination/ Care Coordination	Outcome	Risk-Standardized, All Condition Readmission	Centers for Medicare & Medicaid Services
2510/458	N/A	Communication and Coordination/ Care Coordination	Outcome	Skilled Nursing Facility 30-Day All-Cause Readmission Measure (SNFRM)	Centers for Medicare & Medicaid Services

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
2887/ N/A	N/A	Communication and Coordination/ Care Coordination	Outcome	All-Cause Unplanned Admissions for Patients with Diabetes	Centers for Medicare & Medicaid Services
2886/ N/A	N/A	Communication and Coordination/ Care Coordination	Outcome	All-Cause Unplanned Admissions for Patients with Heart Failure	Centers for Medicare & Medicaid Services
2888/ N/A	N/A	Communication and Coordination/ Care Coordination	Outcome	All-Cause Unplanned Admissions for Patients with Multiple Chronic Conditions	Centers for Medicare & Medicaid Services
N/A	N/A	Communication and Coordination/ Care Coordination	Outcome	Ambulatory Sensitive Condition Acute Composite (AHRQ Prevention Quality Indicator (PQI) #91)	Agency for Healthcare Research & Quality
0097	N/A	Patient Safety/ Safety	Process	Medication Reconciliation Post-Discharge	National Committee for Quality Assurance
0052	N/A	Patient Safety/ Safety	Process	Use of Imaging Studies for Low Back Pain	National Committee for Quality Assurance
0101/154	139v5	Patient Safety/ Safety	Process	Falls: Screening for Future Fall Risk	National Committee for Quality Assurance
0041/110	147v4	Healthy Living/ Population Health and Prevention	Process	Preventive Care and Screening: Influenza Immunization	American Medical Association-Physician Consortium for Performance Improvement
0043/111	127v5	Healthy Living/ Population Health and Prevention	Process	Pneumonia Vaccination Status for Older Adults	National Committee for Quality Assurance
0421/128	69v5	Healthy Living/ Population Health and Prevention	Process	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow Up	Centers for Medicare & Medicaid Services
0028/226	138v5	Healthy Living/ Population Health and Prevention	Process	Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention	American Medical Association-Physician Consortium for Performance Improvement
0418/134	2v6	Healthy Living/ Population Health and Prevention	Process	Preventive Care and Screening: Screening for Depression and Follow-up Plan	Centers for Medicare & Medicaid Services
0034/113	130v5	Effective Treatment/ Clinical Care	Process	Colorectal Cancer Screening	National Committee for Quality Assurance
2372/112	125v5	Effective Treatment/ Clinical Care	Process	Breast Cancer Screening	National Committee for Quality Assurance

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
NA/438	N/A	Effective Treatment/ Clinical Care	Process	Statin Therapy for the Prevention and Treatment of Cardiovascular Disease*	Centers for Medicare & Medicaid Services
0710/370	159v5	Effective Treatment/ Clinical Care	Intermediate Outcome	Depression Remission at Twelve Months*	Minnesota Community Measurement
0018	165v5	Effective Treatment/ Clinical Care	Intermediate Outcome	Controlling High Blood Pressure	National Committee for Quality Assurance
0068	164v5	Effective Treatment/ Clinical Care	Process	Use of Aspirin or Another Antithrombotic	National Committee for Quality Assurance
0059/001 and 0055	122v5	Effective Treatment/ Clinical Care	Intermediate Outcome	Diabetes Composite (All or Nothing Scoring): Diabetes Mellitus: Hemoglobin A1c Poor Control and Diabetes: Eye Exam	National Committee for Quality Assurance

*Measure is pay for reporting all years.

Note: Some quality measures phase into pay for performance (from pay for reporting) according to Shared Savings Program rules and the measure phase-in schedule finalized in the 2017 Physician Fee Schedule Final Rule (81 Federal Register 80488-80489).

Table 16: Next Generation ACO Model

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
0005 & 0006/321	N/A	Person and Family Engagement/Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Getting Timely Care, Appointments, and Information	Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: How Well Your Providers Communicate	Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Patients' Rating of Provider	Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Access to Specialists	Centers for Medicare & Medicaid Services/ Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Health Promotion and Education	Centers for Medicare & Medicaid Services/ Agency for Healthcare Research & Quality

