DEPARTMENT OF HEALTH AND HUMAN SERVICES

[CMS–3348–N]

Secretarial Review and Publication of the National Quality Forum 2017 Annual Report to Congress and the Secretary of the Department of Health and Human Services Submitted by the Consensus-Based Entity Regarding Performance Measurement

AGENCY: Office of the Secretary of Health and Human Services, HHS.

ACTION: Notice.

SUMMARY: This notice acknowledges the Secretary of the Department of Health and Human Services' (the Secretary) receipt and review of the National Quality Forum 2017 Annual Report to Congress and the Secretary submitted by the consensus-based entity under contract with the Secretary in accordance with the Social Security Act. The Secretary has reviewed and is publishing the report in the **Federal Register** together with the Secretary's comments on the report not later than 6 months after receiving the report in accordance with the Act.

FOR FURTHER INFORMATION CONTACT:
Sophia Chan, (410) 786–5050.

SUPPLEMENTARY INFORMATION:

I. Background

The United States Department of Health and Human Services (HHS) has long recognized that a high functioning health care system that provides higher quality care requires accurate, valid, and reliable measurement of quality and efficiency. The Medicare Improvements for Patients and Providers Act of 2008 (MIPPA) (Pub. L. 110–275) added section 1890 of the Social Security Act (the Act), which requires the Secretary of the Department of Health and Human Services (the Secretary) to contract with the consensus-based entity (CBE) to perform multiple duties designed to help improve performance measurement. Section 3014 of the Patient Protection and Affordable Care Act (the Affordable Care Act) (Pub. L. 111–148) expanded the duties of the CBE to help in the identification of gaps in available measures and to improve the selection of measures used in health care programs.

HHS awarded a competitive contract to the National Quality Forum (NQF) in January 2009 to fulfill the requirements of section 1890 of the Act. A second, multi-year contract was awarded to NQF after an open competition in 2012. A third, multi-year contract was awarded again to NQF after an open competition

in 2017. Section 1890(b) of the Act requires the following:

Priority Setting Process: Formulation of a National Strategy and Priorities for Health Care Performance Measurement. The CBE must synthesize evidence and convene key stakeholders to make recommendations on an integrated national strategy and priorities for health care performance measurement in all applicable settings. In doing so, the CBE is to give priority to measures that: (1) Address the health care provided to patients with prevalent, high-cost chronic diseases; (2) have the greatest potential for improving quality, efficiency, and patient-centered health care; and (3) may be implemented rapidly due to existing evidence, standards of care, or other reasons. Additionally, the CBE must take into account measures that: (1) May assist consumers and patients in making informed health care decisions; (2) address health disparities across groups and areas; and (3) address the continuum of care across multiple providers, practitioners and settings.

Endorsement of Measures: The CBE must provide for the endorsement of standardized health care performance measures. This process must consider whether measures are evidence-based, reliable, valid, verifiable, relevant to enhanced health outcomes, actionable at the caregiver level, feasible to collect and report, responsive to variations in patient characteristics such as health status, language capabilities, race or ethnicity, and income level, and are consistent across types of health care providers, including hospitals and physicians.

Maintenance of CBE Endorsed Measures: The CBE is required to establish and implement a process to ensure that endorsed measures are updated (or retired if obsolete) as new evidence is developed.

Review and Endorsement of an Episode Grouper Under the Physician Feedback Program: The CBE must provide for the review and, as appropriate, the endorsement of the episode grouper developed by the Secretary on an expedited basis.

Convening Multi-Stakeholder Groups: The CBE must convene multi-stakeholder groups to provide input on: (1) The selection of certain categories of quality and efficiency measures, from among such measures that have been endorsed by the entity; (2) such measures that have not been considered for endorsement by such entity but are used or proposed to be used by the Secretary for the collection or reporting of quality and efficiency measures; and (3) national priorities for improvement

in population health and in the delivery of health care services for consideration under the national strategy. The CBE provides input on measures for use in certain specific Medicare programs, for use in programs that report performance information to the public, and for use in health care programs that are not included under the Act. The multi-stakeholder groups provide input on quality and efficiency measures for various federal health care quality reporting and quality improvement programs including those that address certain Medicare services provided through hospices, hospital inpatient and outpatient facilities, physician offices, cancer hospitals, end stage renal disease (ESRD) facilities, inpatient rehabilitation facilities, long-term care hospitals, psychiatric hospitals, and home health care programs.

Transmission of Multi-Stakeholder Input: Not later than February 1 of each year, the CBE must transmit to the Secretary the input of multi-stakeholder groups.

Annual Report to Congress and the Secretary: Not later than March 1 of each year, the CBE is required to submit to Congress and the Secretary an annual report. The report must describe:

• The implementation of quality and efficiency measurement initiatives and the coordination of such initiatives with quality and efficiency initiatives implemented by other payers;

• Recommendations on an integrated national strategy and priorities for health care performance measurement;

• Performance of the CBE's duties required under its contract with the Secretary;

• Gaps in endorsed quality and efficiency measures, including measures that are within priority areas identified by the Secretary under the national strategy established under section 399HH of the Public Health Service Act (National Quality Strategy), and where quality and efficiency measures are unavailable or inadequate to identify or address such gaps;

• Areas in which evidence is insufficient to support endorsement of quality and efficiency measures in priority areas identified by the Secretary under the National Quality Strategy, and where targeted research may address such gaps; and

• The convening of multi-stakeholder groups to provide input on: (1) The selection of quality and efficiency measures from among such measures that have been endorsed by the CBE and such measures that have not been considered for endorsement by the CBE but are used or proposed to be used by the Secretary for the collection or

reporting of quality and efficiency measures; and (2) national priorities for improvement in population health and the delivery of health care services for consideration under the National Quality Strategy.

The statutory requirements for the CBE to annually report to Congress and the Secretary of HHS also specify that the Secretary must review and publish the CBE's annual report in the **Federal Register**, together with any comments of the Secretary on the report, not later than 6 months after receiving it.

This **Federal Register** notice complies with the statutory requirement for Secretarial review and publication of the CBE's annual report. NQF submitted a report on its 2017 activities to the Secretary on March 1, 2018. Comments from the Secretary on the report are presented in section II of this notice, and the National Quality Forum 2017 Annual Report to Congress and the Secretary of the Department of Health and Human Services is provided, as submitted to HHS, in the addendum to this **Federal Register** notice in section III.

II. Secretarial Comments on the National Quality Forum 2017 Annual Report to Congress and the Secretary of the Department of Health and Human Services

Once again, we thank NQF and the many stakeholders who participate in NQF projects for helping to advance the science and utility of health care quality measurement. As part of their annual recurring work to maintain a strong portfolio of endorsed measures for use across varied settings of care and health conditions, NQF reports that in 2017 it updated its measure portfolio by reviewing and endorsing or re-endorsing 120 measures and removing 109 measures. Endorsed measures are developed and implemented with input from numerous stakeholders. These measures undergo rigorous testing to ensure they are evidence-based, reliable, and valid. Continuous refinement of the measures portfolio through the measures maintenance process ensures that quality measures remain aligned with current field practices and health care goals. HHS, with the help of our partners, is committed to implementing measures that provide value to payers and actionable information that can be used to improve the health of patients.

NQF also undertook and continued a number of targeted projects dealing with difficult quality measurement issues. In particular, NQF has worked to help HHS address the unique challenges faced by rural communities. Nearly one in five Americans reside in rural communities.[1] HHS recognizes the unique challenges facing rural America, and with the support of partners like NQF, we are leveraging quality measurement to improve access and quality for healthcare providers serving rural patients. NQF recently completed several projects that focused on rural health, including Performance Measurement for Rural Low-Volume Providers[2] and Creating a Framework to Support Measure Development for Telehealth.[3] Our reforms in the area of rural health are part of our overall strategy to update our programs and improve access to high quality services.

In 2017, recognizing the need to strengthen representation of rural stakeholders in the pre-rulemaking process, HHS tasked NQF to establish a Measures Application Partnership (MAP) Rural Health Workgroup. The membership of the MAP Rural Health Workgroup, comprised of 18 organizational members, seven subject matter experts, and three federal liaisons, which reflects the diversity of rural providers and residents and allows for input from those most affected and most knowledgeable about rural measurement challenges and potential solutions. The MAP Rural Health Workgroup represents a continuation of HHS' effort to address rural health. With valuable input from our partners and stakeholders, HHS can continue to improve health care in rural America.

The MAP Rural Health Workgroup has focused on identifying a core set of the best available, ''rural-relevant'' measures to address the needs of the rural population. The MAP Rural Health Workgroup is also working to identify measurement gaps with respect to rural communities and provide recommendations regarding alignment and coordination of measurement efforts across both public and private programs, care settings, specialties, and sectors (both public and private). Additionally, the MAP Rural Health Workgroup provides guidance for the

MAP to ensure that measures under consideration address rural provider and resident needs and challenges. The MAP Rural Health Workgroup's recommendations are also helping to address specific barriers to quality reporting faced by rural clinicians. Furthermore, the MAP Rural Health Workgroup has provided a space for rural clinicians to broadly share their valuable input. Rural physicians contribute unique and valuable perspectives critical to addressing national challenges, such as the opioid epidemic. However, rural physicians are often isolated from national discussions on relevant measures that could identify areas of need and gauge prevalence. Highlighting the valuable input from rural clinicians opens collaboration opportunities between rural providers and providers in other settings as HHS works to integrate new measures concerning the prevention and treatment of opioid and substance use disorders.

Addressing the needs of rural health communities is just one of many areas in which NQF partners with HHS in enhancing and protecting the health and well-being of all Americans. HHS greatly appreciates the ability to collaborate with diverse stakeholders and partners to help develop the strongest possible approaches to quality measurement as a key component to health care delivery system reform.

III. Collection of Information Requirements

This document does not impose information collection requirements, that is, reporting, recordkeeping, or third-party disclosure requirements. Consequently, there is no need for review by the Office of Management and Budget under the authority of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).
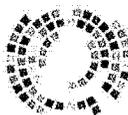
IV. Addendum

In this Addendum, we are publishing the *NQF Report on 2017 Activities to Congress and the Secretary of the Department of Health and Human Services,* as submitted to HHS.

Dated: June 21, 2018.

Alex M. Azar II,

Secretary, Department of Health and Human Services.

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[1] U.S. Census Bureau, 2010 Census, Table GCTPH1.

[2] *https://www.qualityforum.org/Publications/2015/09/Rural_Health_Final_Report.aspx.*

[3] *http://www.qualityforum.org/Publications/2017/08/Creating_a_Framework_to_Support_Measure_Development_for_Telehealth.aspx.*

NATIONAL
QUALITY FORUM

NQF Report on 2017 Activities to Congress and the Secretary of the Department of Health and Human Services

Advance Copy, February 2018

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I. Executive Summary

Quality measurement is an essential cornerstone of the national movement to achieve high-value healthcare that ensures meaningful outcomes for patients and reduces spending. The strong, bipartisan support in the public and private sectors reflects a continued national commitment to invest in quality measurement as a means to ensure high-quality, cost-effective care and to align healthcare system priorities to drive greater improvement and reduce unnecessary administrative burden on providers. Current initiatives to achieve these goals all rely on good, evidence-based quality measures, which help to identify areas for improvement, gauge success of efforts, reduce provider burden, and support transparency so that Americans can know that the care they are receiving is safe and effective.

The National Quality Forum (NQF) is an independent organization that brings together public- and private-sector stakeholders from across the healthcare system to determine the high-value measures that can best drive improvement in the nation's health and healthcare. NQF facilitates private-sector recommendations on quality measures proposed for use in federal programs, advances the science of performance measurement, and identifies and provides direction to address critical clinical, cross-cutting areas, called gaps, where quality measures are underdeveloped or nonexistent.

This annual report, *NQF Report on 2017 Activities to Congress and the Secretary of the Department of Health and Human Services*, highlights and summarizes the work that NQF performed between January 1 and December 31, 2017 under contract with the U.S. Department of Health and Human Services (HHS) in the following six areas:

- Recommendations on the National Quality Strategy and Priorities;
- Quality and Efficiency Measurement Initiatives (Performance Measures);
- Stakeholder Recommendations on Quality and Efficiency Measures;
- Gaps on Endorsed Quality and Efficiency Measures across HHS Programs;
- Gaps in Evidence and Targeted Research Needs; and
- Coordination with Measurement Initiatives by Other Payers.

Through two federal statutes and several extensions, Congress has recognized the role of a "consensus based entity" (CBE), currently NQF, in helping to forge agreement across the public and private sectors about what to measure and improve in healthcare. The 2008 Medicare Improvements for Patients and Providers Act (MIPPA) (PL 110-275) established the responsibilities of the consensus-based entity by creating section 1890 of the Social Security Act. The 2010 Patient Protection and Affordable Care Act (ACA) (PL 111-148) modified and added to the consensus-based entity's responsibilities. The American Taxpayer Relief Act of 2012 (PL 112-240) extended funding under the MIPPA statute to the consensus-based entity through fiscal year 2013. The Protecting Access to Medicare Act of 2014 (PL 113-93) extended funding under the MIPPA and ACA statutes to the consensus-based entity through March 31, 2015. Section 207 of the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) (PL 114-10) extended funding under section 1890(d)(2) of the Social Security Act for quality measure endorsement, input, and selection for fiscal years 2015 through 2017. Bipartisan action by numerous Congresses over several years has reinforced the importance of the role of the CBE.

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In accordance with section 1890 of the Social Security Act, NQF, in its designation as the CBE, is charged to report annually on its work to Congress and the HHS Secretary.

As amended by the above laws, the Social Security Act (the Act)—specifically section 1890(b)(5)(A)— mandates that the entity report to Congress and the Secretary of the Department of Health and Human Services (HHS) no later than March 1st of each year.

The report must include descriptions of:

1) how NQF has implemented quality and efficiency measurement initiatives under the Act and coordinated these initiatives with those implemented by other payers;

2) NQF's recommendations with respect to an integrated national strategy and priorities for healthcare performance measurement in all applicable settings;

3) NQF's performance of the duties required under its contract with HHS (Appendix A);

4) gaps in endorsed quality and efficiency measures, including measures that are within priority areas identified by the Secretary under HHS' national strategy, and where quality and efficiency measures are unavailable or inadequate to identify or address such gaps;

5) areas in which evidence is insufficient to support endorsement of measures in priority areas identified by the National Quality Strategy, and where targeted research may address such gaps; and

6) matters related to convening multistakeholder groups to provide input on: a) the selection of certain quality and efficiency measures, and b) national priorities for improvement in population health and in the delivery of healthcare services for consideration under the National Quality Strategy.[1]

The deliverables NQF produced under contract with HHS in 2017 are referenced throughout this report, and a full list is included in Appendix A. Immediately following is a summary of NQF's work in 2017 in each of the six aforementioned areas. These topics are discussed in further detail in the body of the report.

Recommendations on the National Quality Strategy and Priorities

NQF brought together organizations in the public and private sectors to help shape national healthcare priorities in the National Quality Strategy (NQS) that HHS released in 2011. Supporting these priorities, in 2017, NQF began or concluded work in several areas of importance, including rural health quality, healthcare disparities, strategies to address social determinants of health in state Medicaid programs, and measurement guidance for Medicaid and CHIP.

NQF's multistakeholder Rural Health Committee currently is exploring quality measurement challenges facing rural providers and will identify a core set of the best available "rural-relevant" measures to address the healthcare needs of the rural population. In a project that concluded in 2017, NQF's Disparities Standing Committee created a roadmap for how providers and payers can reduce healthcare disparities and promote health equity using performance measurement and its associated policy levers. In another project, NQF developed a framework for state Medicaid programs to better integrate health

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and nonhealth services, using food insecurity and housing instability as examples. NQF also continued to provide guidance to strengthen core measure sets for Medicaid and CHIP programs.

Quality and Efficiency Measurement Initiatives (Performance Measures)

Healthcare performance measures establish important standards of care and are key to enhancing healthcare value. NQF's portfolio of endorsed measures contains the most accurate and effective measures across a variety of clinical and cross-cutting topic areas. Public- and private-sector programs can use these measures for quality improvement and payment knowing that the measures have met criteria of scientific acceptability, usability, and feasibility—and can accurately discern the quality of provider performance.

In 2017, NQF endorsed 120 measures and removed 109 from its portfolio, across 18 endorsement projects focused on driving the healthcare system to be more responsive to patient and family needs (e.g., person- and family-centered care, care coordination, pediatrics, and palliative and end-of-life care), improving care for highly prevalent conditions (e.g., cardiovascular care; renal care; behavioral health; musculoskeletal health; eye care and ear, nose, and throat conditions; infectious disease; pediatrics; and cancer), and emphasizing cross-cutting areas to foster better care and coordination (e.g., behavioral health, patient safety, cost and resource use, health and well-being, and all-cause admissions and readmissions).

With input from dozens of public and private stakeholders, NQF continued to refine and improve its measure endorsement process and implemented significant changes to enhance and streamline processes. NQF also concluded a two-year trial looking at the impact of including social risk in the risk-adjustment models for certain measures, revealing opportunities as well as challenges. In addition, NQF began a new project to continue to advance understanding of attribution and potential best practices in quality reporting and value-based payment models.

Stakeholder Recommendations on Quality and Efficiency Measures

The Measure Applications Partnership (MAP) is a public-private partnership convened by NQF that provides input to HHS on the selection of quality and efficiency measures for pay-for-performance and quality reporting programs. The private sector also frequently adopts MAP's recommendations. MAP comprises more than 150 representatives from 90 private-sector stakeholder organizations and seven federal agencies—ensuring that the federal government receives varied and thoughtful input on the selection and continued use of performance measures in quality reporting and payment programs.

MAP's work fosters the use of more uniform measurement across federal programs and the public and private sectors. Alignment, or use of the same measures, helps better focus providers on key areas in which to improve quality; reduces wasteful data collection for hospitals, physicians, and nurses; and helps to curb the proliferation of similar, redundant measures that can confuse patients and payers.

For the 2016-2017 pre-rulemaking process, MAP convened three care setting-specific workgroups—Clinician, Hospital, and Post-Acute Care/Long-Term Care (PAC/LTC)—to review proposed measures for use in Medicare programs. MAP reviewed 74 measures—recommending 65 either for use in a federal

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program or for continued development. MAP workgroups convened again in late 2017 to review 35 measures for the 2017-2018 pre-rulemaking process.

Gaps on Endorsed Quality and Efficiency Measures across HHS Programs

NQF is committed to measurement that drives meaningful improvement in the healthcare system. In addition to endorsing high-value measures and recommending measures for use in federal programs, NQF standing committees and MAP, as well as the Medicaid task forces and workgroups, also identify measure gaps—areas in healthcare where high-value measures are too few or nonexistent—to drive improvement. These activities alert stakeholders, including measure developers and policymakers, about pressing measurement needs. The gaps identified in 2017 span conditions, settings, and issues, from care for costly and prevalent diseases to access to care to patient experience, and more. One common thread in discussions about gaps was the need for more outcome measures, particularly those that assess patient-reported outcomes.

Gaps in Evidence and Targeted Research Needs

Several NQF projects completed in 2017, as well as one that is underway, create needed strategic approaches to measure quality in areas critical to improving health and healthcare for the nation. NQF's foundational work in these important areas underpins future efforts to improve quality through measurement and ensure safer, patient-centered, cost-effective care that reflects current science and evidence.

NQF completed projects to create strategic measurement approaches for assessing the quality of telehealth, diagnostic safety and accuracy, and transitions of care into and out of emergency departments. NQF also developed a measurement structure for assessing progress toward interoperability, an important area for advancing care that continues to present significant challenges to healthcare organizations. In other work, NQF continued its efforts to support structured reporting of patient safety events in hospitals and other care settings. NQF also began a new project to identify measure concepts that can be used to improve the quality and safety of care in ambulatory care settings.

Coordination with Measurement Initiatives by Other Payers

NQF completed a project to identify measures to support states' efforts to reform Medicaid payment and service delivery. The Medicaid Innovation Accelerator project authorized under the ACA section 3021 provided the CMS Center for Medicaid and Children's Health Insurance Program (CHIP) Services (CMCS) with aligned measure sets across multiple states to support efforts in four high-cost, high-need areas of care for the Medicaid population: reducing substance use disorders, improving care for beneficiaries with complex care needs and high costs, promoting community integration through community-based, long-term care services and supports, and supporting the integration of physical and mental health.

Adding to NQF's efforts to encourage the use of more meaningful measures and reduce measure burden on providers, NQF in 2017 continued to contribute technical guidance to the Core Quality Measures Collaborative workgroups. The initiative, led by America's Health Insurance Plans (AHIP), and which also

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involves the Centers for Medicare & Medicaid Services (CMS), brought together private- and public-sector payers to reach consensus on core performance measures. In 2017, the Collaborative added pediatrics measures to its sets of clinician-level core measures intended to promote alignment of measure sets across payers.

II. Recommendations on the National Quality Strategy and Priorities

Section 1890(b)(1) of the Social Security Act (the Act), mandates that the consensus-based entity (entity) shall "synthesize evidence and convene key stakeholders to make recommendations . . . on an integrated national strategy and priorities for health care performance measurement in all applicable settings. In making such recommendations, the entity shall ensure that priority is given to measures: (i) that address the health care provided to patients with prevalent, high-cost chronic diseases; (ii) with the greatest potential for improving the quality, efficiency, and patient-centeredness of health care; and (iii) that may be implemented rapidly due to existing evidence, standards of care, or other reasons." In addition, the entity is to "take into account measures that: (i) may assist consumers and patients in making informed health care decisions; (ii) address health disparities across groups and areas; and (iii) address the continuum of care a patient receives, including services furnished by multiple health care providers or practitioners and across multiple settings."[2]

Additionally, section 1890(b)(5)(A)(vi) of the Social Security Act, requires that this report describe matters related to multistakeholder input on national priorities for improvement in population health and in delivery of health care services for consideration under the National Quality Strategy.

In 2010, at the request of HHS, the NQF-convened National Priorities Partnership (NPP) provided input that helped shape the national healthcare priorities in the initial version of the National Quality Strategy (NQS) that HHS released in March 2011.[3] The Centers for Medicare & Medicaid Services (CMS) continues to align its work with the priorities of making care safer, strengthening person and family engagement, promoting effective communication, promoting effective prevention and treatment of chronic disease, working with communities to promote best practices of healthy living, and making care affordable in partnership with public and private healthcare stakeholders across the country.

Annually, NQF has continued to endorse measures reflective of these national priorities and convene diverse stakeholder groups to reach consensus on key strategies for performance measurement and quality improvement. In 2017, NQF completed or began work in key areas of importance that address healthcare priorities. This work includes projects to improve measurement of care quality in rural settings, reduce healthcare disparities, address social determinants of health, and recommend measures to evaluate care for the population enrolled in Medicaid and CHIP. These initiatives are described below. Additional projects to develop measurement structures to assess the quality of telehealth, progress toward interoperability, transitions of care from emergency departments, and the quality and safety of diagnoses are described in another section of this report, "Gaps in Evidence and Targeted Research Needs."

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Priority Initiative to Improve Rural Healthcare

More than 59 million Americans—approximately 19 percent of the U.S. population—live in rural areas.[4] Statistics indicate that rural residents may be more disadvantaged overall than those in urban or suburban areas, particularly with respect to sociodemographic factors, health status and behaviors, and access to the healthcare delivery system. For example, rural Americans are more likely to be older; have chronic health conditions; engage in poor health behaviors such as smoking; and have higher rates of social disadvantages, such as low income, high unemployment, and lower educational attainment.[5,6] Rural Americans are also more likely to experience difficulties accessing primary care, dental, and mental healthcare, given the shortage of providers in rural areas.[7] The continuing trend of rural hospital closures has also affected rural Americans' ability to access care in their communities.[8]

Rural hospitals and clinicians participate in a variety of private-sector, state, and a limited number of federal quality measurement and improvement efforts. In a 2015 HHS-funded project, NQF convened a multistakeholder Rural Health Committee to explore in depth the quality measurement challenges facing rural providers.

Multiple and disparate demands (e.g., direct patient care, business and operational responsibilities) compete for the time and attention of providers who serve in small rural hospitals, and providers in rural clinical practices often have limited time, staff, and finances available for quality improvement activities. In addition, some rural areas may lack information technology (IT) capabilities altogether and/or IT professionals who can leverage those capabilities for quality measurement and improvement efforts. The heterogeneity of residents in many rural areas, such as a disproportionate number of vulnerable residents, has particular implications for healthcare performance measurement, including limited applicability of measures and potentially, the need for modifications in the risk-adjustment approach for certain measures.[9] Moreover, depending on the particular performance measure, rural providers may not have enough patients to achieve reliable and valid measurement results. While urban areas may experience many of these same difficulties, in rural areas they likely pose greater challenges for, and have greater impact on, quality measurement and improvement activities.

Some measurement challenges are unique to rural providers. For example, many do not participate in current CMS quality programs because they don't exist, or participate—in the case of Critical Access Hospitals (CAHs)—only on a voluntary basis, and thus may have limited experience in collecting data and reporting on healthcare performance measures. Also, claims-based performance measures may not provide valid results for those rural providers who do not submit comprehensive data because they do not rely on claims reimbursements for payment.

The NQF Rural Health Committee made a series of recommendations to CMS, particularly in the context of pay-for-performance programs and improving quality in rural areas. The Committee's overarching recommendation[10] was to integrate rural healthcare providers into federal quality programs. The Committee noted that rural providers' nonparticipation in federal quality programs may affect the ability of these providers to identify and address opportunities for improvement, as well as demonstrate how they perform compared to their nonrural counterparts.

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The Committee's remaining recommendations were intended to help ease the transition of rural providers to mandatory participation in CMS quality programs. These recommendations include: to develop rural-relevant measures (e.g., to address topics such as patient hand-offs and transitions, address the low case-volume challenge, and include appropriate risk adjustment); align measurement efforts (including measures themselves, data collection efforts, and informational resources); consider rural-specific challenges during the measure-selection process, create a rural health workgroup to advise the Measure Applications Partnership (MAP); and address the design and implementation of pay-for-performance programs.

In 2017, recognizing the lack of representation from rural stakeholders in the pre-rulemaking process, CMS tasked NQF to implement the 2015 Rural Health Workgroup's recommendation to establish a MAP Rural Health Workgroup (see Appendix G). This Workgroup, comprised of 18 organizational members, seven subject matter experts, and three federal liaisons, was seated in November 2017. Because Workgroup members reflect the diversity of rural providers and residents, it includes the perspectives of those most affected and those most knowledgeable about rural measurement challenges and potential solutions. Input from such rural experts will allow the setting-specific MAP Workgroups and Coordinating Committee to consider measurement challenges that rural providers face, including the limitations of current or proposed measures.

A major task of the MAP Rural Health Workgroup will be to identify a core set of the best available, "rural-relevant" measures to address the needs of the rural population. During its first year, the Workgroup will focus on measures that are potentially applicable to CMS' hospital inpatient and outpatient quality reporting programs and its clinician-focused quality reporting programs. The Workgroup also will identify rural-relevant gaps in measurement and provide recommendations regarding alignment and coordination of measurement efforts across both public and private programs, care settings, specialties, and sectors (both public and private). Additionally, the Workgroup will provide guidance to address a measurement topic relevant to vulnerable individuals in rural areas and will provide input on Measures Under Consideration (MUC) specific to the needs and challenges of rural providers and residents. NQF will issue a final report on this work in September 2018. In future years, if it is funded to continue its work, the Workgroup will shift attention to measures applicable in post-acute and long-term care settings.

Quality Roadmap to Reduce Healthcare Disparities and Promote Health Equity

Widespread recognition of health and healthcare disparities has prompted HHS as well as many other organizations in the public and private sectors to prioritize health equity as a key component of healthcare quality improvement. Disparities are differences caused by inequities that are linked to social, economic, and/or environmental disadvantages, and these differences persist despite overall improvements in public health and medicine. Achieving health equity requires eliminating disparities in healthcare delivery and outcomes by addressing social risk factors that adversely affect excluded or marginalized groups.

Performance measurement is an essential tool for monitoring health disparities and assessing the level to which research-based interventions are employed to reduce disparities. Measures can help to

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pinpoint where people with social risk factors do not receive the care they need or receive care that is lower quality. However, there was no comprehensive approach for HHS and other stakeholders to use measurement to eliminate disparities and promote health equity.

In 2016, HHS funded NQF to convene the Disparities Standing Committee, a multistakeholder group of experts (e.g., payers, providers, researchers, and patients) to develop recommendations for how performance measurement, and its associated policy levers, can be used to reduce disparities in health and healthcare. NQF documented the project through three interim reports published in 2017, each of which examines disparities based on social risk factors identified in the 2016 National Academy of Medicine (NAM) report, *Accounting for Social Risk Factors in Medicare Payment: Identifying Social Risk Factors*,[11] e.g., socioeconomic position, race, ethnicity, residential and community context, and sexual orientation.

The first interim report, *Disparities in Healthcare and Health Outcomes in Selected Conditions*,[12] documented disparities in health and healthcare among leading causes of morbidity and mortality for certain conditions from a review of published literature. These conditions include cardiovascular diseases, cancer, diabetes and chronic kidney disease, infant mortality/low birthweight, and mental illness. The report documents significant disparities across all of the selected conditions and highlights the urgent need for a systematic approach to eliminate disparities through measurement. The report includes examples of interventions that were successful in reducing disparities, such as improving outcomes in diabetes and cardiovascular disease. It also cites the *2016 National Healthcare Quality and Disparities Report*,[13] which documents smaller disparities for 20 percent of measures (e.g., care coordination, patient safety, and affordability) between African Americans and Non-Hispanic Whites.

The second interim report, *Effective Interventions in Reducing Disparities in Healthcare and Health Outcomes in Selected Conditions*,[14] identified interventions (e.g., patient education, lifestyle modification, and culturally tailored programs) that could be used to address disparities documented in the first interim report. The Disparities Standing Committee and NQF staff reviewed the research on interventions that have effectively reduced disparities. They found that interventions to reduce disparities currently are focused largely on reducing disparities based on race and ethnicity. In addition, interventions are usually implemented to address disparities in one condition or to address disparities for one social risk factor. The findings indicate potential for multitarget interventions that could address disparities across conditions and for multiple social factors.

The third interim report, *An Environmental Scan of Health Equity Measures and a Conceptual Framework for Measure Development*,[15] documented 886 performance measures that can be used either to monitor disparities within the selected conditions explored in the first interim report or to assess the use of evidence-based interventions identified in the second interim report. Most measures evaluated processes or outcomes of healthcare, and few gauged the use of evidence-based interventions. The environmental scan pointed to several gaps in measurement and areas for future research.

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The Disparities Standing Committee used the outcomes of each interim report to inform its final recommendations. Published September 2017, the final report, *A Roadmap for Promoting Health Equity and Eliminating Disparities,*[16] outlines how the U.S. healthcare system (e.g., providers and payers) can build on existing standards of care, measurement practices, and payment models to address disparities. It also identifies areas where collaboration between health and nonhealth sectors and community linkages can be used to expand the healthcare system's role to better address the upstream causes of disparities.

The Roadmap provides guidance for addressing a wide spectrum of disparities based on age, gender, income, race, ethnicity, nativity, language, sexual orientation, gender identity, disability, geographic location, and other social risk factors. It emphasizes the importance of cultural competence, community engagement, and cross-sector partnerships to reduce disparities. In particular, the Roadmap addresses measurement beyond clinical settings, structures, and processes of care. For example, it includes the assessment of collaboration between healthcare and other sectors (e.g., schools, social services, transportation, housing, etc.) to reduce the impact of social risk factors and achieve health equity.

The Roadmap suggests actions that healthcare stakeholders can employ to reduce disparities, including:

Prioritize measures that can help to identify and monitor disparities (disparities-sensitive measures). Measure implementers should prioritize the use of measures that are sensitive to disparities in health and healthcare. Disparities-sensitive measures detect differences in quality across institutions or in relation to certain benchmarks, but also differences in quality among population or social groups. The Roadmap specifies criteria to assist with the prioritization of disparities-sensitive measures.

Implement evidence-based interventions to reduce disparities. Stakeholders should implement evidence-based interventions to reduce disparities at every level of the healthcare system (i.e., government, community, organization, and individual levels).

Invest in the development and use of measures to assess interventions that reduce disparities (health equity measures). The Committee identified five domains of measurement that should be used together to reduce disparities and advance health equity. These domains assess the extent to which the healthcare system:

- Collaborates and partners with other organizations or agencies that influence the health of individuals (e.g., neighborhoods, transportation, housing, education, etc.) to address social needs.
- Adopts and implements a culture of equity. A culture of equity recognizes and prioritizes the elimination of disparities through genuine respect; fairness; cultural competency; the creation of environments where all individuals, particularly those from diverse and/or stigmatized backgrounds, feel safe in addressing difficult topics, e.g., racism; and advocating for public and private policies that advance equity.
- Creates structures that support a culture of equity. These structures include policies and procedures that institutionalize values that promote health equity, commit adequate resources for the reduction of disparities, and enact systematic collection of data to monitor and provide transparency and accountability for the outcomes of individuals with social risk factors.

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- Ensures equitable access to healthcare. Equitable access means that individuals with social risk factors are able to easily get care. It also means care is affordable, convenient, and able to meet the needs of individuals with social risk factors.
- Ensures high-quality care that continuously reduces disparities. Performance measures should be routinely stratified by social risk to identify disparities in care. In addition, performance measures should be used to create accountability for reducing, and ultimately, eliminating disparities through effective interventions.

Provide incentives to reduce disparities. Providers and other stakeholders should be incentivized to reduce disparities through recognition, payment, or additional resources. For example, public and private payers can adjust payments to providers based on social risk factors or offer additional payments for primary care or disease management programs (e.g., in-home monitoring of blood pressure).

The Committee suggested ways for sectors of the healthcare system to pursue specific actions, including that:

- Hospitals and health plans identify and prioritize reducing disparities and distinguish which they can address in the short- and long-term;
- Clinicians implement evidence-based interventions by connecting patients to community-based services or culturally tailored programs shown to mitigate the drivers of disparities;
- Measure developers work with patients to translate concepts of equity into performance measures that can directly assess health equity; and
- Policymakers and payers incentivize the reduction of disparities and the promotion of health equity by building health equity measures into new and existing healthcare payment models.

The Committee developed a set of 10 recommendations to support reducing disparities and promoting health equity. Among its recommendations, the Committee supports providing primary care practices incentives to support preventive activities for patients with social risk factors. Equitable access starts with unconstrained access to primary care. Robust systems of primary care are associated with improved population health and reduced disparities. Primary care plays a unique role in promoting equity through its comprehensive and biopsychosocial focus, longitudinal personal relationships, and its capacity to align intensity of care management with patient needs. The Committee's complete list of recommendations follows:

Recommendation 1: Collect social risk factor data.
Data are the bedrock of all measurement activities; however, data on social risk factors are currently limited. As such, stakeholders must invest in the necessary infrastructure to support data collection. There is a general need for data collection related to social risks like housing instability, food insecurity, gender identity, sexual orientation, language, continuity of insurance coverage, etc.

Recommendation 2: Use and prioritize stratified health equity outcome measures.
Stakeholders should first conduct a needs assessment to identify the extent to which they are meeting the goals outlined in the Roadmap. The domains of measurement should be considered as a whole rather than aiming to make progress in only one area. Stakeholders must actively identify and decommission measures that have reached ceiling levels of performance and where there are insignificant gaps in performance.

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Recommendation 3: Prioritize measures in the domains of Equitable Access and Equitable High-Quality Care for accountability purposes.

Some measures within the domains of measurement are more suitable for accountability and others, for quality improvement. The majority of measures that fall within the domains of *Culture for Equity*, *Structure for Equity*, and *Collaboration and Partnerships* should be used primarily for quality improvement initiatives and are less appropriate for accountability. Measures that are aligned with the domains of *Equitable Access to Care* and *Equitable High-Quality Care* may be more suitable for accountability.

Recommendation 4: Invest in preventive and primary care for patients with social risk factors.

Equitable access starts with unconstrained access to primary care. People with low health literacy, limited eHealth literacy, limited access to social networks for reliable information, or who are challenged with navigating a fragmented healthcare system often rely on continuity with a trusted primary care provider. Primary care's capacity to care for people (rather than diseases) across medical, behavioral, and psychosocial dimensions while providing resources and services to align with these needs is vital to improving health equity. Ultimately, incentives are needed to prioritize support for traditionally underfunded preventive activities.

Recommendation 5: Redesign payment models to support health equity.

Payment models designed to promote health equity have the potential to have a large impact on reducing disparities. For example, health plans can provide upfront payments to fund infrastructure for achieving equity and addressing the social determinants of health. Health plans also can implement pay-for-performance payment models that reward providers for reducing disparities in quality and access to care. The Committee noted that purchasers could use mixed model approaches, combining payment models based on their specific goals (e.g., upfront payments and pay-for-performance to reduce disparities). Payment models can also be phased, using pay-for-reporting, then pay-for-performance incentives.

Recommendation 6: Link health equity measures to accreditation programs.

Integrating health equity measures into accreditation programs can increase accountability for reducing disparities and promoting health equity. These measures can be linked to quality improvement-related equity building activities. Organizations like the National Committee for Quality Assurance (NCQA) and URAC have already aligned with this strategy.

Recommendation 7: Support outpatient and inpatient services with additional payment for patients with social risk factors.

Social risk factors are like clinical risk factors in the sense that they require more time and effort on the part of providers in specific encounters to achieve the same results. If an office visit is more complex (and billed and paid at a higher level) because of clinical complexity in a patient, the same concept could extend to the incorporation of social risk factors and "social complexity" as a payment concept.

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Recommendation 8: Ensure organizations disproportionately serving individuals with social risk can compete in value-based purchasing programs.

Payers should consider additional payments to assist organizations in developing the infrastructure to provide high-quality care for people with social risk factors. There is a need to adjust for social risk factors as well as stratify performance scores by social risk to ensure transparency and drive improvement. In addition, relevant stakeholders should prospectively monitor the financial impact of value-based purchasing programs on organizations caring for individuals with social risk factors.

Recommendation 9: Fund care delivery and payment reform demonstration projects to reduce disparities.

The evidence base for many care delivery and payment reform interventions to reduce healthcare disparities is still limited. There is a need to better understand what work is being done to reduce disparities, what interventions are effective, and how these interventions can be replicated in practice (e.g., implementation science). Future research and demonstration projects should be conducted in partnership with researchers to ensure they are rigorous and scientifically sound.

Recommendation 10: Assess economic impact of disparities from multiple perspectives.

There is limited understanding of the economic impact of disparities. Quantifying the costs in terms such as lost productivity, quality-adjusted life years, readmission rates, emergency department use, etc., could help organizations understand the imperative to invest in health equity.

A Framework for Medicaid to Address Social Determinants of Health

State Medicaid programs are making significant advances in addressing social determinants of health (SDOH) to improve health outcomes.[17,18,19] Evidence is growing that SDOH—such as where people live, how much money they earn, and their level of education—have significant impact on health and well-being.[20] Several states have implemented waivers and new financing mechanisms to support the collection of SDOH data and coordination of care based on SDOH.[21] However, the evidence-base for screening and addressing social needs is still developing. Numerous organizations have called for a framework to help state Medicaid programs make strategic investments in the collection and use of SDOH data.

Funded by CMS, NQF convened an Expert Panel to develop a framework for state Medicaid programs to better integrate health and nonhealth services, using food insecurity and housing instability as illustrative examples. The Expert Panel included a variety of stakeholder groups such as clinicians, researchers, health plans, health systems, and consumer advocates. Food insecurity and housing instability were selected as key areas where state Medicaid programs can support data collection efforts in the short term.

To support this work, NQF conducted a literature review on the impact of food insecurity and housing instability on health outcomes, an environmental scan of measures (e.g., screening tools, performance measures, scales, assessments, etc.), and key informant interviews. Key informants represented organizations working to reduce the incidence of food insecurity and housing instability. The interviews offered insights into barriers and opportunities. For example, many informants cited a lack of resources

in communities such as food deserts, areas without food banks, and long waiting lists for housing supports.

The Expert Panel identified a framework that builds on the hub-and-spoke model by Taylor et al., and on work from the Social Interventions Research & Evaluation Network at the University of California San Francisco.[22,23] The framework positions Medicaid programs at the "hub" as a primary health care entity that connects healthcare to nonhealth services that can address social needs (the "spokes") to the healthcare system. The "spokes" include services like housing supports, food and nutritional supports, home and community-based services, and employment services. The framework illustrates the role of Medicaid programs in supporting SDOH Informed Healthcare, using information on social needs in clinical decision making for Medicaid beneficiaries, and SDOH Targeted Healthcare—connecting individuals to nonhealth services that can address SDOH (e.g., Temporary Assistance of Needy Families, Head Start, and homelessness assistance programs).