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
0005 & 0006/321	N/A	Person and Family Engagement/Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Shared Decision Making	Centers for Medicare & Medicaid Services/ Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Health Status/Functional Status*	Centers for Medicare & Medicaid Services/ Agency for Healthcare Research & Quality
0005 & 0006/321	N/A	Person and Family Engagement/Patient and Caregiver Experience	Patient Engagement/ Experience	CAHPS: Stewardship of Patient Resources	Centers for Medicare & Medicaid Services/ Agency for Healthcare Research & Quality
1789/458	N/A	Communication and Coordination/ Care Coordination	Outcome	Risk-Standardized, All Condition Readmission	Centers for Medicare & Medicaid Services
2510/458	N/A	Communication and Coordination/ Care Coordination	Outcome	Skilled Nursing Facility 30-Day All-Cause Readmission Measure (SNFRM)	Centers for Medicare & Medicaid Services
2887/ N/A	N/A	Communication and Coordination/ Care Coordination	Outcome	All-Cause Unplanned Admissions for Patients with Diabetes	Centers for Medicare & Medicaid Services
2886 / N/A	N/A	Communication and Coordination/ Care Coordination	Outcome	All-Cause Unplanned Admissions for Patients with Heart Failure	Centers for Medicare & Medicaid Services
2888 / N/A	N/A	Communication and Coordination/ Care Coordination	Outcome	All-Cause Unplanned Admissions for Patients with Multiple Chronic Conditions	Centers for Medicare & Medicaid Services
N/A	N/A	Communication and Coordination/ Care Coordination	Outcome	Ambulatory Sensitive Condition Acute Composite (AHRQ Prevention Quality Indicator (PQI) #91)	Agency for Healthcare Research & Quality
0097	N/A	Patient Safety/Safety	Process	Medication Reconciliation Post-Discharge	National Committee for Quality Assurance
0052	166v6	Patient Safety/Safety	Process	Use of Imaging Studies for Low Back Pain	National Committee for Quality Assurance
0101/154	139v5	Patient Safety/Safety	Process	Falls: Screening for Future Fall Risk	National Committee for Quality Assurance
0041/110	147v4	Healthy Living/ Population Health and Prevention	Process	Preventive Care and Screening: Influenza Immunization	American Medical Association-Physician Consortium for Performance Improvement

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
0043/111	127v5	Healthy Living/ Population Health and Prevention	Process	Pneumonia Vaccination Status for Older Adults	National Committee for Quality Assurance
0421/128	69v5	Healthy Living/ Population Health and Prevention	Process	Preventive Care and Screening: Body Mass Index (BMI) Screening and Follow Up	Centers for Medicare & Medicaid Services
0028/226	138v5	Healthy Living/ Population Health and Prevention	Process	Preventive Care and Screening: Tobacco Use: Screening and Cessation Intervention	American Medical Association-Physician Consortium for Performance Improvement
0418/134	2v6	Healthy Living/ Population Health and Prevention	Process	Preventive Care and Screening: Screening for Depression and Follow-up Plan	Centers for Medicare & Medicaid Services
0034/113	130v5	Effective Treatment/ Clinical Care	Process	Colorectal Cancer Screening	National Committee for Quality Assurance
2372/112	125v5	Effective Treatment/ Clinical Care	Process	Breast Cancer Screening	National Committee for Quality Assurance
NA/438	N/A	Effective Treatment/ Clinical Care	Process	Statin Therapy for the Prevention and Treatment of Cardiovascular Disease*	Centers for Medicare & Medicaid Services
0710/370	159v5	Effective Treatment/ Clinical Care	Intermediate Outcome	Depression Remission at Twelve Months*	Minnesota Community Measurement
0018	165v5	Effective Treatment/ Clinical Care	Intermediate Outcome	Controlling High Blood Pressure	National Committee for Quality Assurance
0068	164v5	Effective Treatment/ Clinical Care	Process	Use of Aspirin or Another Antithrombotic	National Committee for Quality Assurance
0059/001 and 0055	122v5	Effective Treatment/ Clinical Care	Intermediate Outcome	Diabetes Composite (All or Nothing Scoring): Diabetes Mellitus: Hemoglobin A1c Poor Control and Diabetes: Eye Exam	National Committee for Quality Assurance

*Measure is pay for reporting all years.

Note: Some quality measures phase into pay for performance (from pay for reporting) according to the measure phase-in schedule finalized in the 2017 Physician Fee Schedule Final Rule (81 Federal Register 80488-80489).