In its final report, completed December 2017, the Expert Panel shared a set of six recommendations to support the implementation of the framework:

1. *Acknowledge Medicaid has a role in addressing social determinants of health*
2. *Create a comprehensive, accessible, routinely updated list of community resources*
3. *Harmonize tools that assess social determinants of health*
4. *Create standards for inputting and extracting social needs data from electronic health records*
5. *Increase information sharing between government agencies*
6. *Expand the use of waivers and demonstration projects to learn what works best for screening and addressing SDOH*

2017 Measurement Guidance for Medicaid and CHIP

Medicaid is the largest health insurance program in the United States, serving 74 million individuals. Nearly 36 million, or almost half of the people enrolled in Medicaid and CHIP are children.[24] As the primary health insurance program for the nation's low-income population,[25] Medicaid covers many individuals with a high need for medical and healthcare services, including the growing population of more than 11 million individuals who are dually eligible for both Medicare and Medicaid.[26] Medicaid beneficiaries with complex care needs account for roughly 54 percent of total Medicaid expenditures, despite comprising just 5 percent of all Medicaid beneficiaries.[27] Moreover, Medicaid covers nearly 50 percent of all births as well as 40 percent of children's healthcare.[28] Understanding the needs of adults and children who rely on Medicaid for their healthcare is imperative for improving their health and the quality of their care.

In 2017, NQF continued its efforts to improve healthcare for the population enrolled in Medicaid and CHIP by recommending standardized measures to evaluate quality of care across states in key areas. NQF issued its recommendations on Medicaid's core measures in a series of three reports.

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Strengthening the Core Set of Healthcare Quality Measures for Adults Enrolled in Medicaid, 2017[29]
Section 1139B of the Social Security Act (amended by the ACA) called for the creation of a Core Set of Health Care Quality Measures for Adults Enrolled in Medicaid (the Adult Core Set) to assess the quality of care for adults enrolled in Medicaid. HHS established the Adult Core Set to standardize the measurement of healthcare quality across state Medicaid programs, assist states in collecting and reporting on the measures, and facilitate use of the measures for quality improvement.[30] In January 2012, HHS published the initial Adult Core Set of measures in partnership with a subcommittee to the AHRQ's National Advisory Council.[31] The 2017 Adult Core Set contained 30 healthcare quality measures.

NQF's Medicaid Adult Task Force recommended improvements to the Adult Core Set annually. The Task Force also has identified high-priority gaps where more or better quality measures are needed. In its fifth set of recommendations on the Adult Core Set, published in August 2017, the Task Force recommended the addition of four measures to address care of patients with asthma, patients' feedback about the quality of long-term services received in a community setting, opioid use, and contraceptive use. The Task Force supported the removal of two measures from the Adult Core Set, citing states' reporting challenges regarding data collection for one measure and encouraging the addition of a more meaningful replacement for the other that focused on counting office visits, rather than the content of the visits, to address patient outcomes.

Thirty-nine states reported on at least one of the Adult Core Set measures for federal fiscal year (FFY) 2015.[32] State reporting increased for 20 of the 25 measures included in both the 2014 and 2015 Adult Core Sets.[33] The gradual addition of measures to the Core Set has allowed states to build their measure-reporting infrastructure, as evidenced by the increase in the number of states voluntarily reporting on measures. The Task Force suggested optimizing data connections between data systems and among organizations, as well as improving integration across local, state, and federal health entities as some of the ways states could improve quality and Adult Core Set reporting.

NQF has begun its next annual review of the Adult Core Set with the appointment of a new, multistakeholder Medicaid Adult Workgroup. The results are due to CMS by the end of August 2018.

Strengthening the Core Set of Healthcare Quality Measures for Children Enrolled in Medicaid and CHIP, 2017[34]
The Children's Health and Insurance Program Reauthorization Act of 2009 (CHIPRA) required HHS to develop standards to measure the quality of children's healthcare. This legislative mandate led to the identification of the Core Set of Health Care Quality Measures for Children Enrolled in Medicaid and CHIP (the Child Core Set). CMS released the initial Child Core Set in 2010. Measures in the Child Core Set are relevant to children ages 0-20 as well as pregnant women because these measures address both prenatal and postpartum quality-of-care issues. CHIPRA also required CMS to recommend updates to the initial Child Core Set annually beginning in January 2013. The 2017 Child Core Set contained 27 healthcare quality measures.

NQF's Medicaid Child Task Force has recommended improvements to the Child Core Set annually. The Task Force also has identified high-priority gaps where more or better quality measures are needed. In

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its fourth set of annual recommendations on the Child Core Set, published in August 2017, the Task Force recommended the addition of five measures to address access to care, behavioral health, and care of patients with asthma. The Task Force supported the removal of five measures, citing the need for better measures that focus on care quality, not frequency of services.

Every state reported on at least some of the Child Core Set measures for FFY 2015.[35] State reporting increased for 16 of the 23 measures included in both the 2014 and 2015 Child Core Sets.[36] As with the Adult Core Set, the gradual addition of measures to the Child Core Set has allowed states to build their measure-reporting infrastructure, as evidenced by the increase in the number of states voluntarily reporting on measures. The Task Force suggested optimizing data connections between data systems and among organizations, as well as improving integration across local, state, and federal health entities as some of the ways states could improve quality and Child Core Set reporting.

NQF has begun its next annual review of the Child Core Set with the appointment of a new, multistakeholder Medicaid Child Workgroup. The results are due to CMS by the end of August 2018.

Promoting Integrated and Coordinated Care that Addresses Social Risk for the Dual Eligible Beneficiary Population[37]

Dual eligible beneficiaries are a growing population with complex needs that require high levels of services and supports.[38] Dual eligible beneficiaries comprise 20 percent of Medicare beneficiaries but account for 34 percent of annual spending, at approximately $187 billion. Similarly, dual eligible beneficiaries comprise 15 percent of Medicaid beneficiaries but account for 33 percent of annual spending at approximately $119 billion.[39] NQF's Dual Eligible Workgroup was established six years ago to address the unique challenges of caring for the nation's most vulnerable population. The Workgroup identified a core set of healthcare quality measures for this population, the Dual Eligible Beneficiaries Family of Measures (the Family of Measures), which it has annually reviewed and updated. The 2017 Family of Measures contained 71 healthcare quality measures. The Starter Set, a subset of the Family of Measures that addresses critical clinical issues for the dual eligible population, contained 16 measures.

In its 2017 review of the Family of Measures, the Workgroup recommended the addition of measures addressing functional change, hospital discharges to community settings, patients' feedback about the quality of long-term services received in a community setting, and population-level HIV viral load suppression. The Workgroup supported the removal of eight measures from the Family of Measures because they are no longer NQF-endorsed.

The Workgroup discussed the need for better coordination and integration of efforts to include various stakeholders, such as federal agencies and community organizations, along with effective use of available measurement tools. To accomplish these objectives, the Workgroup recommended that HHS develop a collaboration strategy for federal agencies and work with community-based organizations.

The Workgroup discussed the need for a paradigm shift in measure conceptualization and development. Workgroup members suggested that future measure development should start at the individual beneficiary level to address the population's needs and gap areas. The Workgroup also encouraged

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measurement that has an expanded focus on quality, for example, to help connect medical and social care.

The Workgroup emphasized the need for a population-based measurement framework that recognizes and measures the effects of social risk factors on health outcomes. The Workgroup identified 11 social risk factors that underscore the complexity of the dual eligible population, including social support, residential and community context, and socioeconomic position, status, and income.

HHS has not funded NQF in 2018 to review the Family of Measures. However, NQF will continue its efforts to improve the quality of care for vulnerable individuals by incorporating the needs of dual eligible beneficiaries across all of its work, including measure review and endorsement, review of Medicaid core measure sets, and the work of its Disparities Standing Committee. NQF also will continue to explore opportunities to re-engage the Duals Workgroup in the future.

III. Quality and Efficiency Measurement Initiatives (Performance Measurement)

Section 1890(b)(2) and (3) of the Social Security Act requires the consensus-based entity (CBE) to endorse standardized healthcare performance measures. The endorsement process must consider whether measures are evidence-based, reliable, valid, verifiable, relevant to enhanced health outcomes, actionable at the caregiver level, feasible for collecting and reporting, responsive to variations in patient characteristics, and consistent across types of healthcare providers. In addition, the CBE must establish and implement a process to ensure that measures endorsed are updated (or retired if obsolete) as new evidence is developed.[40]

Working with multistakeholder committees to build consensus, NQF reviews and endorses healthcare performance measures. Measures help clinicians, hospitals, and other providers understand whether the care they provide their patients is optimal, and appropriate, and if not, where to focus improvement efforts. The federal government, states, and private-sector organizations use NQF-endorsed measures to evaluate performance; inform employers, patients, and their families; and drive quality improvement. Together, NQF-endorsed measures serve to enhance healthcare value by ensuring that consistent, high-quality performance data are available, which allows for comparisons across providers as well as the ability to benchmark performance. Currently, NQF has a portfolio of 628 NQF-endorsed measures. Subsets of this portfolio apply to particular settings and levels of analysis.

Important Changes to NQF Measure Endorsement

NQF is committed to making measure endorsement more efficient, fostering innovation, and enabling greater access to NQF's technical assistance.

NQF's measure endorsement process, also referred to as the Consensus Development Process (CDP), provides the nation, including HHS' public reporting and pay-for-performance initiatives, with a portfolio of measures that meet rigorous evaluation criteria and that are reflective of the current evidence, reliable and valid, useful for accountability and quality improvement, and feasible to implement.

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Since NQF approved the first version of the CDP in July 2000, NQF has continuously refined its process to address the needs of the healthcare industry. Many of these refinements have been incremental and others more substantive, requiring pilot testing and significant operational changes. With CMS funding, NQF hosted its most recent process improvement event May 18-19, 2017, which involved thoroughly examining how NQF endorses measures, specifically to make the process more agile and reduce the cycle time for measure submission and review. More than 40 private- and public-sector stakeholders—including experts from CMS and other federal agencies, members of NQF standing committees, and representatives of organizations that develop measures—also provided input, as did NQF members and the public. The resulting changes are outlined in the *2017 Consensus Development Process Redesign*[41] report.

Increased Opportunities for Measure Submission

Among the most significant changes is that NQF standing committees can now evaluate measures for endorsement twice a year. Previously, standing committees reviewed a select few new and current measures each year, contingent on funding. With this change to more frequent endorsement review, NQF aims to reduce standing committee downtime and be more responsive to the rapidly evolving healthcare system. However, NQF now limits the number of measures that may be evaluated by its standing committees in one measure review cycle to a maximum of 12, including up to eight measures undergoing maintenance review and up to four measures being evaluated for initial endorsement. Limiting the number of measures reviewed in a cycle ensures that the standing committees have the capacity to provide each measure with a thorough, efficient, and rigorous review.

Consolidated Measure Review Topical Areas

To optimize the evaluation of NQF's library of measures, NQF consolidated or modified some of its committees. These modifications help to balance measure portfolios and grouped cross-cutting clinical areas, such as Primary Care and Chronic Illness and Geriatrics and Palliative Care. NQF's measure portfolio now comprises 15 topical areas, including:

- All-Cause Admissions/Readmissions
- Behavioral Health and Substance Use
- Cancer
- Cardiovascular
- Cost and Efficiency
- Geriatric and Palliative Care
- Neurology
- Patient Experience and Function
- Patient Safety
- Pediatrics
- Perinatal and Women's Health
- Prevention and Population Health
- Primary Care and Chronic Illness
- Renal
- Surgery

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Individual standing committees will no longer convene for the following topical areas: Person- and Family-Centered Care; Ears, Eyes, Nose, and Throat Conditions; Endocrine; Musculoskeletal; Infectious Diseases; Care Coordination; Gastrointestinal; and Genitourinary.

Intent to Submit

NQF now requires measure developers and stewards to submit measure specifications and testing information along with an Intent to Submit form at least three months prior to the measure submission deadline. This advance notification will allow NQF to adequately plan for measures in the pipeline and maintenance measures ready for re-evaluation in the various topic areas. NQF also encourages measure developers to seek technical assistance from NQF staff during this time.

Technical Review: NQF Scientific Methods Panel

In September 2017, NQF established the Scientific Methods Panel (SMP) (see Appendix C) to assist in conducting methodological reviews of measures being reviewed for endorsement. The Panel's creation was in response to feedback from key stakeholders who took part in NQF's 2017 process improvement event. These stakeholders noted the challenges many standing committee members face conducting technical reviews of measures when their background is not in statistics or measure development. Stakeholders recommended that NQF shift the responsibility of scientific review of measures from the committees to an SMP and NQF staff. Their intent was to allow consumers, patients, purchasers, and other members of NQF standing committees to focus on bringing their expertise to the subject matter under consideration and to be more engaged throughout the evaluation process.

The SMP consists of 24 individuals with methodological expertise. Panel members are appointed to an initial two- or three-year term, with an optional three-year term to follow. NQF issues a transparent and public call for nominations from statisticians, epidemiologists, psychometricians, economists, performance measure methodologists, and experts in eMeasures as well as disparities in healthcare who also have relevant knowledge and/or proficiency in methodology, implementation of measures, and/or broad clinical expertise that would lend itself to the evaluation of complex measures. After a public comment period of the proposed SMP roster, NQF senior leadership approved the Panel slate.

The SMP conducts evaluations of scientific acceptability for selected, complex measures. Specifically, the SMP reviews the "must-pass" subcriteria of reliability and validity using NQF's standard measure evaluation criteria[42] for new and maintenance measures. The SMP provides a preliminary recommendation to NQF staff and the standing committees. NQF staff will continue to provide a preliminary analysis of all measures under review, including a methods review for noncomplex measures. The following measures are considered complex and may require an evaluation by the SMP:

- Outcome measures, including intermediate clinical outcomes
- Instrument-based measures (e.g., patient-reported outcome performance measures)
- Cost/resource use measures
- Efficiency measures (those combining concepts of resource use and quality)
- Composite measures

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In addition to evaluating submitted measures for scientific acceptability in NQF's measure endorsement process, the SMP will serve in an advisory capacity to NQF on methodologic issues related to measure testing, risk adjustment, and measurement approaches. As measures have become more complex, a myriad of issues have emerged related to measure testing, data sources, and assessment of reliability and validity. The Panel will help to ensure that NQF's testing requirements adjust to changes in measurement science.

Additional Changes

Expanding the measure evaluation commenting period for the public and NQF members to 15+ consecutive weeks. NQF will have one continuous public commenting period for measures under review. Reflecting NQF's commitment to transparency, this expanded commenting period replaces two separate commenting periods (a 14-day pre-meeting comment period and 30-day post-meeting comment period). Standing committees will review all submitted comments, and all submitted comments will receive a written response from the standing committee, measure developer or steward, or NQF staff, as appropriate.

Allowing only NQF members to signal support for measures under review. Process improvement event participants recommended that NQF members should no longer vote on measure endorsement decisions during a separate 15-day voting period to inform standing committees' recommendations. NQF members can now express their support (*'Support'* or *'Do Not Support'*) for measures during the 15+ week continuous public commenting period. This opportunity for NQF members to express support/nonsupport for measures is intended to promote and facilitate their engagement and feedback in the endorsement process.

Simplifying the structure and content of NQF measure evaluation reports. These changes are intended to minimize the length and density of technical reports on measure evaluations. Reports will be streamlined to include an executive summary that indicates the endorsement decision, brief summaries of each measure reviewed, details of committee deliberations on each measure against NQF measure evaluation criteria, and full measure specifications. In addition, NQF will create an annual cross-cutting report across all the topic areas that will summarize trends and performance, high-priority gap areas in measurement for future development, and measure concepts submitted during the solicitation process for measures.

Enhancing education and training for stakeholder participation and engagement. NQF will expand and strengthen the current range of educational resources offered to specific audiences, including committee members, developers, and staff. Feedback received from participants in NQF's process improvement activity mentioned the need for more accessible and tailored resources for stakeholders engaged at various points of the CDP. In response, NQF will develop more on-demand, virtual, education resources that provide technical and other assistance. These and other recommendations to enhance stakeholder education and training are being implemented through a phased process and timeline that began in the summer of 2017.

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Improving access to and exchange of measure information between the measure endorsement process and the Measure Applications Partnership (MAP). Process improvement event participants noted that there is significant overlap between NQF's two separate review processes (measure endorsement through the CDP and input on measure selection and use through MAP) and called for a centralized resource to access comprehensive and longitudinal information on measures. NQF is advancing initiatives to aggregate data from MAP reviews on measure selection and use as well as to consolidate existing information from endorsement review reports to make it easier for users to access measure information.

Future, additional and strategic changes may be implemented to the NQF CDP with direction from NQF's Consensus Standards Approval Committee (CSAC) and Board of Directors. For example, process improvement participants recommended changing how final endorsement decisions are made. Specifically, they recommended that standing committees, not NQF's Consensus Standards Approval Committee (CSAC),[43] make final endorsement decisions without ratification from the CSAC. Their rationale was that the CSAC rarely overturns standing committee measure endorsement recommendations. Additionally, process improvement participants recommended that the CSAC, and not the NQF Appeals Board, adjudicate appeals of decisions to endorse or not endorse measures. Given important strategic considerations, NQF will assess the newly designed CDP over time to determine whether these changes will enhance the process during future iterations.

Cross-Cutting Project to Improve the Measurement Process

In 2017, NQF's measurement science work continued to advance understanding of attribution and potential best practices in quality reporting and value-based payment models. Attribution is the methodology used to assign patients, and the quality or costs of their healthcare, to specific organizations or providers.

As healthcare payers and consumers increasingly seek greater value from healthcare services, determining which physicians or other providers are ultimately responsible for the quality and outcomes of the care patients receive is paramount. Attribution models are essential parts of policy and program design as well as measure development and implementation. Currently, a wide range of such models are in use across the nation, and, in some cases, limited information about the specifics of these models exists. The lack of standardization and specificity has prompted concerns from providers and other accountable entities that some models may inaccurately assign accountability for patients or outcomes.

In its role as the CBE, NQF continues its work to address these issues, which are fundamental to achieving a value-based healthcare system. In work that began September 2017, NQF has convened a multistakeholder advisory panel to build on the foundational guidance provided in NQF's 2016 report on attribution and its accompanying Attribution Model Selection Guide. The goal for the new work of the Improving Attribution Models Advisory Panel is to address notable attribution challenges, including the development and selection of attribution models to link health outcomes or costs to individual providers or teams of providers that include nonclinicians and care for patients with complex medical needs. The Panel also will share guidance on evaluating attribution models for health outcomes among specific patient populations, including pediatric patients or those with comorbidities. The Panel also will weigh in

on the role of attribution for NQF's measure endorsement and Measure Applications Partnership processes. A final report with the Panel's recommendations is expected in August 2018.

Social Risk Trial

Value-based purchasing and alternative payment models aim to reduce healthcare spending while improving quality by tying provider payments to performance on cost and quality measures (e.g., readmission rates, complication rates, or mortality rates). HHS has stated a goal to tie 90 percent of Medicare fee-for-service payments to performance on quality measures by the end of 2018.[44] CMS operationalizes this goal through federal accountability programs such as the Merit-Based Payment System, Hospital Readmissions Reduction Program, and Hospital Value-Based Purchasing Program.

Public- and private-sector payers also are increasingly using outcome measures as the performance metrics in value-based purchasing programs. However, healthcare outcomes are not solely the result of the quality of care received and can be influenced by factors outside a provider's control, such as a patient's comorbid conditions or severity of illness. Because patients are not randomly assigned to providers, performance measures should account for these underlying differences in patients' health risk to ensure performance measures make fair conclusions about provider quality. Risk adjustment (also known as case-mix adjustment) refers to statistical methods to control or account for patient-related factors when computing performance measure scores.

Risk adjusting outcome measures to account for differences in patient health status and clinical factors (e.g., comorbidities, severity of illness) that are present at the start of care is widely accepted. However, there is a growing evidence base that a person's social risk factors (i.e., socioeconomic and demographic factors) can also affect health outcomes.[45] Previous NQF policy did not allow for measure developers to include social risk factors in the risk-adjustment models of measures being submitted for NQF review and endorsement. This policy was developed because of concerns that including these factors in the risk-adjustment models of endorsed measures could mask disparities or create lower standards of care for people with social risk factors. However, the increased use of performance measures for public reporting and payment purposes underscores the need to ensure that these measures fairly and accurately assess quality. As a result, stakeholders and policymakers have called for the federal government to examine impact of social factors on the results of performance measures.

In August 2014, an NQF-convened Expert Panel recommended that NQF allow the inclusion of social risk factors in the risk-adjustment models of endorsed measures where there is both a conceptual basis (i.e., a logical theory or rationale) and empirical evidence that show social risk factors can influence the outcomes assessed in the measures. The Expert Panel also recommended that performance measures adjusted for social risk be stratified by social and demographic factors to identify disparities. However, concerns remained about the appropriateness and feasibility of allowing NQF-endorsed measures to be adjusted for social risk. To address these concerns, the NQF Board of Directors suspended NQF's policy prohibiting the inclusion of social risk factors in risk-adjustment models and instituted a two-year trial to assess how and when it is appropriate to adjust performance measures for social risk. NQF's Disparities Standing Committee provided oversight and guidance on the evaluation of the results of the trial.

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In April 2017, NQF concluded this self-funded two-year trial period during which measure developers were required to explore the impact of social risk factors on the results of their measures and could include social risk factors in the risk-adjustment models of measures submitted for endorsement review if there was a conceptual basis and empirical evidence to support doing so. NQF's work, as well as recent reports from the National Academies of Science, Engineering, and Medicine[46] and the Office of the Assistant Secretary for Planning and Evaluation,[47] adds to growing evidence that individuals' social risk factors affect their health and healthcare.

The trial period included all measures submitted for review from April 2015 through April 2017. During this two-year period, NQF reviewed 303 performance measures across 16 topical areas. Out of the 303 measures submitted for endorsement, 93 included some form of risk adjustment. The measure developers found—and the standing committees reviewing these measures agreed—that 65 of these 93 risk-adjusted measures had a conceptual basis for including social risk factors in the model. This relationship was demonstrated empirically for 21 out of these 65 measures. Ultimately, 17 out of these 21 measures were NQF-endorsed with a social risk factor included in their risk-adjustment model.

The trial period highlighted challenges to adjusting measures for social risk factors. First, the trial revealed challenges in obtaining data on social risk factors, including data granular enough to reflect individuals' social risk accurately. Next, the trial found that social risk factors had variable impacts on performance scores, reaffirming the Expert Panel's guidance that each measure must be assessed individually to determine if there is an empirical basis for social risk factor adjustment. In July 2017, NQF issued a report of its findings[48] from the trial, highlighting key conclusions and areas where further study may be needed.

Throughout the trial period, stakeholders expressed varying views on whether or not including social risk factors would worsen healthcare disparities. Some stakeholders reiterated concerns about masking disparities or creating different standards of care. However, others cautioned that using measures that are not adjusted for social risk factors for payment purposes disproportionately penalizes safety-net provides and could worsen disparities by threatening access to care.

To allow for monitoring of potential disparities in care, NQF requires the developers of measures that include social risk factors in their risk-adjustment models to also submit specifications to calculate a version of the measure that only includes clinical risk factors and which can be stratified by social risk. This would allow measure users to compare the measure when adjusted for social risk and when only adjusted for clinical risk to better understand the effects of adjustment for social risk.

In July 2017, the NQF Board of Directors approved a three-year extension of the policy allowing measure developers to include social risk factors in risk-adjustment models for outcome measures submitted for endorsement. NQF staff will review the risk-adjustment approach during the preliminary analysis of each measure. Additionally, NQF's Scientific Methods Panel[49] will review all outcome measures and provide guidance on the appropriateness of the risk-adjustment methods. NQF standing committees will continue to review the conceptual basis and the appropriateness of social and clinical risk factors included in each measure's risk-adjustment model.

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Current State of NQF Measure Portfolio: Responding to Evolving Needs

Working with multistakeholder committees,[50] NQF maintains its endorsed measure portfolio to keep it relevant. This maintenance may include removing endorsement for measures that no longer meet rigorous criteria, facilitating measure harmonization among competing or similar measures, or retiring measures that no longer provide significant opportunities for improvement. NQF encourages measure developers to submit measures that can drive more meaningful improvements in care, such as measures of patient-reported outcomes. While NQF pursues strategies to make its measure portfolio appropriately lean and responsive to real-time changes in evidence, it also proactively seeks measures from the field that will help to fill known measure gaps and that align with the NQS goals.

NQF worked on 18 quality measure endorsement projects in 2017. Across these HHS-funded endorsement projects, NQF endorsed 120 measures and removed 109 measures from its portfolio. NQF's measure portfolio contains high-value measures across a variety of clinical and cross-cutting topic areas. Forty-two percent of the measures in NQF's portfolio are outcomes measures. NQF's multistakeholder committees—which include providers, payers, and other experts from across healthcare, as well as patients and consumers—review both previously endorsed and new measures using rigorous evaluation criteria. The committees make recommendations for NQF to endorse or not endorse measures. In 2017, NQF's Board completed its service as the ratifying body for endorsement decisions of the CSAC. The CSAC now makes all final endorsement decisions.

Measure Endorsement and Maintenance Accomplishments

All measures are evaluated by subject matter and measurement expert committees against the following NQF criteria:

1. Importance to Measure and Report
2. Reliability and Validity – Scientific Acceptability of Measure Properties
3. Feasibility
4. Usability and Use
5. Comparison to Related or Competing Measures

More information is available in the *Measure Evaluation Criteria and Guidance for Evaluating Measures for Endorsement.*[51]

Appendix A lists the types of measures reviewed in 2017 and the results of the review. Below are summaries of endorsement and maintenance projects completed in 2017, as well as projects that began but were not completed during the year.

Completed Projects

All-Cause Admissions and Readmissions

High rates of readmissions are costly to the healthcare system and can indicate low-quality care during a hospital stay and poor-quality care coordination. Unnecessary hospitalizations can prolong the illness of patients, increase their time away from home and family, expose them to potential harms, and add to

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their costs. A 2013 Medicare Payment Advisory Commission (MedPAC) report suggests that reducing avoidable readmissions by 10 percent could achieve a savings of $1 billion or more.[52]

Successful efforts to drive down readmissions are being applied beyond inpatient hospital stays to post-acute care settings and across the entire continuum of care.[53,54] NQF currently has 47 endorsed all-cause and condition-specific admissions and readmissions measures addressing numerous settings. Many of these measures are used in various private and federal quality reporting and value-based purchasing programs, including CMS' Hospital Readmission Reduction Program (HRRP).

NQF undertook two projects to review admissions and readmissions measures in 2017. The first phase began in 2015. The Board of Directors finalized the endorsement decisions of measures in this first phase in December 2016. However, because NQF received appeals of the endorsement decision for some measures, the project did not conclude until April 2017. NQF considers an endorsement project complete after adjudication of any appeals received and issuance of the final report.

During the 2015-2017 phase of work, NQF's All-Cause Admissions and Readmissions Standing Committee evaluated 11 new measures and six measures undergoing maintenance review. Sixteen measures were endorsed, and one was not endorsed. Endorsed measures assessed issues such as hospitalization and emergency department use from home health settings and 30-day readmissions for various conditions. These measures were included in NQF's groundbreaking trial to determine whether NQF should permanently change its policy and allow measures to be adjusted for social risk factors. Ultimately, one measure, NQF #2858 *Discharge to Community*, was found to have both a conceptual basis and empirical evidence to adjust the measure for social risk. One social risk factor, marital status, was included in the risk-adjustment model of this measure. This project phase concluded in April 2017.

In the most recent 2017 phase of work, the Committee evaluated two additional measures. Both measures were endorsed. One of these measures, which assesses unplanned readmissions for cancer patients, was endorsed with one social risk factor in its risk-adjustment model (dual eligibility for Medicare and Medicaid). This project phase concluded in September 2017.

Behavioral Health

About 43.8 million people in the United States—nearly one in five—experience a mental illness in a given year.[55] In addition, 20.2 million U.S. adults had a substance use disorder, of which 50.5 percent had both a mental disorder and a substance use disorder.[56] In 2013, the United States spent $201 billion for mental healthcare, and that number is expected to continue rising.[57] Given the extent and impact of mental illness and substance use disorders, performance measurement in this area needs to remain operational and current.

This multiphase project endorsed measures for improving the delivery of behavioral health services, achieving better behavioral health outcomes, and improving the behavioral health of the U.S. population, especially those with mental illness and substance abuse. Prior phases of this project concluded with endorsement of 46 measures. NQF's behavioral health portfolio currently contains 54 measures.

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In the 2016-2017 project phase, NQF's Behavioral Health Standing Committee examined measures of tobacco use, alcohol and substance use, attention deficit hyperactivity disorder (ADHD), depression, medication continuation and reconciliation, and follow-up after hospitalization for mental illness. The Committee evaluated seven new measures and six measures undergoing maintenance review. Nine measures were endorsed, three were not endorsed, and one measure undergoing maintenance review was deferred for future, continued endorsement consideration. This project concluded in August 2017.

Cancer

Cancer is the second most common cause of death in the United States, exceeded only by heart disease.[58] The National Cancer Institute estimates that 595,690 people died from cancer in 2016.[59] Nearly half of all men and one-third of all women in the U.S. will develop cancer during their lifetime.[60] The National Cancer Institute estimated that in 2010 the costs for cancer care in the United States totaled nearly $157 billion and could reach $174 billion in 2020.[61]

The complexity of cancer and the many care settings and providers involved in its treatment underscore the need for quality measures that address the value and efficiency of care for patients and their families. NQF's portfolio of 34 cancer measures includes measures for breast cancer, colon cancer, hematology, lung and thoracic cancer, prostate cancer, and other general cancer measures. These measures address cancer screening, appropriate treatment (including surgery, chemotherapy, and radiation therapy), and morbidity and mortality.

NQF's Cancer Standing Committee evaluated three new measures and 15 measures undergoing maintenance review. Thirteen measures were endorsed, two measures received inactive endorsement with reserve status, and three measures were not endorsed. The purpose of inactive endorsement with reserve status is to retain endorsement of reliable and valid quality performance measures that have overall high levels of performance with little variability, so that performance may be monitored as necessary to ensure that it does not decline. This project concluded in January 2017.

Cardiovascular

Cardiovascular disease (CVD) is the leading cause of death in the United States. It kills nearly one in four Americans and costs $312 billion per year, more than 10 percent of annual health expenditures.[62] Considering the overall toll of cardiovascular disease, measures that assess clinical care performance and patient outcomes are paramount to reducing the negative impacts of CVD.

This multiphase project has built up a portfolio of 54 cardiovascular measures, covering primary prevention and screening, coronary artery disease (CAD), ischemic vascular disease (IVD), acute myocardial infarction (AMI), cardiac catheterization, percutaneous catheterization intervention (PCI), heart failure (HF), rhythm disorders, implantable cardioverter-defibrillators (ICDs), cardiac imaging, cardiac rehabilitation, and high blood pressure.

In the 2016-2017 project phase, NQF's Cardiovascular Standing Committee evaluated two new measures and four measures undergoing maintenance review. Four measures were endorsed, and two were not endorsed. One of the endorsed measures, NQF #0076 *Optimal Vascular Care*, included a social risk

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factor, status and type of insurance, in its risk adjustment model. This project concluded in February 2017.

Care Coordination

The coordination of care is essential to reduce preventable hospitalizations, achieve better patient outcomes, and lower costs in today's healthcare system. Reducing preventable hospitalizations is a significant factor in controlling healthcare costs.[63] In 2010, preventable hospital admissions accounted for nearly $32 billion in costs for adults with selected chronic and acute diseases.[64]

This multiphase project focused on healthcare coordination across episodes of care and care transitions. The NQF portfolio for care coordination includes 14 measures, covering emergency department transfers, plan of care, e-prescribing, timely transitions, medication management, and transition records.

In the 2016-2017 project phase, NQF's Care Coordination Standing Committee evaluated two new measures and five measures undergoing maintenance review. One measure was endorsed, and six were not endorsed. Endorsement was removed from four previously endorsed measures. This project concluded in August 2017.

Cost and Resource Use

In 2015, healthcare spending in the United States reached $3.2 trillion—a 5.8 percent increase over 2014 spending,[65] but the United States continues to rank below other developed countries for health outcomes, including lower life expectancy and greater prevalence of chronic diseases.[66] The United States is also falling behind other developed countries in the quality domains of effective care, safe care, coordinated care, and patient-centered care.[67] Improving efficiency has the potential to simultaneously reduce the rate of cost growth and improve the quality of care provided.

The NQF cost and resource use portfolio includes six measures. The 2016-2017 project was the latest phase of NQF's work on evaluating and endorsing cost and resource use measures, initially begun in 2010. The prior three phases of work focused on the evaluation of both condition-specific and noncondition-specific measures of total cost, using per capita or per hospitalization episode approaches.

In this fourth phase, NQF's Cost and Resource Use Standing Committee evaluated three existing noncondition-specific measures of cost and resource use. All three measures received continued endorsement. These measures were included in NQF's social risk trial; therefore, the measure developers were asked to evaluate the impact of social risk factors on the outcome of their measures. The developers of all three measures found a conceptual basis to potentially include social risk factors in the risk-adjustment models of their measures. However, when these factors were tested empirically, their inclusion did not significantly improve the performance of the risk-adjustment model and did not result in statistically significant changes in measure scores for nearly all providers. As a result, these measures were not endorsed with adjustment for social risk. This project concluded in August 2017.

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Eye Care and Ear, Nose, and Throat Conditions

More than 3.4 million (3 percent) of Americans 40 years of age or older are either blind or visually impaired, and millions more are at risk for developing vision impairment and blindness.[68] At a cost of $139 billion in 2013, eye disorders and vision loss are among the costliest health conditions currently facing the United States.[69] Hearing loss affects 1 in 10 Americans. In 2010, there were an estimated 20 million visits to otolaryngologists in America, and one-fifth of these visits were made by people under age 15.[70]

NQF's Eye Care, Ear, Nose, and Throat (EENT) Standing Committee identifies and endorses measures in areas related to glaucoma, macular degeneration, cataracts, hearing screening and evaluation, and ear infections. The NQF EENT measure portfolio includes 21 measures. In 2017, the Committee evaluated two new measures. One measure was endorsed, and the other was not endorsed. This project concluded September 2017.

Health and Well-Being

Medical care has a relatively small influence on overall health when compared with behaviors such as smoking and poor diet, physical environmental hazards, and social factors like low educational achievement and poverty.[71] Social, environmental, economic, and behavioral factors all play a significant role in maintaining and improving health and well-being. These and other determinants of health contribute to up to 60 percent of deaths in the United States,[72] yet less than 5 percent of health expenditures target prevention.[73]

The NQF health and well-being portfolio includes 47 measures, which cover areas such as health-related behaviors to promote healthy living; community-level indicators of health and disease; modifiable social, economic, and environmental determinants of health; primary prevention and/or screening; and oral health.

In 2017, NQF's Health and Well-Being Standing Committee evaluated 12 new measures and 11 measures undergoing maintenance review. The 2017 project was the third phase of NQF's work to review measures focused primarily on primary prevention and/or screening. Ultimately, 13 measures were endorsed, one measure received inactive endorsement with reserve status, and six measures were not endorsed. Three eMeasures assessing hepatitis C screening for at-risk patients, as well as appropriate follow-up, were approved for trial use. The trial use designation allows the eMeasures that are ready for implementation to undergo the reliability and validity testing necessary for full endorsement consideration by using clinical data in electronic health records (EHRs). Measures approved for trial use may be submitted for endorsement review within three years. NQF's health and well-being project concluded in April 2017.

Infectious Disease 2016-2017

Each year, the nation spends more than $120 billion to treat infectious diseases and $5 billion to treat antibiotic resistant bacteria.[74] Infectious diseases account for 3.9 million hospital visits per year and are a leading cause of death in the United States.[75] Septicemia is the most expensive condition treated in U.S. hospitals, costing $20.3 billion in 2011.[76]

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The NQF infectious disease portfolio includes nine measures. In its 2017 work, NQF's Infectious Disease Standing Committee evaluated measures that address infectious diseases, such as HIV/AIDS and sepsis, and made recommendations for measure endorsement. The project built on NQF's earlier work to set performance measurement standards for HIV/AIDS and other sexually transmitted infections, hepatitis, adult and pediatric respiratory infections, and sepsis.

The Committee evaluated four new measures and five measures undergoing maintenance review. All nine measures were endorsed. This project concluded in August 2017.

Musculoskeletal

Musculoskeletal disorders (MSDs) are a leading cause of disability in the United States, with increasing prevalence and cost associated with musculoskeletal diseases in an aging population.[77] In addition to the morbidity associated with musculoskeletal disorders, there has been a significant increase in costs to treat musculoskeletal disorders.[78] Low back pain is among the most common reasons for visits to physicians and a major reason for work-related disability. Because of the burden of these disorders, there is a critical need for nationally recognized musculoskeletal care measures.

The NQF musculoskeletal portfolio includes 29 measures. In its 2016-2017 work, NQF's Musculoskeletal Standing Committee evaluated two measures undergoing maintenance review. Neither measure was endorsed. This project concluded in July 2017.

Palliative and End-of-Life Care

Improving both access to, and quality of, palliative and end-of-life care is becoming increasingly important due to the aging of the U.S. population; the projected increases in the number of Americans with chronic illnesses, disabilities, and functional limitations; and the growth in ethnic and cultural diversity, which has intensified the need for individualized, person-centered care.[79]

The NQF palliative and end-of-life portfolio includes 59 measures. In 2017, NQF's Palliative and End-of-Life Standing Committee evaluated a new composite measure assessing whether hospices perform seven critical care processes upon admission of adult patients. Seven individual NQF-endorsed quality measures—which are currently implemented in the CMS Hospice Quality Reporting Program—will provide the source data for this comprehensive assessment measure. The measure was endorsed.

The Standing Committee in 2017 also made several refinements to NQF's measurement framework for palliative and end-of-life care. For example, the Standing Committee differentiated curative palliative care, which is provided alongside curative treatment, and chronic palliative care, which is provided to individuals with noncurable conditions who are not near the end of life. The Standing Committee also emphasized the need for measurement focused on the caregiver, among other recommendations. This project concluded in September 2017.

Patient Safety

Errors and adverse events associated with healthcare cause hundreds of thousands of preventable deaths each year in the United States.[80] Patient safety-related events occur across healthcare settings from hospitals to clinics to nursing homes and include healthcare-associated infections (HAIs),

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medication errors, falls, and other potentially avoidable occurrences. The societal costs are tremendous. These costs include higher use of hospital and other services, higher insurance premiums, higher taxes, lost work time and wages, and reduced quality of life.

NQF-endorsed patient safety measures are important tools for tracking and improving patient safety performance in U.S. healthcare. NQF's patient safety portfolio includes 73 measures, including measures of medication safety, healthcare-associated infection, falls, pressure ulcers, and other safety concerns. These measures are used in many quality improvement, public reporting, and accountability programs across the country. Federal programs using measures from NQF's patient safety portfolio include CMS' Physician Quality Reporting System (PQRS), and the Hospital Inpatient Quality Reporting (IQR) Program, Hospital Value-Based Purchasing (VBP) Program, and the Hospital-Acquired Condition Reduction Program (HACRP).

In a project that concluded in March 2017, NQF's Patient Safety Standing Committee evaluated 13 new measures and two measures undergoing maintenance review. Eleven measures were endorsed and two measures were not endorsed. The endorsement decision for one measure undergoing maintenance review was deferred. In addition, one eMeasure to assess the quality of blood samples in the emergency department was approved for trial use. The endorsed measures include three measures to address the prescription of opioids at high doses or from multiple providers, with appropriate exclusions, including cancer patients. These are the first NQF-endorsed measures intended to address the nation's devastating—and growing—opioid epidemic.

In a separate project that concluded in July 2017, the Committee evaluated the deferred measure from its March 2017 work, as well as six new measures. The deferred measure, which is part of the Healthcare Effectiveness Data and Information Set (HEDIS) and assesses whether or not older adults were dispensed a high-risk medication, was endorsed. The Committee evaluated the six new measures, which were intended to assess potentially avoidable complications for patients with certain conditions. The measure developer withdrew the measures from further consideration before NQF made a final endorsement decision.

Pediatric

Approximately 74 million children under 18 years of age live in the United States, representing 23.3 percent of the population.[81] The number of children and adolescents diagnosed with chronic medical conditions has risen consistently over the last decades.[82] Although the number of NQF-endorsed pediatric measures to evaluate and improve care of children and adolescents is growing, expanding the availability of evidence-based pediatric measures for public and private use is a priority.

The Children's Health Insurance Reauthorization Act of 2009 (CHIPRA) accelerated interest in pediatric quality measurement and provided an unprecedented opportunity to improve the healthcare quality and outcomes of the nation's children, especially the nearly 36 million children enrolled in Medicaid and/or CHIP.[83] CHIPRA mandates that CMS develop and update a core set of performance measures for voluntary use by states to assess the quality of care provided to children enrolled in Medicaid and CHIP—the Child Core Set—and requires annual recommended updates to the set.

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NQF's pediatrics portfolio includes 102 measures, of which 39 are specific to the pediatric population and 63 include both the pediatric and adult populations. Many of the measures in the pediatric portfolio are in use in at least one federal program. Seventeen NQF-endorsed measures were included in the 2017 Core Set of Children's Health Care Quality Measures for Medicaid and CHIP (Child Core Set).[84]

For this project, which concluded in August 2017, NQF's Pediatric Standing Committee evaluated 11 new measures. Four measures were endorsed, including a new facility-level outcome measure of preventable adverse events among pediatric inpatients, as well as an outcome measure to examine public insurance participation rates and measure continuity of enrollment among vulnerable children. Seven measures were not endorsed.