Table 17: Oncology Care Model – Two-Sided Risk Arrangement

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
0385/072	N/A	Effective Treatment/ Clinical Care	Process	Adjuvant chemotherapy is recommended or administered within 4 months (120 days) of diagnosis to patients under the age of 80 with AJCC III (lymph node positive) colon cancer	American College of Surgeons
0387/071	140v4	Effective Treatment/ Clinical Care	Process	Breast Cancer: Hormonal Therapy for Stage I (T1b)-IIIC Estrogen Receptor/ Progesterone Receptor (ER/PR) Positive Breast Cancer	American Medical Association-Physician Consortium for Performance Improvement
N/A	N/A	Effective Treatment/ Clinical Care	Process	Combination chemotherapy is recommended or administered within 4 months (120 days) of diagnosis for women under 70 with AJCC T1cN0M0, or Stage IB–III hormone receptor negative breast cancer	American College of Surgeons
0419/130	68v6	Patient Safety/Safety	Process	Documentation of Current Medications in the Medical Record	Centers for Medicare & Medicaid Services
0384/143 0383/144	157v5	Person and Family Engagement/ Patient and Caregiver Experience	Process	Oncology: Medical and Radiation – Plan of Care for Pain AND Oncology: Medical and Radiation – Pain Intensity Quantified	American Medical Association-Physician Consortium for Performance Improvement
Based on QPP 321	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	Patient-Reported Experience	Agency for Healthcare Research & Quality

Table 18: Comprehensive Care for Joint Replacement (CJR) Payment Model (Track 1 – CEHRT)

NQF/ MIPS	CMS eMeasure ID	CMS Quality Domain/ MACRA Domain	Measure Type	Measure Title	Measure Steward
1550/ N/A	N/A	Patient Safety/Safety	Outcome	Total hip arthroplasty (THA) and/or total knee arthroplasty (TKA): hospital-level risk-standardized complication rate (RSCR) following elective primary THA and/or TKA.*	Center for Medicare and Medicaid Services; Yale-New Haven Health Services Corporation/Center for Outcomes Research and Evaluation under contract to Centers for Medicare & Medicaid Services
0166/ N/A	N/A	Person and Family Engagement/ Patient and Caregiver Experience	Patient Engagement/ Experience	Healthcare Consumer Assessment of Healthcare Providers and Services (HCAHPS)*	Agency for Healthcare Research and Quality; CAHPS Consortium; Centers for Medicare & Medicaid Services

* HCAHPS and Complications measures are already collected through Hospital Inpatient Quality Reporting Program (HIQR). The CJR model gets those data through HIQR and does not make additional changes to the data themselves.

**Patient-reported outcomes and limited risk variable data collection (PRO) is a data collection and measure development initiative run by CMS contractor Yale CORE and is not required for reconciliation eligibility for participant hospitals. Successful submission of PRO (not performance on PRO) can increase financial opportunity for participant hospitals under the model.

Appendix G – Glossary of Acronyms/Abbreviations

Acronym	Definition
ACO	accountable care organization
AHIP	America's Health Insurance Plans
AHRQ	Agency for Healthcare Research and Quality
APM	alternative payment model
ASPE	Assistant Secretary for Planning and Evaluation
BRCA	breast cancer
C3	Communication, Coordination and Collaboration
CEC Model	Comprehensive ESRD Care Model
CEHRT	certified electronic health record technology
CHIP	Children's Health Insurance Program
CJR	Comprehensive Care for Joint Replacement
CMS	Centers for Medicare & Medicaid Services
CPC+	Comprehensive Primary Care Plus
CQL	Clinical Quality Language
CQMC	Core Quality Measures Collaborative
CY	calendar year
eCQI	electronic clinical quality improvement
eCQM	electronic clinical quality measure
ED	emergency department
DXA	dual-energy x-ray absorptiometry
EHR	electronic health record
ESRD	end-stage renal disease
FHIR	Fast Healthcare Interoperability Resources
FY	fiscal year
HHS	Health and Human Services (U.S. Department of)
IHE	Integrating the Healthcare Enterprise
IMPACT	Improving Medicare Post-Acute Care Transformation (Act)
IT	information technology
LDO	large dialysis organization
MACRA	Medicare Access and CHIP Reauthorization Act of 2015
MAP	Measure Applications Partnership
MDP	Measure Development Plan
MIDS	Measure & Instrument Development and Support
MIPS	Merit-based Incentive Payment System
MMS	Measures Management System
MPC	Measurement Policy Council
NPRM	notice of proposed rulemaking
NQF	National Quality Forum
NQMC	National Quality Measures Clearinghouse
OCM	Oncology Care Model
ONC	Office of the National Coordinator for Health Information Technology
PCI	percutaneous coronary intervention
PFE	Person and Family Engagement

Acronym	Definition
PQRS	Physician Quality Reporting System
PRO-PM	patient-reported outcome performance measure
PSA	prostate-specific antigen
QCDR	qualified clinical data registry
QDM	Quality Data Model
QIC	Quality Improvement Council
QMTF	Quality Measures Task Force
QOL	quality of life
QPS	Quality Positioning System
TEP	technical expert panel
VM	Value-based Payment Modifier