Person- and Family-Centered Care

Ensuring that patients and their families are engaged partners in care is one of the core priorities of the NQS and is a focus of significant healthcare efforts. NQF's person- and family-centered care (PFCC) portfolio has 62 measures, most of which are outcome measures. The portfolio includes measures focused on quality of life, functional status, experience of care, shared decision making, symptom/symptom burden, and communication.

In the phase of PFCC work that concluded in January 2017, NQF's PFCC Standing Committee evaluated 12 new measures and one measure undergoing maintenance review. All 13 measures were endorsed, including patient-reported outcome (PRO) performance measures.

Renal

Renal disease is a leading cause of death and morbidity in the United States. Millions of Americans have chronic kidney disease (CKD), and over half a million Americans have received a diagnosis of end-stage renal disease (ESRD), the only chronic disease covered by Medicare for people under the age of 65.[85]

NQF's renal portfolio currently contains 21 measures. For this project, which began in 2015 and concluded in February 2017, NQF's Renal Standing Committee evaluated three new measures and three measures undergoing maintenance review. Five measures were endorsed, including measures to assess hemodialysis patients. One measure was not endorsed. Of the five endorsed measures, one was endorsed with adjustment for social risk.

Surgery

The rate of surgical procedures continues to increase annually, and ambulatory surgery centers are the fastest growing provider type participating in Medicare.[86] Performance measurement and reporting provide an opportunity to further improve the safety and quality of surgical care.

NQF's surgery measure portfolio is one of its largest, with 62 measures. It addresses cardiac, vascular, orthopedic, urologic, and gynecologic surgeries, and includes measures for adult and child surgeries as well as surgeries for congenital anomalies. The portfolio also includes measures of perioperative safety, care coordination, and a range of other clinical or procedural subtopics. Many of the measures in the portfolio are used in public- and/or private-sector accountability and quality improvement programs. However, while significant strides have been made in some areas, measure gaps remain for some types

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of procedures and additional, effective measures are needed to evaluate and improve overall surgical quality, shared accountability, and patient-centered care.

During the 2015-2017 phase of work, NQF's Surgery Standing Committee evaluated 10 new measures, including five new eMeasures, and 13 measures undergoing maintenance review. Fifteen measures were endorsed, three were not endorsed, and the five eMeasures were not approved for trial use.

New Projects in 2017

In September 2017, NQF began work to review measures in 14 topic areas. This work will be completed under NQF's new, compressed endorsement process which now allows for two measure review cycles annually. Measure developers may submit measures for endorsement review for the cycle initiated in September 2017 or in the next cycle scheduled for April 2018. Reflecting another improvement from NQF's 2017 Consensus Development Process redesign, scientific review of complex measures in these topic areas will be conducted by the Scientific Methods Panel, and NQF staff will review will review noncomplex measures. This input will be shared with the standing committees in their consideration of measures for endorsement. Furthermore, all standing committees will apply the NQF measure prioritization criteria in their new work.

All-Cause Admissions and Readmissions

Despite the healthcare industry's focus in recent years on reducing preventable readmissions, challenges persist, especially for patients who suffer from chronic and comorbid conditions. Measuring critical factors that affect the quality of patient care can provide valuable information to help providers better address patients' health needs after hospitalization and keep them from unnecessarily returning to the hospital.

Reducing avoidable readmissions is a national priority. NQF will review measures related to admissions and readmissions, both all-cause and those specific to certain conditions, such as heart failure. No measures were submitted for this project for the September 2017 cycle. Measures are expected for the April 2018 cycle.

Behavioral Health and Substance Use

Behavioral health encompasses a range of treatments and services for individuals who are at risk or suffering from mental, behavioral, and/or addictive disorders. These may include substance abuse, post-traumatic stress disorder, and anxiety, or depression. Behavioral health disorders are a leading cause of disability, and treatment continues to be a source of rising healthcare costs in the United States.[87]

NQF will review measures that can help achieve better behavioral health and healthcare, with a focus on attention deficit/hyperactivity disorder (ADHD), depression, and substance abuse screening, primary care, and treatment. Better measures of the quality of behavioral healthcare services can help ensure that people receive timely, coordinated, and effective care that ultimately leads to better outcomes and improved overall health. Five measures were submitted for this project for the September 2017 cycle.

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Cancer

Cancer takes the lives of more than 1,600 Americans each day.[88] More and more people are also surviving cancer: nearly 14.5 million Americans with a history of cancer were alive in 2014, and it is estimated that the number of cancer survivors in the United States will increase to almost 19 million by 2024.[89] In addition, according to the Agency for Healthcare and Research Quality (AHRQ), the cost of cancer care in the United States has more than doubled in the 10 years from 2001 to 2011. Quality measures are needed to ensure effectiveness, value, and efficiency of cancer care for patients and their families.

NQF will review measures to assess the quality of care for breast, colon, prostate, esophageal, lung, and other cancers. Since cancer care is complex and provided in multiple settings by multiple providers, high-quality measures that capture the complexity of this care as well care coordination are essential. NQF seeks to endorse measures focused on cancer screening and treatment. Five measures were submitted for this project for the September 2017 cycle.

Cardiovascular

More than 800,000 Americans die every year from heart disease and many people living with heart disease are seriously ill and disabled.[90] Heart disease is also a tremendous financial burden, accounting for approximately $300 billion in annual U.S. healthcare expenditures.[91] By improving measurement of heart disease treatment, interventions, and outcomes, NQF aims to improve the quality of care and health outcomes for the millions of Americans affected by heart disease.

NQF will review measures for heart conditions such as hypertension, coronary artery disease, acute myocardial infarction, percutaneous coronary intervention, heart failure, and atrial fibrillation. Measures may assess outcomes, treatments, diagnostic studies, interventions, or procedures associated with these conditions. Six measures were submitted for this project for the September 2017 cycle.

Cost and Efficiency

Healthcare spending in the United States is unmatched by any country in the world, without a corresponding increase in better outcomes or overall value.[92] According to CMS, national healthcare expenditures rose 5.8 percent to $3.2 trillion in 2015, or $9,990 per person.[93] Additionally, estimates suggest that as much as 30 percent of all healthcare spending is wasted on unnecessary or ineffective services.[94] Improving efficiency within the healthcare system holds the potential both to reduce the rate of cost growth and improve the quality of care provided.

To help understand how and where healthcare dollars are spent, NQF will review measures focused on the cost of care, payment, and efficiency for all conditions. Measures may, for example, evaluate total care costs for individual patients, as well as look at specific treatment costs for any condition. No measures were submitted for this project for the September 2017 cycle. Measures are expected for the April 2018 cycle.

Geriatrics and Palliative Care

Improving both access to, and the quality of, geriatric and palliative care in all healthcare settings is becoming increasingly important. About 48 million Americans are age 65 and older, and that number is

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projected to grow to over 88 million by 2050.[95] Increasingly, older Americans are living with multiple chronic conditions that can lead to gradual and prolonged functional decline. Palliative care has been shown to improve quality of life, enhance information and communication, lower costs of care, and even help some patients live longer. However, the quality and accessibility of palliative care are highly variable in hospital and outpatient settings, and many patients who receive end-of-life palliative care through hospice enroll too late to benefit fully from this care. Consensus on endorsed measures that capture the important structures, processes, and outcomes of palliative and geriatric care will help to improve these services across care settings.

NQF will reconvene its Palliative and End-of-Life Care Standing Committee as the Geriatrics and Palliative Care Committee to review measures focused on experience with care, care planning, management of pain or difficulty breathing, care preferences, and quality of care at the end of life. No measures were submitted for this project for the September 2017 cycle. Measures are expected for the April 2018 cycle.

Neurology
Neurological conditions can be severe, affecting the normal function of both the spinal cord and the brain by impeding muscle function, lung function, swallowing, and even breathing. With more than 600 neurologic diseases, neurological conditions are a leading cause of death in the United States and a major contributor to healthcare costs. According to the U.S. Centers for Disease Control and Prevention, 1 in 26 people will develop epilepsy during their life. In addition, nearly 800,000 Americans suffer a stroke each year, making stroke the fifth leading cause of death in the nation.[96] The Alzheimer's Association estimates that more than 5 million Americans are living with Alzheimer's disease. The estimated cost of care for people with dementia was $230 billion in 2016.[97]

To help guide improved treatment and care for millions of Americans with neurological disorders, NQF will review measures in key areas, including stroke, epilepsy, multiple sclerosis, dementia and Alzheimer's disease, Parkinson's disease, and traumatic brain injury. No measures were submitted for this project for the September 2017 cycle. Measures are expected for the April 2018 cycle.

Patient Experience and Function
High-quality performance measures are essential to provide information and insight on how providers are responding to the needs and preferences of patients and families. Measures that address how healthcare organizations can create effective care practices that support positive patient experiences and improved function are vital to improving the quality of care.

NQF's patient experience and function work encompasses quality measures previously designated to NQF's Person- and Family-Centered Care and Care Coordination Standing Committees. In this consolidated area of work, NQF will review measures that assess health-related quality of life, patient and family engagement in care, functional status, symptoms and symptom burden, experience with care, and care coordination. Eight measures were submitted for this project for the September 2017 cycle.

Patient Safety

Despite significant achievements in measuring and addressing patient harms, tens of thousands of preventable injuries to patients still occur each year, and many of these harms have dire consequences. For example, an estimated 5 to 10 percent of hospitalized patients acquire healthcare-associated infections each year, resulting in 99,000 deaths and $20 billion annually in healthcare costs.[98]

In this new work, NQF will review measures focused on pressure ulcers, healthcare-acquired conditions, sepsis, medication management, and mortality rates. One measure was submitted for this project for the September 2017 cycle.

Perinatal and Women's Health

The United States spends more on perinatal healthcare than any other health sector ($111 billion in 2010),[99] but ranks last in maternal outcomes among all industrialized nations.[100] With nearly 4 million U.S. births in 2015,[101] and great disparities in care and outcomes among different racial and ethnic groups, reproductive and perinatal healthcare is a major concern for women, mothers, babies, and the providers who care for them, and accordingly, is important for quality measurement.[102]

NQF will reconvene the multistakeholder Perinatal and Reproductive Health Standing Committee as the Perinatal and Women's Health Standing Committee to review measures focused on reproductive health, pregnancy, prenatal care, labor and delivery, post-partum care for newborns, and childbirth-related issues for women. One measure was submitted for this project for the September 2017 cycle.

Prevention and Population Health

The United States ranks lower than many other developed nations on health outcomes, yet spends more on healthcare than any other nation,[103] and continues to struggle with significant disparities in health and healthcare. In addition, social risk factors contribute to up to 60 percent of deaths in the United States. However, most U.S. healthcare dollars are spent on treatment rather than social and other services that can help prevent disease.[104] Improving population health requires a commitment to sustained prevention efforts, including adopting healthy behaviors, increased screening for disease, reducing harmful environmental exposures, and mitigating the effects of social risk factors (e.g., economic, geographic, and race/ethnicity) on health.

Performance measures can help to monitor the success of population health improvement initiatives and help focus future health improvement efforts on proven, effective strategies. NQF will reconvene the Health and Well-Being Standing Committee as the Prevention and Population Health Standing Committee to review measures focused on smoking, diet, disease incidence and prevalence, prevention and screening, practices to promote healthy living, community interventions, and modifiable social, economic, and environmental determinants of health with a demonstrable relationship to prevention and population health. Eight measures were submitted for this project for the September 2017 cycle.

Primary Care and Chronic Illness

Primary care has a central role in improving the health of people and populations. Primary care practitioners manage the uniqueness and complexities of each patient. In this setting, the diagnosis and treatment of the patient focus on the health of the entire patient and not a single disease. Chronic

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illnesses are long-lasting or persistent health conditions or diseases that patients and providers must manage on an ongoing basis. The incidence, impact, and cost of chronic disease is increasing in the United States. It is essential to better understand the scope of two of the most common and most expensive chronic diseases confronting the nation: diabetes, which affects at least 29 million Americans,[105] and asthma, which affects 25 million Americans.[106]

High-quality performance measurement that captures the complexity of primary care and chronic illnesses is essential to improve diagnosis, treatment, and management of conditions. NQF will review measures in these important healthcare areas under a consolidated measure portfolio that reflects the importance of caring for chronic illness in primary care settings. Measures may focus on nonsurgical eye or ear, nose, and throat conditions, diabetes care, osteoporosis, HIV, rheumatoid arthritis, gout, back pain, asthma, chronic obstructive pulmonary disease (COPD), and acute bronchitis. No measures were submitted for this project for the September 2017 cycle. Measures are expected for the April 2018 cycle.

Renal

Renal disease is widespread in the United States. An estimated 30 million American adults (15 percent of the population) have chronic kidney disease (CKD), which is associated with premature mortality, decreased quality of life, and increased healthcare costs. Left untreated, CKD can result in ESRD, which afflicts over half a million people in the United States.[107] Measures can help ensure that people with renal disease receive high-quality care.

NQF will review measures that address conditions, treatments, interventions, or procedures relating to ESRD, CKD, and other renal conditions, for accountability and quality improvement. No measures were submitted for this project for the September 2017 cycle. Measures are expected for the April 2018 cycle.

Surgery

In 2010, 51.4 million inpatient procedures and 53.3 million surgical and nonsurgical procedures were performed in ambulatory surgery centers.[108] Ambulatory surgery centers are the fastest growing provider type participating in Medicare.[109] In 2012, 28 percent of hospital stays (excluding maternal and neonatal stays) involved operating room procedures and accounted for nearly half of total hospital costs.[110] Consumers are increasingly turning to public reports of quality measures to make decisions about surgical care, looking specifically at the likelihood of surgical success, i.e., the surgery achieving its intended outcome and avoiding complications. Despite advances in improving surgical care and given the increasing rates of surgical procedures and associated costs, gaps persist in performance measurement and reporting that impair efforts to improve the safety and quality of surgical care.

While significant strides have been made to make surgery safer and improve outcomes, patient-centered measures that assess shared accountability and overall surgical quality are still needed. In this new work, NQF will review measures that assess pre- and post-surgical care, timing of prophylactic antibiotics, and adverse surgical outcomes. Seven measures were submitted for this project for the September 2017 cycle.

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IV. Stakeholder Recommendations on Quality and Efficiency Measures

Section 1890(b)(5)(A)(vi) of the Social Security Act requires the CBE to include in this report a description of matters related to multistakeholder group input on the selection of quality and efficiency measures from among: (I) measures that have been endorsed by the entity; and (II) such measures that have not been considered for endorsement by such entity but are used or proposed to be used by the Secretary for the collection or reporting of quality and efficiency measures.

Measure Applications Partnership

Under section 1890A of the Act, HHS is required to establish a pre-rulemaking process under which a consensus-based entity (currently NQF) would convene multistakeholder groups to provide input to the Secretary on the selection of quality and efficiency measures for use in certain federal programs. The list of quality and efficiency measures HHS is considering for selection is to be publicly published no later than December 1 of each year. No later than February 1 of each year, the consensus-based entity is to report the input of the multistakeholder groups, which will be considered by HHS in the selection of quality and efficiency measures.[111]

First convened in 2011, NQF's MAP recommends performance measures for use in federal healthcare quality programs. The MAP pre-rulemaking process enables a unique multistakeholder dialogue about priorities for measurement in these programs. It provides private- and public-sector stakeholders across the care continuum—including patients, clinicians, providers, purchasers, and payers—with the opportunity to identify and recommend the highest-value measures for each program as well as to provide strategic guidance across programs. Throughout its six years of annual review, MAP has worked toward the goal of lowering costs while improving quality, making measurement meaningful for improvement while reducing unnecessary administrative burden, and ensuring that patients and consumers get the information they need to support their healthcare decision making.

MAP convenes the Rural Health Workgroup and three setting-specific workgroups (Hospital, Clinician, and Post-Acute/Long-Term Care), as well as the Coordinating Committee, an overarching body that provides strategic direction and synchronization among the workgroups. More than 150 healthcare leaders from 90 organizations who regularly use measures and measurement information serve on MAP and participate in its discussions. The annual list of measures under consideration (MUC) for use in federal programs and MAP's deliberations on these measures are transparent and open for public comment. Each MAP workgroup considers public comment in its review of measures. For detailed information regarding MAP representatives, criteria for selection to MAP, and rosters, please see Appendix E and Appendix G.

MAP's efforts help to facilitate the alignment or use of the same measures across multiple federal programs. Alignment of measures helps providers better identify key areas in which to improve quality; reduces burdensome data collection that could distract hospitals, physicians, and nurses from their care delivery work; and helps to curb the proliferation of redundant measures, which could confuse patients and payers. MAP strives to offer recommendations that apply to and are coordinated across settings of care; federal, state, and private programs; levels of attribution and measurement analysis; and payer types. Although MAP provides recommendations to HHS, many are also adopted by the private sector.

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New in 2017, MAP's Rural Health Workgroup will provide guidance on measures specific to the needs and challenges of rural providers and residents.

2017 Pre-Rulemaking Input

MAP completed its deliberations for the 2016-2017 pre-rulemaking cycle with the publication of its annual reports in February and March 2017, marking MAP's sixth review of measures for HHS programs. MAP reviewed 71 unique performance measures under consideration for use in 16 federal quality reporting and value-based payment programs (see Appendix F) covering clinician, hospital, and post-acute/long-term care settings.

The MAP Measure Selection Criteria guides the review process for the measures under consideration (see Appendix E). Over the course of the review process, MAP promotes alignment of measures across HHS programs and with private-sector efforts. MAP also incorporates measure use and performance information into its decision making to provide HHS with specific recommendations about the best use of available measures as well as filling measure gaps.

Guidance on Measures Currently in Use

Currently, there are a total of 634 measures used in programs that MAP reviews. In its 2017 guidance, MAP conducted a holistic review of the current measure sets used in federal programs and recommended significant improvements to reduce measure burden.

Other Process Improvements

In addition to providing guidance on measures currently in use in federal programs, MAP also made process improvements to address the challenge of reviewing measures early in their lifecycle. MAP is committed to the scientific integrity of the measures used in accountability programs but historically has had limited information about the reliability and validity of the measures under consideration. Some of the measures under consideration in a given year may not yet have been reviewed for NQF endorsement, and some measures under consideration may still be in development or testing.

MAP now reviews all measures using the same decision categories, with the addition of a new category in 2016-2017, Refine and Resubmit Prior to Rulemaking. The other categories include Support for Rulemaking, Conditional Support for Rulemaking, and Do Not Support for Rulemaking. MAP added the Refine and Resubmit category after it determined that all measures under consideration should be reviewed using the same process and that measures still in development would not be reviewed separately. MAP created this decision category to preserve its ability to support the concept of a measure under consideration and encourage its continued development, while noting that significant changes may be needed prior to its implementation. The Refine and Resubmit category differs from the Conditional Support for Rulemaking category by signaling that a larger change is needed to the measure under consideration or that the measure under consideration has not completed development and testing. A measure may receive this designation if MAP determines it is not an efficient use of measurement resources, it may not be feasible to report, it may not be reliable and valid for the setting and level of analysis for which it is being considered, or if implementation issues have been identified. The intent of this category was that measures receiving this designation would be brought back to MAP

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prior to implementation. However, the HHS Secretary has statutory authority to propose measures after considering MAP's recommendations.

In 2017, MAP also completed improvements to integrate the MAP and NQF measure endorsement processes to provide MAP members and the public better information about the endorsement status of measures under consideration. For example, if a measure under consideration has undergone measure endorsement review, MAP members received the results of that review in the preliminary analysis and the discussion guide about the measure. MAP recommendations are also provided to the relevant NQF standing committee if and when a measure under consideration for use in federal programs is reviewed for endorsement.

MAP members have expressed a desire to understand more about what happens to a measure under consideration after MAP's review, particularly when MAP recommends potential improvements to the measure or the measure has not yet completed testing. Through the addition of the Refine and Resubmit Prior to Rulemaking category, MAP has established a pathway to receive feedback from CMS and measure developers on how its recommendations have been addressed.

NQF piloted a feedback loop process in the 2016-2017 pre-rulemaking cycle for CMS to provide the PAC/LTC Workgroup with updates on the development and endorsement of selected measures included on previous lists of measures under consideration. This review was not intended to allow for a change in MAP's recommendations about a measure; rather, it provided an opportunity for MAP members to better understand whether or how their suggested refinements and conditions of support have been met. The feedback loop process was well received by the PAC/LTC Workgroup. MAP members appreciated the opportunity to better understand how CMS implemented their input on measures under consideration. CMS also noted the value of the feedback loop to build relationships and better inform stakeholders. NQF plans to implement the feedback loop process across MAP for the 2017-2018 pre-rulemaking cycle.

MAP Clinician Workgroup
In its 2016-2017 cycle, MAP reviewed clinician-level measures under consideration for the following programs:

- Merit-Based Incentive Payment System (MIPS). MIPS is one of two tracks in the Quality Payment Program (QPP).
- Medicare Shared Savings Program. The Shared Savings Program is designed to create incentives for healthcare providers to work together voluntarily to coordinate care and improve quality for their patient population.

MIPS was established by section 101(c)of MACRA.[112] MIPS consolidates aspects of three existing Medicare quality reporting and value-based purchasing programs for clinicians. MIPS applies positive and negative payment adjustments for MIPS eligible clinicians (ECs) based on performance in four categories:

- Quality: replaces the Physician Quality Reporting System (PQRS) program and Value-Based Payment Modifier (VM) programs

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- Cost: replaces the VM program
- Advancing Care Information: replaces the Electronic Health Records Incentive Program for eligible professionals
- Improvement Activities: new performance category

MAP reviewed 18 measures for the MIPS. MAP supported two measures and conditionally supported seven measures, including three patient-reported outcome-based performance measures pending the completion of measure testing that supports variation in performance at the individual clinician level and the receipt of NQF endorsement. MAP recommended that eight measures under consideration be refined and resubmitted prior to rulemaking. The Committee noted that the measures addressed promising concepts for measurement (e.g., in population health and appropriate use) but stressed the need for further testing to be completed prior to implementation in the MIPS. MAP suggested refinements to one measure of smoking prevalence that was under consideration for both the MIPS and the Shared Savings Program, raising concerns about performance goals and attribution, as a clinician would be held accountable for the county-level smoking rate.

MAP recognized that MIPS includes a large number of measures across a wide range of specialties and the majority of measures may not be applicable to all or most specialties. Therefore, a larger number of measures is needed to ensure all eligible clinicians can participate. MAP also noted that the design of the program, where clinicians choose which measures to report, can influence whether or not there is still an opportunity to improve performance on a measure, as some measures are reported by a smaller number of clinicians. These factors make it challenging to streamline the MIPS measure set.

Measures for MIPS on the 2016 MUC list were under consideration for potential implementation in 2018 affecting the payment year 2020 measure set and future years.

The Medicare Shared Savings Program was established by Section 3022 of the Affordable Care Act (ACA).[113] Eligible providers and suppliers may participate in the Shared Savings Program by creating or participating in an Accountable Care Organization (ACO). ACOs that meet the program requirements and quality performance standards are eligible to share in savings. There are three participation options: (1) one-sided risk model (sharing of savings only for all three years, (2) two-sided risk model (sharing of savings and losses for all three years) with preliminary prospective assignment with retrospective reconciliation, and (3) two-sided risk model (sharing of savings and losses for all three years) with prospective assignment.

MAP also considered the local smoking prevalence measure that was under consideration for MIPS for the Shared Savings Program. MAP agreed with the importance of reducing smoking rates but recommended the measure be refined and resubmitted, noting concerns about fairly comparing ACOs as smoking rates can vary significantly in different areas of the country. MAP recommended ensuring that the measure is properly risk adjusted and suggested measuring the change in rates rather than comparing rates across the country, noting concerns about risk adjustment and variation in smoking prevalence in different geographic regions.

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An overarching theme of MAP's pre-rulemaking recommendations for measures in the MIPS and the Shared Savings Program is that high-value measures are needed in both programs. MAP emphasized moving beyond the process measures that make up the majority of the current measures. MAP has identified the following measure types as high-value:

- Outcome measures (e.g., mortality, adverse events, functional status, patient safety, complications, or intermediate outcomes)
- Patient-reported outcomes where the patients provide the data about the results of their treatment, level of function, and health status
- Measures addressing patient experience, care coordination, population health, quality of life, or impact on equity
- Appropriateness, overuse, efficiency, and cost-of-care measures
- Composite measures
- Process measures with a strong evidence-based link to patient outcomes

However, MAP members recognized the associated complexities of developing, testing, and properly attributing outcome measures at the clinician level. MAP members requested that CMS and specialty societies work together to create a suite of high-impact measures that are actionable by the individual clinician and demonstrate the ability to improve quality.

MAP Hospital Workgroup

The MAP Hospital Workgroup reviewed measures under consideration for seven hospital and setting-specific programs, making the following recommendations.

End-Stage Renal Disease Quality Incentive Program. The End-Stage Renal Disease Quality Incentive Program (ESRD QIP) is a value-based purchasing program that links a portion of an end-stage renal facility's payment under the ESRD PPS to its performance on quality measures. This program was established to promote the provision of high-quality renal dialysis services by dialysis facilities.

MAP reviewed three measures under consideration for the ERSD QIP program, supporting two and recommending that one be refined and resubmitted prior to rulemaking.

PPS-Exempt Cancer Hospital Quality Reporting Program. The Prospective Payment System (PPS)-Exempt Cancer Hospital Quality Reporting (PCHQR) program is a quality reporting program for PPS-exempt cancer hospitals.[114] The program's goal is to provide information to the public about the quality of care that is furnished in the 11 cancer hospitals that are exempt from payment under the Medicare Inpatient Prospective Payment System (IPPS).

MAP reviewed five measures under consideration for the PCHQR program, recommending four and not supporting one.

Ambulatory Surgery Center Quality Reporting Program. The Ambulatory Surgical Center Quality Reporting (ASCQR) program is a pay-for-reporting program.[115] Ambulatory Surgical Centers (ASCs) that fail to meet program requirements receive a 2 percent reduction to their annual payment increase. The ASC program was established to provide information about the quality of care provided at ASCs.

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MAP reviewed three measures under consideration for the ASCQR program, conditionally supporting three and recommending that two be refined and resubmitted prior to rulemaking.

Inpatient Psychiatric Facility Quality Reporting Program. The Inpatient Psychiatric Facility Quality Reporting (IPFQR) Program[116] is a pay-for-reporting program that requires inpatient psychiatric facilities (IPFs) to meet program requirements, including submitting data on measures, to avoid receiving a 2 percent reduction in their annual update to a standard federal rate for discharges for the IPF occurring during a particular year. The IPFQR program provides information about the quality of care in inpatient psychiatric facilities.

MAP reviewed three measures under consideration for the IPFQR program, recommending that all three be refined and resubmitted prior to rulemaking.

Hospital Outpatient Quality Reporting Program. The Hospital Outpatient Quality Reporting (OQR) Program (OQR) is a pay-for-reporting program.[117] Subsection (d) hospitals that fail to meet program requirements receive a 2.0 percentage point reduction to their OPD fee schedule increase factor. This program established a system for collecting and providing quality data about hospital outpatient services.

MAP reviewed three measures under consideration for the Hospital OQR Program, supporting one, conditionally supporting another, and recommending that one be refined and resubmitted prior to rulemaking.

Hospital Readmissions Reduction Program. The Hospital Readmissions Reduction Program (HRRP) is similar to the hospital value-based purchasing program[118]; it aims to reduce readmissions to Medicare subsection (d) hospitals, defined as a general, acute case, short-term hospitals. Psychiatric hospitals, rehabilitation hospitals, long-term care hospitals, children's hospitals, cancer hospitals, and critical access hospitals are exempt from the program. Diagnosis-related group (DRG) payment rates are reduced based on a hospital's ratio of actual to expected readmissions.

There were no measures under consideration for the HRRP in the 2016-2017 pre-rulemaking deliberations. However, MAP reviewed the current set of six measures and raised concerns that safety-net hospitals may be disproportionately penalized by the HRRP, as the measures are not currently risk adjusted for social risk factors. MAP recommended that CMS consider the recommendations of the Assistant Secretary for Planning and Evaluation (ASPE) in the *Report to Congress: Social Risk Factors and Performance Under Medicare's Value-Based Purchasing Programs*[119] to mitigate the impact of the HRRP on safety net hospitals.

Hospital Inpatient Quality Reporting Program/Medicare and Medicaid EHR Incentive Program for Eligible Hospitals and Critical Access Hospitals (Meaningful Use). The Hospital Inpatient Quality Reporting (IQR) Program is a pay-for-reporting program that addresses the quality of care furnished by hospitals and requires subsection (d) hospitals to meet program requirements or be subject to a one-quarter reduction to their applicable percentage increase.

MAP reviewed 15 measures under consideration for the Hospital IQR Program and/or EHR Incentive Programs, conditionally supporting one, suggesting refinements to nine, and not supporting five.

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When reviewing the current measure set for Hospital IQR Program, MAP highlighted the need for alignment across hospital programs. In particular, MAP members noted the 21st Century Cures Act provisions that require consideration of the proportion of dually eligible patients served by facilities participating in the HRRP. MAP recommended that CMS explore ways to align the readmissions measures used both for the Hospital IQR Program and HRRP to ensure consistency in the information provided to both hospitals and consumers. In addition, MAP suggested that CMS consider ASPE's recommendations in its report on social risk factors in value-based purchasing programs, as some measures used in the IQR program also are used in the Hospital Value-Based Purchasing Program (VBP) and the HRRP.

Hospital Value-Based Purchasing Program. The Hospital VBP program is a value-based purchasing program[120] designed to improve the quality of hospital inpatient services by linking a portion of a hospital's Medicare payment under the IPPS to its performance on quality measures. Hospitals are eligible to receive incentive payments based either on how well they perform compared with other hospitals or how much their performance has improved over time.

MAP reviewed one measure under consideration for the Hospital VBP Program and did not support it. MAP also reviewed the 21 current measures in the program and suggested opportunities for improvement. First, MAP recommended that CMS review ASPE's recommendations and consider ways to mitigate the effect of the Hospital VBP Program on safety-net hospitals, as social risk may influence the efficiency and mortality measures currently included in the program. Secondly, MAP raised concerns about the reliability, actionability, and usability of the PSI-90 measure used in the program and urged CMS to develop new patient safety measures, such as measures addressing all-cause harm. Finally, MAP noted concerns about the potential overlap among the efficiency measures used in the program. For example, MAP noted that the Medicare Spending per Beneficiary Measure would include episodes captured in the risk-standardized payment associated with the 30 day-episode of care measures for acute myocardial infarction and heart failure and that including both measures would lead to a hospital being rewarded or penalized twice for the same patient case.

Hospital-Acquired Condition Reduction Program. The Hospital-Acquired Condition Reduction Program (HACRP) is a value-based purchasing program; it penalizes hospitals for occurrences of hospital-acquired conditions (HACs).[121] Hospitals with the highest rates of HACs will have their Medicare payments reduced by 1 percent. Hospitals are currently scored on measures in two domains: PSI-90 and National Healthcare Safety Network measures. The domain scores are used to calculate the Total HAC Score. Hospitals above the 75th percentile for their Total HAC Score are subject to the payment reduction. There were no measures under consideration for the HACRP in the 2016-2017 pre-rulemaking deliberations. However, MAP reviewed the measures currently used in the program and recommended that HHS develop new safety measures to replace PSI-90 in the HACRP as MAP had concerns about the actionability and reliability of this measure.

The MAP Hospital Workgroup identified the need for high-value measures across programs. Such measures would address key areas where measure development is needed, including measures to evaluate the appropriate use of health interventions and testing; measures of care transitions, which are pivotal to improving healthcare quality, especially after hospitalization; and measures of patient-

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reported outcomes. MAP also emphasized the need for measures that will drive improvement and foster more consistent performance among providers. MAP looked to the potential use of eMeasures to reduce collection and administrative burden on providers, noting that decisions to select a measure should weigh the burden to report on the measure against its potential to improve care quality.

MAP PAC/LTC Workgroup

The Measure Applications Partnership (MAP) reviewed measures under consideration for five setting-specific federal programs addressing post-acute care (PAC) and long-term care (LTC). MAP provided feedback on the current measure sets for these programs and identified several overarching themes, including: (1) implementation of the Improving Medicare Post-Acute Care Transformation (IMPACT) Act and (2) continued opportunities to address quality. MAP also discussed the current measure set of a sixth program for which no new measures were submitted.

Inpatient Rehabilitation Facility Quality Reporting Program. The Inpatient Rehabilitation Facility Quality Reporting Program (IRF QRP) is a pay-for-reporting program that addresses the quality of care furnished by IRFs to Medicare beneficiaries.[122] This program applies to IRFs that are paid by Medicare under the IRF prospective payment system (PPS), including freestanding IRFs and inpatient rehabilitation units of hospitals or critical care access hospitals (CAHs).

MAP reviewed three measures under consideration for the IRF QRP, conditionally supporting one and recommending two others to be refined and resubmitted prior to rulemaking. MAP also reviewed the measures currently in the program and noted the need for measures that address issues such as patient and family engagement, and nutrition.

Long-Term Care Hospital Quality Reporting Program. The Long-Term Care Hospital Quality Reporting Program (LTCH QRP) is a pay-for-reporting program[123] that addresses the quality of care furnished by LTCHs to Medicare beneficiaries. This program applies to all hospitals certified by Medicare as LTCHs.

MAP reviewed three measures under consideration for the LTCH QRP, conditionally supporting one and recommending that two others be refined and resubmitted prior to rulemaking. MAP also reviewed the measures currently used in the program, noting that LTCH measurement could be improved, for example, by replacing measures of specific infections with a measure of all facility-acquired infections. MAP also identified gaps in the measure set, including the need for measures addressing the transfer of information between attending clinicians, and not just between settings. MAP also recommended adding an LTCH-specific Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey to assess patient experience with care.

Skilled Nursing Facility Quality Reporting Program. The Skilled Nursing Facility Quality Reporting Program (SNF QRP) is a pay-for-reporting program[124] that addresses the quality of care furnished by SNFs to Medicare beneficiaries. This program applies to freestanding SNFs, SNFs affiliated with acute care facilities, and all non-SNF swing-bed rural hospitals. Beginning with fiscal year 2018, SNFs that do not submit data as required under the SNF QRP for a fiscal year will receive a 2 percentage reduction to their annual market basket percentage that would otherwise apply for that fiscal year.

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MAP reviewed three measures under consideration for the SNF QRP, conditionally supporting one and recommending that the two others be refined and resubmitted prior to rulemaking. MAP reviewed the measures currently in the program and suggested that the measure set could be improved by taking a person-centered focus to measurement that addresses advance directives and additional aspects of care coordination, such as the efficacy of transfers from acute care hospitals to skilled nursing facilities, the transfer of information between facilities and attending clinicians, and the patient's experience.

Skilled Nursing Facility Value-Based Purchasing Program (SNF VBP). The Skilled Nursing Facility Value-Based Purchasing Program (SNF VBP) is a value-based purchasing program[125] that links Medicare payments to SNFs under the SNF PPS to their performance on a measure of all-cause all-condition hospital readmission rates.

MAP identified opportunities to clarify measure specifications for the program to ensure alignment with program goals.

Home Health Quality Reporting Program. The Home Health Quality Reporting Program (HH QRP)[126] is a pay-for-reporting program established in accordance with section 1895(b)(3)(B)(v)(II) of the Social Security Act, and it aims to improve the quality of care provided to home health patients. Home health agencies (HHAs) that do not comply with the program's incentive structure are subject to a 2 percent reduction in their annual home health market basket percentage increase applicable to the HHA for such year. These data are made publicly available through the Home Health Compare website to provide national ratings on the quality of HHAs.

MAP reviewed five measures under consideration for the HH QRP, conditionally supporting three and recommending that the two others be refined and resubmitted prior to rulemaking. In reviewing the measures currently in the program, MAP affirmed the need for a streamlined measure set to reduce the burden on providers while ensuring that consumers and other stakeholders have the information they need to support their decision making.

Hospice Quality Reporting Program. The Hospice Quality Reporting Program (HQRP) is a pay-for-reporting program[127] established by Section 3004 of the Affordable Care Act. The HQRP applies to all hospices, regardless of setting. Failure to submit quality data will result in a 2 percent reduction to a hospice's annual payment update.

MAP reviewed eight measures under consideration for the HQRP and supported all of them. MAP reviewed the measures currently in the program, noting several measurement gaps to be addressed in future rulemaking cycles. These gaps include measures of medication management at the end of life, the provision of bereavement services, patient care preferences, and measures that address symptom management for other conditions besides cancer, particularly dementia. MAP also noted the need to include outcome measures in the Hospice QRP set. Finally, MAP emphasized the importance of publicly reporting measure results to help guide patient decision making.

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V.   Gaps on Endorsed Quality and Efficiency Measures Across HHS Programs

Under section 1890(b)(5)(A)(iv) of the Act, the entity is required to describe in the annual report gaps in endorsed quality and efficiency measures, including measures within priority areas identified by HHS under the agency's National Quality Strategy, and where quality and efficiency measures are unavailable or inadequate to identify or address such gaps.

NQF is committed to measurement that drives meaningful improvement in the healthcare system. In addition to endorsing high-value measures and recommending measures for use in federal programs, NQF standing committees, its Measure Applications Partnership, and Medicaid workgroups also identify measure gaps—areas in healthcare where high-value measures are too few or nonexistent—to drive improvement.

During their 2017 deliberations, NQF standing committees that reviewed measures for endorsement or conducted other activities related to improving NQF's measure portfolios discussed and identified more than 100 measurement gaps. NQF's self-funded initial measure prioritization efforts surfaced important measurement gaps in palliative and end-of-life care. Standing committees also identified a large number of measure gaps in behavioral health, pediatric, and patient safety topical areas. These gaps are included in Appendix H.

The Measure Applications Partnership provided feedback on measure gaps across and within federal programs, guided by CMS input in the Program Specific Measure Priorities and Needs document on high-priority domains.[128] Medicare measure gaps identified by MAP are included in Appendix I. In addition, NQF's Medicaid Task Forces and Dual Eligible Beneficiaries Workgroup also identified gaps in the Adult and Child Core Sets and the Dual Eligible Beneficiaries Family of Measures. These gaps are included in Appendix J.

VI.   Gaps in Evidence and Targeted Research Needs

Under section 1890(b)(5)(A)(v) of the Act, the entity is required to describe areas in which evidence is insufficient to support endorsement of quality and efficiency measures in priority areas identified by the Secretary under the National Quality Strategy and where targeted research may address such gaps.

Several NQF projects completed in 2017, as well as one that is underway, create needed strategic approaches, or frameworks, to measure quality in areas critical to improving health and healthcare for the nation but for which quality measures are too few, are under developed, or non-existent.

A measurement framework is a conceptual model for organizing ideas that are important to measure for a topic area and for describing how measurement should take place (i.e., whose performance should be measured, care settings where measurement is needed, when measurement should occur, or which individuals should be included in measurement). Frameworks provide a structure for organizing currently available measures, areas where gaps exist, and prioritization for future measure development.

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NQF's foundational frameworks identify and address measurement gaps in important healthcare areas, underpin future efforts to improve quality through metrics, and ensure safer, patient-centered, cost-effective care that reflects current science and evidence.

NQF completed projects to create strategic measurement frameworks for assessing the quality of telehealth, diagnostic quality and accuracy, and transitions of care into and out of emergency departments. NQF also developed a measurement structure for assessing progress toward interoperability, an important area for advancing care that continues to present significant challenges to healthcare organizations. In other work, NQF continued its efforts to support structured reporting of patient safety events in hospitals and other care settings. NQF also began a new project to identify measure concepts that can improve the quality and safety of care in ambulatory care settings.

Telehealth

Telehealth offers the potential to transform the healthcare delivery system by providing technological methods of care delivery that overcome geographical distance, enhance access to care, and create greater efficiencies in the delivery of care. Services provided through telehealth are expected to increase due to new reimbursement strategies for Medicare providers who offer these services as part of MACRA.

The Health Resources and Services Administration (HRSA) defines telehealth as "the use of electronic information and telecommunications technologies to support and promote clinical healthcare, patient and professional health-related education, public health, and health administration."[129] Although it does not represent all existing definitions for this important area of health IT across both the private and public sectors,[130] there is general consensus that telehealth supports a range of clinical activities, including:

- Enhancing interactions among providers to improve patient care (for example, consultation with distant specialists by the direct care provider);
- Supporting provider-to-provider training;
- Enhancing service capacity and quality (for example, small rural hospital emergency departments and pharmacy services);
- Enabling direct patient-provider interaction (such as follow-up for diabetes or hypertension, or urgent care services);
- Managing patients with multiple chronic conditions from a distance; and
- Monitoring patient health and activities (for example, home monitoring equipment linked to a distant provider).[131]

These activities are especially useful in communities where access to appropriate healthcare services is limited. Compared to residents of urban communities, residents of rural and frontier communities are more likely to be older and to have more risk factors associated with their health conditions. The supply of healthcare professionals to treat certain conditions, such as mental and behavioral health disorders and chronic disease, can be scarce in many of these areas, and existing providers may have limited training in specialized areas of care. To address these challenges, some rural hospitals and other healthcare settings have adopted telehealth, including video communication between providers and the

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sharing of information, such as radiological and imaging reports.[132] Similar strategies have been adopted in urban and suburban settings, especially for specialties with significant workforce shortages and/or maldistribution (e.g., dermatology and psychiatry), or where long delays to schedule new patient appointments may occur.

In a one-year project that concluded in August 2017, NQF's Telehealth Committee was charged with developing a measurement framework that identifies critical areas where measurement can effectively assess the quality and impact of telehealth services and serves as a conceptual foundation for new measures, where needed. The Committee recommended measuring the quality of telehealth in four broad categories: patients' access to care, financial impact to patients and their care team, patient and clinician experience, and effectiveness of clinical and operational systems. Within these categories, NQF identified six key areas as having the highest priority for measurement in telehealth, including travel, timeliness of care, actionable information, added value of telehealth to provide evidence-based practices, patient empowerment, and care coordination.

The Committee identified 16 NQF-endorsed measures that can be used initially to measure telehealth quality. These measures span a variety of conditions, ranging from mental and behavioral health to care coordination. The Committee noted that existing quality measures must be widely accepted and impactful to evaluate the effectiveness and benefits of telehealth. While a number of measures were identified through this work, the Committee acknowledged it is difficult to ascertain which would suffice to assess whether telehealth is comparable to, or an improvement over, in-person care. The report and conceptual framework for measuring telehealth serve as the foundation for future efforts by measure developers, researchers, analysts, and others in the healthcare community to advance quality measurement for telehealth.

Interoperability

Interoperability is the electronic sharing of health information and how that information is used. True interoperability is a significant challenge to healthcare organizations for various reasons, including the lack of a common, standard framework that reconciles the differences in data as well as the varying data types. Additionally, healthcare organizations maintain incompatible products and systems, which are unable to exchange the appropriate data within the organization and with partners in its community.

In 2017, NQF concluded a foundational, one-year project to develop a measurement structure and ideas for measures to address current measurement gaps in interoperability. As a first step in developing this framework, NQF conducted an environmental scan of references and research that provided insight into the use of data to facilitate interoperability and the different methods of exchanging information, including papers that focus on the use, effectiveness, or outcomes of health information exchange (HIE). Key findings from the scan included:

- Interoperability facilitates the exchange of data across numerous systems to support areas such as public health, care coordination, patient engagement, and innovation
- The availability of data with electronic health records (EHRs) and other systems, such as clinical data registries, help support interoperability

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- Facilitating greater interoperability supports decision making by providers and patients by integrating data from various sources to present a unified view to facilitate data exchange as well as establishing common formats for care coordination, quality reporting, and collaborative care
- Interoperability has a significant impact on the accuracy of quality measurement in areas such as cancer research, chronic disease management, and heart failure, as well as quality reporting by using common data models and application programming interfaces.

NQF supplemented the findings of the environmental scan with key informant interviews with candidates from payer organizations, health information exchanges, integrated delivery systems, health information exchange vendors, EHR/HIE vendors, informatics, and patient advocacy groups. These interviews helped identify examples of the current realities of interoperability and exchange of data across disparate systems; availability of data to facilitate interoperability; use of interoperability to facilitate decision making; and the impact of interoperability on health/health-related outcomes and processes.

NQF convened the multistakeholder Interoperability Committee to provide input and help guide the creation of a framework. The committee developed a set of guiding principles to define key criteria for measuring interoperability, including:

Interoperability is more than EHR to EHR. That is, the focus of interoperability within a measurement structure must extend beyond the concept of data exchange between two EHRs into one that encompasses the diversity of data sources that capture patient and population data.

Stakeholder involvement. A broadly accessible, interoperable system that incorporates data from various sources would potentially enable diverse stakeholders to participate actively in using this data. However, the impact of interoperable data affects various stakeholders in different ways, including patients, providers, payers, and government.

Use of "outside data." The Committee clarifies that its concept of interoperability does not focus on the ability of systems to gather outside data, but instead on the ability of systems to obtain and exchange data accurately, effectively, efficiently, and in a usable form.

Differences due to setting and maturity. The use of interoperable data may also vary depending on the setting (e.g., clinical, nonclinical) and its individualized needs, so measure concepts should be selected to fit the setting. For example, measure concepts selected for nonclinical providers and settings that are working to exchange health information electronically with community-based settings such as social services might focus on the interoperability of social and environmental determinants of health data.

Various data types. Specifically, it will be critical for interoperability measures and measure concepts to account for data that come from nonclinical sources that reside in multiple systems and in some cases cannot yet be exchanged into an EHR or other clinical information system without compromising their content and meaning.

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Based on the findings of the environmental scan, the key informant interviews, and its guiding principles, the Committee ultimately proposed measuring key interoperability elements in four broad categories (domains) and 15 subcategories (subdomains). These include:

1. Exchange of electronic health information
   - Availability of electronic health information
   - Quality of data content
   - Method of exchange
2. Usability of exchanged electronic health information
   - Relevance
   - Accessibility
   - Comprehensibility
3. Application of exchanged electronic health information
   - Human use
   - Computable
4. Impact of interoperability
   - Patient safety costs
   - Productivity
   - Care coordination
   - Improved processes and health outcomes
   - Patient and caregiver engagement
   - Patient and caregiver experience

NQF's interoperability project lays the groundwork for addressing the current gaps in the measurement of interoperability, and is an important step in accomplishing national priorities for interoperability, access, and use of health data.

Emergency Department Transitions of Care

Nearly 1 in 12 patients return to the emergency department (ED) or are hospitalized within three days of an initial ED visit, and a third of those "revisits" occur at a different institution, according to a recent study of 58 million patients discharged from EDs in six states. The study found that the revisit rate grew from 2.7 percent within one day of discharge to 8.2 percent within three days of discharge and to 20 percent within 30 days of discharge.[133]

Unclear, incomplete, or missing information during ED transitions in care between providers and settings may lead to patient anxiety and uncertainty, avoidable resource use, or a worsening in the patient's condition and potential harm. In addition, variability in communication during transitions from one care setting to another may contribute to confusion among clinicians about the patient's severity of condition and near-term care needs, duplicative tests, inconsistent patient monitoring, medication errors, delays in diagnosis, and lack of follow through on referrals.[134]

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Currently, few measures address the quality of transitions of care into and out of an emergency department (ED). However, ED visits often represent a critical juncture for a patient, and management of these transitions is important to improve person-centered care, value, and cost efficiency.

To address the measurement gap, in 2016, NQF convened the multistakeholder Emergency Department Quality of Transitions of Care Expert Panel to develop a measurement framework to prioritize measures and measure concepts, as well as a set of guiding recommendations to help providers better manage transitions of care. In a final report issued in August 2017, NQF recommended four domains, or broad conceptual areas, and 11 subdomains, for measuring the quality of ED transitions. The four domains include:

- **Provider information exchange**. Communication and transfer of information between providers that occurs during transitions of care into and out of the ED
- **Patient, family, and caregiver information exchange**. Interactive and bidirectional communication between patients (and their families, caregivers, or health proxies) and a multidisciplinary, healthcare team (e.g., case manager, nurse, primary care physician)
- **Engagement of the broader community**. The extent to which the broader community's organizations, services, and information technology infrastructures are available and engaged to support a quality transition of care into and out of the ED.
- **Achievement of outcomes**. The extent to which quality, patient-centered ED transition of care outcomes occur across patient episodes of acute care and within systems of care.

The Panel identified a set of priority measures and concepts that improve transitions for both patients and providers, promote structures and processes to link clinical and nonclinical settings more effectively, and measure outcomes to help monitor the development and implementation of systems to optimize transitions.

The Panel also developed recommendations to promote policy change in support of measure recommendations. For example, they suggest that EDs should expand infrastructure to support patient-centered ED transitions, such as by investing in ED-based care managers and social workers. Other recommendations include enhancing health IT to enable data sharing, facilitating improvement through payment models and other levers, and encouraging research to understand better patients who are at highest risk for poor ED transition quality as well as poor outcomes related to these transitions.

Improving Diagnostic Quality and Safety

Diagnostic errors are the failure to establish or communicate an accurate and timely assessment of the patient's health problem.[135] In the United States, at least 5 percent of adults seeking outpatient care experience a diagnostic error.[136] These errors contribute to nearly 10 percent of deaths annually, and up to 17 percent of adverse hospital events.[137] Diagnostic errors persist across all healthcare settings and can result in physical, psychological, or financial repercussions for the patient.

To assist in reducing diagnostic harm, NQF in 2016 convened a multistakeholder expert Committee to develop a structure for measuring diagnostic quality and safety and identify priorities for future measure development. With guidance from the Committee, NQF staff conducted an environmental scan to

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identify measures related to diagnostic quality and safety and to inform the development of the measurement framework. In a final report issued in September 2017, NQF recommends three domains and 11 subdomains for the measurement of diagnostic quality and safety. These include:

- Patients, families, and caregivers: patient experience and patient engagement

- The diagnostic process: information gathering and documentation, information integration, information interpretation, diagnostic efficiency, diagnostic accuracy, and follow-up

- Organizational and policy opportunities: diagnostic quality improvement activities, access to care and diagnostic services, workforce (e.g., the availability of appropriate staff)

The framework is intended to facilitate systematic identification and prioritization of measure gaps and to help guide efforts to fill those gaps through measure development and endorsement.

The Committee identified high-priority areas where measures are needed, including timeliness of diagnosis, timeliness of test result follow-up, patient experience of diagnostic care, and communication and hand-offs in transitions of care.

The report shares nonmeasurement guidance from the Committee on issues that affect the ability of the field to make improvements in diagnostic quality. For example, diagnostic accuracy can be advanced significantly if EHRs are able to collect key diagnostic data and are interoperable within and across systems. The Committee suggested engaging with medical specialty societies for input on measures for conditions that are frequently misdiagnosed. The Committee also suggested that diagnostic safety and quality become an important component of professional education.

Common Formats for Patient Safety

In 2008, AHRQ first released Common Formats to support structured reporting of safety events in hospitals. These reporting techniques standardize the collection of patient safety event information using common language, definitions, and reporting formats. Use of common data fields for event reporting ensures that information shared with Patient Safety Organizations (PSOs) is consistent across healthcare providers and can be aggregated to provide population-level insights into trends in adverse events.

The public has an opportunity to comment on all elements of the Common Formats modules using commenting tools developed and maintained by NQF. An NQF Expert Panel reviews the public comments and provides AHRQ feedback with the goal of improving the Common Formats modules.

In 2017, NQF continued to collect comments on all elements of the Common Formats, including the most recent release, Hospital Common Formats Version 2.0. The NQF Expert Panel received updates from AHRQ about ongoing development of new Common Formats, and AHRQ has signaled that it expects to release an updated version of the Common Formats for Hospital Surveillance in early 2018. NQF will post this new module for comments, which will then be reviewed by the Expert Panel for feedback to AHRQ.

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Ambulatory Care Patient Safety

According to the Centers for Disease Control and Prevention, more than 83 percent of U.S. adults use ambulatory care services annually through visits to primary care physicians, urgent care centers, dialysis centers, and other outpatient providers. Although there has been tremendous research on patient safety in inpatient settings, much less is known about effectively addressing safety issues in ambulatory care. The 1999 Institute of Medicine publication, *To Err is Human*, raised awareness of the critical importance of improving patient safety across the healthcare continuum and spurred a national call to measure the quality of care across settings. With the increasing number of individuals seeking outpatient care, it has never been more important to ensure patient safety in ambulatory care settings.

Building on NQF's body of work to improve quality and safety, including earlier work to set measurement standards for ambulatory care,[138] NQF has convened an advisory group to identify measures and measure concepts for ambulatory care patient safety. This one-year project, funded by the Agency for Healthcare Research and Quality (AHRQ), will inform the development of priority measures to improve patient safety across ambulatory care settings for nonelderly patients (under age 65), and will help make care safer and more effective for millions of Americans. A report is expected in September 2018.

VII. Coordination with Measurement Initiatives by Other Payers

Section1890(b)(5)(A)(i) of the Social Security Act mandates that the Annual Report to Congress and the Secretary include a description of the implementation of quality and efficiency measurement initiatives under this Act and the coordination of such initiatives with quality and efficiency initiatives implemented by other payers.

Quality Measurement Support for the Medicaid Innovation Accelerator Program

Adding to NQF's efforts to improve healthcare for adults and children enrolled in Medicaid, NQF in September 2017 issued its first measure recommendations specifically for four high-cost, high-need areas of care for the Medicaid population. These recommendations aim to support federal efforts to help states tie payments—which totaled $553 billion in 2016—to improved value.

State Medicaid programs have faced numerous challenges in finding and using standardized measures to evaluate quality within states and in comparing care delivered across states. The decentralized nature of state quality programs has led to a proliferation of measures across states, contributing to a lack of alignment and increased reporting burden for providers. Benchmarking also can be difficult, as similar measures used in states may have different specifications.

The Medicaid Innovation Accelerator Program (IAP) supports states' ongoing efforts related to payment and delivery reforms through targeted technical assistance to state Medicaid agencies across four overlapping and interrelated areas of focus: reducing substance use disorders, improving care for beneficiaries with complex needs and high costs, promoting community integration through long-term services and supports, and supporting physical and mental health integration. In addition, the program works with states around key delivery system reform efforts in four functional areas: quality

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measurement, performance improvement, data analytics, and payment modeling and financial simulations.[139]

In 2016, under contract with CMS, NQF convened the multistakeholder Innovation Accelerator Project Coordinating Committee and four Technical Expert Panels to identify and recommend measures that address key quality issues in each of the IAP's four areas of focus. In a final report issued in September 2017, the Committee made the following measure recommendations to:

- **Reduce substance abuse disorders**. 24 measures and five measure concepts, such as screening and brief intervention, medication-assisted treatment, and continuity of care
- **Improve care for beneficiaries with complex care needs and high costs**. 18 measures and one measure concept, such as care utilization, follow-up care, and medication reconciliation
- **Promote community integration through long-term services and supports**. 10 measures and four measure concepts, such as quality of services, access to care, and medication reconciliation
- **Support physical and mental health integration**. 30 measures and one measure concept, such as coordination of treatment among providers, screening for physical and mental health conditions, and care follow-up

The recommended measures and measure concepts are available for use by all state Medicaid agencies and stakeholders to begin leveraging them for better, more efficient care regardless of participation in the IAP.

Core Quality Measures Collaborative – Private and Public Alignment

Adding to NQF's efforts to encourage the use of more meaningful measures and reduce measure burden on providers, NQF has provided technical assistance to the Core Quality Measures Collaborative (CQMC) for several years. This initiative—led by the America's Health Insurance Plans (AHIP) and its member plans' chief medical officers, and also involving CMS—brought together private- and public-sector payers to reach consensus on core performance measures.[140] Representatives from national physician organizations, employers, and consumer groups also participated in this effort. NQF self-funded its participation in the CQMC.

The alignment of measure sets across payers will aid in:

- Promotion of measurement that is evidence-based and can generate valuable information for quality improvement;
- Consumer decision making;
- Value-based purchasing;
- Reduction in the variability in measure selection; and
- Decreasing providers' collection burden and costs.

Focusing initially on clinician-level measures used in the ambulatory care settings, the Collaborative in 2016 issued seven core measure sets in the following areas:

- ACOs, PCMH, and primary care
- Cardiology

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- Gastroenterology
- HIV and hepatitis C
- Medical oncology
- Obstetrics and gynecology
- Orthopedics

CMS is already using measures from each of these core sets.[141] In July 2017, the Collaborative published an additional pediatrics core measure set consisting of nine measures intended for use at the provider level for individual clinicians or group practices.[142,143] Seven of the nine measures in the CQMC pediatric set are also included in the Medicaid and CHIP Child Core Set,[144] for which NQF makes annual recommendations. Although the CQMC pediatric set is intended for measurement at the healthcare provider and group practice levels, measure alignment may help facilitate state-level Child Core Set reporting and quality improvement initiatives, according to CMS.[145]

VIII. Conclusion

NQF's work to improve health and healthcare is closely aligned with the national priorities of making care safer, strengthening person and family engagement, promoting effective communication, promoting effective prevention and treatment of chronic disease, working with communities to promote best practices of healthy living, and making care affordable in partnership with public and private healthcare stakeholders across the country.

In 2017, NQF completed or began work in key areas of importance to these national priorities. This work includes projects to improve measurement of care quality in rural settings, reduce healthcare disparities, address social determinants of health, and improve ways that the quality and outcomes of a patient's care are accurately and fairly attributed to the responsible physician or other provider. Additional projects provided national guidance on measurement structures to assess the quality of telehealth, further progress toward interoperability, improve transitions of care from emergency departments, and advance the quality and safety of clinical diagnoses.

Working with multistakeholder committees to build consensus on key strategies for performance measurement and quality improvement, NQF's annual review and endorsement of healthcare performance measures ultimately provides clinicians, hospitals, and other providers with the tools they need to understand whether the care they provide their patients is optimal, and appropriate, and if not, where to focus improvement efforts. NQF-endorsed measures serve to enhance healthcare value by ensuring that consistent, high-quality performance data are available, which allows for comparisons across providers as well as the ability to benchmark performance.

NQF's measure portfolio contains high-value measures across a variety of clinical and cross-cutting topic areas. Forty-two percent of the measures in NQF's portfolio are outcomes measures. With continued focus on high-value measures, NQF initiated efforts to prioritize meaningful measures and further refined its measure portfolio, endorsing 120 new measures and removing endorsement for 109 measures across 18 quality measure endorsement projects in 2017.

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NQF's commitment to make measure endorsement more efficient, foster innovation, and enable greater access to NQF's technical assistance was manifested in the significant improvements made in 2017 to its measure review and endorsement process. Importantly, these efforts will reduce the measure endorsement process to seven months, allow for two measure review cycles every year, and enhance transparency through an expanded 15+ week opportunity for public comment for each endorsement project. NQF also established a Scientific Methods Panel to provide methodological analyses of complex measures.

NQF's Measure Applications Partnership (MAP) is a forum for the private and public sectors across the care continuum where patients, clinicians, providers, purchasers, payers, and other stakeholders identify and recommend the highest-value measures for federal program and provide strategic guidance across these programs. Throughout its six years of annual review, MAP has worked toward the goal of lowering costs while improving quality, making measurement meaningful for improvement while reducing unnecessary administrative burden, and ensuring that patients and consumers get the information they need to support their healthcare decision making. Importantly, in 2017, MAP constituted a new workgroup to address the specific needs and challenges of rural providers and residents. MAP's 2017 work included a review of 71 unique performance measures under consideration for use in 16 federal quality reporting and value-based payment programs covering clinician, hospital, and post-acute/long-term care settings. In its 2017 guidance, MAP conducted a holistic review of the current measure sets used in federal programs and recommended significant improvements to reduce measure burden.

During their 2017 deliberations, NQF standing committees that reviewed measures for endorsement or conducted other activities related to improving NQF's measure portfolios discussed and identified more than 100 measure gaps—areas in healthcare where high-value measures are too few or nonexistent—to drive improvement. NQF's standing committees surfaced important measurement gaps in areas such as palliative and end-of-life care, behavioral health, pediatric care, and patient safety. MAP also identified measure gaps to assess care and improvement in federal healthcare programs, and NQF's Medicaid Task Forces and Workgroup noted gaps in the core measure sets that states use to assess care for adults and children on Medicaid.

In 2018, NQF looks forward to continuing work that drives increased use of high-value quality measurement across settings of care, improves the usability and implementation of eMeasures, and furthers a portfolio of effective and impactful measures that public and private payers, providers, and patients can rely upon to improve health and healthcare value.

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Appendix A: 2017 Activities Performed Under Contract with HHS

1. Recommendations on the National Quality Strategy and Priorities

Description	Output	Status	Notes/Scheduled or Actual Completion Date
Eliminating healthcare disparities and achieving health equity	Roadmap for reducing health and healthcare disparities through policy levers	Completed	Final report published September 2017
Food Insecurity and Housing Instability A framework for Medicaid programs to address social determinants of health	Guidance for state Medicaid programs to make strategic investments in the collection and use of social determinants of health data	Completed	Final report completed December 2017
Annual review and update of quality measures for adults enrolled in Medicaid	Annual input on the Core Set of Health Care Quality Measures for Adults Enrolled in Medicaid	Completed	Completed August 2017
Annual review and update of quality measures for children enrolled in Medicaid	Annual input on the Core Set of Health Care Quality Measures for Children enrolled in Medicaid.	Completed	Completed August 2017
Annual review and update of quality measures for the dual-eligible (Medicare-Medicaid) population	Annual input on the Dual Eligible Beneficiaries Family of Measures.	Completed	Completed August 2017

2. Quality and Efficiency Measurement Initiatives
Completed in 2017

Description	Output	Status	Notes/Scheduled or Actual Completion Date
All-Cause Admissions and Readmissions 2015-2017	Set of endorsed measures for all-cause admissions and readmissions	2015-2017 completed	Final report published April 2017
All Cause Admissions and Readmissions 2017	Set of endorsed measures for all-cause admissions and readmissions	2017 completed	Final report published September 2017
Behavioral Health 2016-2017	Set of endorsed measures for behavioral health	2016-2017 completed	Final report published August 2017
Cancer 2015-2017	Set of endorsed measures for cancer care	2015-2017 completed	Final report published January 2017
Cardiovascular Conditions 2016-2017	Set of endorsed measures for cardiovascular conditions	2016-2017 completed	Final report published February 2017
Care Coordination Measures 2016-2017	Set of endorsed measures for care coordination	2016-2017 completed	Final report published August 2017
Cost and Resource Use 2016-2017	Set of endorsed measures for cost and resource use	2016-2017 completed	Final report published August 2017
Eye Care and Ear, Nose, and Throat Conditions Off-Cycle Measure Review 2017	Endorsed measure for ear condition	2017 completed	Final report published September 2017
Health and Well-Being 2015-2017	Set of endorsed measures for health and well-being	2015-2017 completed	Final report published April 2017
Infectious Disease 2016-2017	Set of endorsed measures for infectious disease	2016-2017 completed	Final report published August 2017

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Description	Output	Status	Notes/Scheduled or Actual Completion Date
Musculoskeletal Off-Cycle Measure Review 2017	No measures for musculoskeletal conditions endorsed	2017 completed	Final report published July 2017
Palliative and EOL Care Off-Cycle Measure Review 2017	One measure endorsed for palliative and end-of-life care	2017 completed	Final report published September 2017
Patient- and Family-Centered Care 2015-2016	Set of endorsed measures for patient- and family-centered care	2015-2016 completed	Final report published January 2017
Patient Safety 2016	Set of endorsed measures for patient safety	2016 completed	Final report published March 2017
Patient Safety Off-Cycle Measure Review 2017	Measures considered but not endorsed	2017 completed	Final report published July 2017
Pediatric Performance Measures 2017	Set of endorsed measures for pediatrics	2017 completed	Final report published August 2017
Renal Conditions 2015-2017	Set of endorsed measures for renal conditions	2015-2017 completed	Final report published February 2017
Surgical Procedures 2015-2017	Set of endorsed measures for surgical procedures	2015-2017 completed	Final report published April 2017

Started in 2017

Description	Output	Status	Notes/Scheduled or Actual Completion Date
All-Cause Admissions and Readmissions	Set of endorsed measures for all-cause admissions and readmissions	In progress	Final report expected July 2018
Behavioral Health and Substance Use	Set of endorsed measures for behavioral health	In progress	Final report expected July 2018
Cancer	Set of endorsed measures for cancer care	In progress	Final report expected July 2018
Cardiovascular	Set of endorsed measures for cardiovascular conditions	In progress	Final report expected July 2018
Cost and Efficiency	Set of endorsed measures for cost and resource use	In progress	Final report expected July 2018
Geriatric and Palliative Care	Set of endorsed measures for geriatric and palliative care	In progress	Final report expected July 2018
Neurology	Set of endorsed measures for neurological conditions	In progress	Final report expected July 2018
Patient Experience and Function	Set of endorsed measures for patient experience and function	In progress	Final report expected July 2018
Patient Safety	Set of endorsed measures for patient safety	In progress	Final report expected July 2018
Perinatal and Women's Health	Set of endorsed measures for perinatal and women's health	In progress	Final report expected July 2018
Prevention and Population Health	Set of endorsed measures for prevention and population health	In progress	Final report expected July 2018
Primary Care and Chronic Illness	Set of endorsed measures for primary care and chronic illness	In progress	Final report expected July 2018
Renal	Set of endorsed measures for renal conditions	In progress	Final report expected July 2018
Surgery	Set of endorsed measures for surgical procedures	In progress	Final report expected July 2018

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3. Stakeholder Recommendations on Quality and Efficiency Measures and National Priorities

Description	Output	Status	Notes/Scheduled or Actual Completion Date
Recommendations for measures to be implemented through the federal rulemaking process for public reporting and payment	Measure Applications Partnership pre-rulemaking recommendations on measures under consideration by HHS for 2017 rulemaking	Completed	Completed February 2017

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Appendix B: Medicaid Task Forces and Workgroup Rosters

Adult Task Force

CHAIR (VOTING)

Harold Pincus, MD

ORGANIZATIONAL MEMBERS (VOTING)

National Rural Health Association
Diane Calmus, JD

Centene Corporation
Mary Kay Jones, MPH, BSN, RN, CPHQ

American Association of Nurse Practitioners
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Appendix D: NQF-Endorsed Measures Adjusted for Social Risk

NQF #	Title	Variable Included
0076	Optimal Vascular Care	Insurance product
0275	Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults Admission Rate (PQI 05)	Percent of households under the federal poverty level
0283	Asthma in Younger Adults Admission Rate (PQI 15)	Percent of households under the federal poverty level
0369	Standardized Mortality Ratio for Dialysis Facilities	Race, ethnicity
2651	CAHPS® Hospice Survey (experience with care)	Payer Respondent education Variable indicating survey language and respondent's home language
2827	PointRight® Pro Long Stay(TM) Hospitalization Measure	Medicaid beneficiary status
2842	Family Experiences with Coordination of Care (FECC)-1: Has Care Coordinator	Respondent education
2843	Family Experiences with Coordination of Care (FECC)-3: Care coordinator helped to obtain community services	Respondent education
2844	Family Experiences with Coordination of Care (FECC)-5: Care coordinator asked about concerns and health	Respondent education
2845	Family Experiences with Coordination of Care (FECC)-7: Care coordinator assisted with specialist service referrals	Respondent education
2846	Family Experiences with Coordination of Care (FECC)-8: Care coordinator was knowledgeable, supportive and advocated for child's needs	Respondent education
2847	Family Experiences with Coordination of Care (FECC)-9: Appropriate written visit summary content	Respondent education
2849	Family Experiences with Coordination of Care (FECC)-15: Caregiver has access to medical interpreter when needed	Respondent education
2850	Family Experiences with Coordination of Care (FECC)-16: Child has shared care plan	Respondent education
2858	Discharge to Community	Marital status
2967	CAHPS® Home- and Community-Based Services Measures	Whether respondent lives alone
3188	30-Day Unplanned Readmissions for Cancer Patients (Phase 3)	Dual eligible status

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Appendix E: MAP Measure Selection Criteria

The Measure Selection Criteria (MSC) are intended to assist MAP with identifying characteristics that are associated with ideal measure sets used for public reporting and payment programs. The MSC are not absolute rules; rather, they are meant to provide general guidance on measure selection decisions and to complement program-specific statutory and regulatory requirements. Central focus should be on the selection of high-quality measures that optimally address the National Quality Strategy's three aims, fill critical measurement gaps, and increase alignment. Although competing priorities often need to be weighed against one another, the MSC can be used as a reference when evaluating the relative strengths and weaknesses of a program measure set, and how the addition of an individual measure would contribute to the set. The MSC have evolved over time to reflect the input of a wide variety of stakeholders.

To determine whether a measure should be considered for a specified program, the MAP evaluates the measures under consideration against the MSC. MAP members are expected to familiarize themselves with the criteria and use them to indicate their support for a measure under consideration.

1. NQF-endorsed measures are required for program measure sets, unless no relevant endorsed measures are available to achieve a critical program objective

Demonstrated by a program measure set that contains measures that meet the NQF endorsement criteria, including importance to measure and report, scientific acceptability of measure properties, feasibility, usability and use, and harmonization of competing and related measures

Subcriterion 1.1	*Measures that are not NQF-endorsed should be submitted for endorsement if selected to meet a specific program need*
Subcriterion 1.2	*Measures that have had endorsement removed or have been submitted for endorsement and were not endorsed should be removed from programs*
Subcriterion 1.3	*Measures that are in reserve status (i.e., topped out) should be considered for removal from programs*

2. Program measure set adequately addresses each of the National Quality Strategy's three aims

Demonstrated by a program measure set that addresses each of the National Quality Strategy (NQS) aims and corresponding priorities. The NQS provides a common framework for focusing efforts of diverse stakeholders on:

Subcriterion 2.1	*Better care, demonstrated by patient- and family-centeredness, care coordination, safety, and effective treatment*
Subcriterion 2.2	*Healthy people/healthy communities, demonstrated by prevention and well-being*
Subcriterion 2.3	*Affordable care*

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3. Program measure set is responsive to specific program goals and requirements

Demonstrated by a program measure set that is "fit for purpose" for the particular program

Subcriterion 3.1   *Program measure set includes measures that are applicable to and appropriately tested for the program's intended care setting(s), level(s) of analysis, and population(s)*

Subcriterion 3.2   *Measure sets for public reporting programs should be meaningful for consumers and purchasers*

Subcriterion 3.3   *Measure sets for payment incentive programs should contain measures for which there is broad experience demonstrating usability and usefulness (Note: For some Medicare payment programs, statute requires that measures must first be implemented in a public reporting program for a designated period)*

Subcriterion 3.4   *Avoid selection of measures that are likely to create significant adverse consequences when used in a specific program*

Subcriterion 3.5   *Emphasize inclusion of endorsed measures that have eCQM specifications available*

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

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

Subcriterion 4.1   *In general, preference should be given to measure types that address specific program needs*

Subcriterion 4.2   *Public reporting of program measure sets should emphasize outcomes that matter to patients, including patient- and caregiver-reported outcomes*

Subcriterion 4.3   *Payment program measure sets should include outcome measures linked to cost measures to capture value*

5. Program measure set enables measurement of person- and family-centered care and services

Demonstrated by a program measure set that addresses access, choice, self-determination, and community integration

Subcriterion 5.1   *Measure set addresses patient/family/caregiver experience, including aspects of communication and care coordination*

Subcriterion 5.2   *Measure set addresses shared decision making, such as for care and service planning and establishing advance directives*

Subcriterion 5.3   *Measure set enables assessment of the person's care and services across providers, settings, and time*

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6. Program measure set includes considerations for healthcare disparities and cultural competency

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

Subcriterion 6.1	*Program measure set includes measures that directly assess healthcare disparities (e.g., interpreter services)*
Subcriterion 6.2	*Program measure set includes measures that are sensitive to disparities measurement (e.g., beta blocker treatment after a heart attack), and that facilitate stratification of results to better understand differences among vulnerable populations*

7. Program measure set promotes parsimony and alignment

Demonstrated by a program measure set that supports efficient use of resources for data collection and reporting, and supports alignment across programs. The program measure set should balance the degree of effort associated with measurement and its opportunity to improve quality.

Subcriterion 7.1	*Program measure set demonstrates efficiency (i.e., minimum number of measures and the least burdensome measures that achieve program goals)*
Subcriterion 7.2	*Program measure set places strong emphasis on measures that can be used across multiple programs or applications (e.g., Physician Quality Reporting System, Meaningful Use for Eligible Professionals, Physician Compare)*

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Appendix F: Federal Quality Reporting and Performance-Based Payment Programs Considered by MAP

1. Ambulatory Surgical Center Quality Reporting
2. End-Stage Renal Disease Quality Improvement Program
3. Home Health Quality Reporting
4. Hospice Quality Reporting
5. Hospital Acquired Condition Payment Reduction (ACA 3008)
6. Hospital Inpatient Quality Reporting (IQR) Program
7. Hospital Outpatient Quality Reporting (OQR) Program
8. Hospital Readmission Reduction Program
9. Hospital Value-Based Purchasing
10. Inpatient Psychiatric Facility Quality Reporting Program
11. Inpatient Rehabilitation Facility Quality Reporting
12. Long-Term Care Hospital Quality Reporting
13. Medicaid Adult and Child Core Measure Sets
14. Medicare Shared Savings Program
15. Merit-Based Incentive Payment System
16. Prospective Payment System (PPS)-Exempt Cancer Hospital Quality Reporting
17. Skilled Nursing Facility Quality Reporting Program
18. Skilled Nursing Facility Value-Based Purchasing Program

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Appendix G: MAP Structure, Members, Criteria for Service, and Rosters

MAP operates through a two-tiered structure. Guided by the priorities and goals of HHS's National Quality Strategy, the MAP Coordinating Committee provides direction and direct input to HHS. MAP's workgroups advise the Coordinating Committee on measures needed for specific care settings, care providers, and patient populations. Time-limited task forces consider more focused topics, such as developing "families of measures"—related measures that cross settings and populations—and provide further information to the MAP Coordinating Committee and workgroups. Each multistakeholder group includes individuals with content expertise and organizations particularly affected by the work.

MAP's members are selected based on NQF Board-adopted selection criteria, through an annual nominations process and an open public commenting period. Balance among stakeholder groups is paramount. Due to the complexity of MAP's tasks, individual subject matter experts are included in the groups. Federal government *ex officio* members are nonvoting because federal officials cannot advise themselves. MAP members serve staggered three-year terms.

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Appendix H: Identified Gaps by NQF Measure Portfolio

In 2017, NQF's standing committees identified the following measure gaps—where high-value measures are too few or non-existent to drive improvement—across topical areas for which measures were reviewed for endorsement.

Behavioral Health

- Outcome measures for psychotic disorders, including schizophrenia
- Overprescription of opiates
- Setting-specific measures (e.g., jails)
- Proximal outcome measures
- Measures that focus on substance use disorders in the primary care setting
- Composite measures that incorporate myriad mental illnesses (e.g., bipolar disorder, depression, and schizophrenia) rather than separate screening measures for each illness
- Patient-reported outcome measures
- Measures that encompass multiple settings to better assist in the push towards integrated behavioral health and physical health
- Measures that examine the period of time between screening and remission
- Measures that address access to behavioral health facilities, or lack thereof
- Measures that focus not only on treatment and prevention but also on recovery

Cancer

- Prostate and thoracic cancer measures that range from screening to advanced disease
- Oral chemotherapy compliance measures
- Outcome measures including risk-adjusted morbidity and mortality measures

Care Coordination

- Linkages and synchronization of care and services
- A comprehensive assessment process that incorporates the perspective of a care recipient and his care team
- Shared accountability within a care team
- Measures that evaluate "system-ness" rather than measures that address care within silos
- Outcome measures
- Capturing data and documenting linkages between a patient's need/goal and relevant interventions in a standardized way and linked to relevant outcomes
- Measures that are evidence-based

Cost and Resource Use

- Total per capita cost measure for Medicare patients
- Measures for post-acute care settings, including home health, skilled nursing facilities, and long-term acute care
- Measures that examine spending for high-cost, high-risk acute patients, including patients with multiple chronic diseases
- Measures that examine resource use across the patient episode of care—spanning across care settings, providers, and time

Health and Well-Being

- Measures that detect differences in quality across institutions or in relation to certain benchmarks, but also differences in quality among populations or social groups.

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- Measures that assess access to care
- Measures that assess environmental factors
- Measures that address food insecurity
- Measures that address language and literacy
- Measures that address health literacy
- Measures that address social cohesion

Infectious Disease

- Measures that underscore the value of infectious disease (ID) consultation, which studies have shown to improve outcomes. For example, the rate of ID consults in those with Staphylococcus aureus bacteremia, cryptococcal infection, and HIV patients on ART.
- HPV screening in females with HIV

Palliative and End of Life Care

- Screening for depression, anxiety, etc.
- Access to nutritional support
- Use of decisional conflict scale
- Dying in preferred site of death
- Assessment of psychosocial and spiritual issues/needs
- Provider Orders for Life-Sustaining Treatment (POLST) form completion according to patient values
- Assessing family/caregivers for risk (e.g., depression, complicated bereavement, etc.)
- Preservation of functional status
- Total pain (including spiritual pain)
- Psychosocial health
- Unmet need (e.g., through Integrated Palliative Care Outcome Scale (iPOS) instrument)
- Quality of life (e.g., through single item self-report of quality of life as in McGill Quality of Life Survey)
- Goal-concordance
- Shared decision making
- Comfort with decisions that are made (e.g., less decisional conflict)
- Patient/family engagement
- Values conversation that elicits goals of care
- Good communication (e.g., prognosis, health literacy, clarity of goals for all parties)
- Unwanted care/care that is not goal-concordant
- Symptomatology due to use of excess/poor value medications/ interventions
- Unmet psychosocial and spiritual need
- Medication reconciliation
- Safe medication use
- Safe medication disposal
- Feeding tube placement in dementia patients
- Discussion about and potential discontinuation of available interventions in terminal patients (e.g., statin, aspirin, multivitamins, memory drugs, ICDs, CPR, chemo in last 2 weeks)
- Caregiver support
- Caregiver stress
- Good communication (early, open/shared)

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- Basic caregiver skills training provided (e.g., how to lift patient without injury to caregiver's back, changing sheets when patient is bedridden, etc.)
- Potentially avoidable ED visits and hospitalizations
- Proportion of elderly chronic kidney disease patients with multiple comorbidities who were started on dialysis
- Proportion of dialysis patients admitted to ICU in last 30 days of life
- Percentage of elderly patients with chronic kidney disease and multiple comorbidities admitted to an "active medical management without dialysis" pathway of care
- Geographic access to hospice and palliative care (both hospital and community)
- Access to home and community-based services
- Time to palliative care consult or timeliness of palliative care consultation (>48 hours prior to death)
- Access to specialty palliative care team
- Nursing load or chaplain load
- Number of patients in a hospice or palliative care program who are getting chaplain visits
- Standard/minimum service offerings
- Materials offered at appropriate education levels/languages

Patient Safety

- Interoperability of health information technology
- Transitions in care
- Safety in ambulatory surgical centers
- Measurement focused on episodes of care across and within settings
- Outcome measures related to medical errors and complications
- Greater focus on ambulatory, outpatient, and post-acute care
- Assessment of workforce performance
- Patient-reported outcomes

Pediatric Performance Measures

- Additional pediatric patient safety measures, such as measures related to dosing errors for pediatric patients, pediatric diagnostic errors, and patient safety for outpatient pediatric services
- Measures pertaining to pediatric patients living with intellectual and/or developmental disabilities, including measures for children with dual diagnoses of intellectual/developmental disability and mental illness
- Measures of coordination of care for children with chronic disease
- Measures of quality for foster children, in particular, measures of foster care/ out-of-home placement rates for substance-exposed newborns, and measures evaluating the time substance-exposed children spend in biologic-home settings versus foster care
- Measures of how much time substance-exposed newborns spend in the acute care hospital, NICU, rehabilitation, or children's specialty hospitals
- Measures of quality evaluating abuse and mistreatment, including measures specifically focused on children with special needs
- Measures that capture social determinants of health screening, including food and housing insecurity
- Measures evaluating cost as it relates to children with special healthcare needs that are technologically dependent

- Measures defining parental strengths and needs within a practice site
- Measures to capture the identification of a team to work together to plan and test improvements in eliciting parental strengths and needs within a practice site
- Measures on integrating tools (e.g., process flows, prompts, and reminders) into practice flow to support the engagement of parents
- Clinic-/systems-level measures that offer more specificity about appropriate antibiotic prophylaxis in children with sickle cell anemia

Person and Family Centered Care
- Pediatric measures, especially for shared decision making
- Measures derived from shorter versions of the CAHPS surveys
- The next level of functional measures: measures not tied to traditional inpatient settings, and that focus on functional restoration, becoming independent, and nonmedical outcomes (e.g., return to employment)
- Setting-specific measures that ensure issues and outcomes specific to that site are measured, for example, measures for ventilator care, which would only happen in Long Term Acute Care (LTAC) Facilities and would not apply to Skilled Nursing Facilities (SNF) or Inpatient Rehabilitation Facilities (IRFs)
- Measures for partnerships between large health systems and community-based agencies, to help health systems partner with high-quality community agencies
- Additional measures of informed and shared decision making to ensure people are effective advocates for their healthcare, including, how to choose and change a provider, how to use the healthcare system to best advantage, how to use technology to benefit the patient, and how to interpret quality data
- Measures across the continuum of care, starting in primary care or emergency departments, through the completion of all services for the patient
- The medical neighborhood extending past the medical home and into other areas of the community where care is received
- Measures that specifically address eliciting and aligning patient goals with the plan of care

Renal
- Patient-reported outcomes
- Patient experience of care and engagement
- Care for comorbid conditions
- Palliative dialysis
- Vascular Access
- Young dialysis patients' preparedness for transition from pediatric facilities to adult facilities
- Rehabilitation of people who are working age
- Harmonization and improvement of measuring bloodstream infections across dialysis and other facilities

Surgery
- Outcome measures
- Specialty areas that are still in early stages of quality measurement, including orthopedic surgery, bariatric surgery, neurosurgery, obstetrics, gynecology, and smaller specialties (MAP also identified gynecology and genitourinary measurement as gaps)
- Pediatric (<18 years of age), including morbidity and mortality, either added to existing measures or specific to pediatric populations

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- Adult and pediatric morbidity and mortality related to frequently performed cardiac procedures beyond measures now available
- Postsurgical functional status, including neurodevelopmental morbidity following pediatric and congenital heart surgery
- Surgery-related infections
- Patient-centered approach to decision making including determination to forego treatment
- Aggregated picture of episodes of care, including short- and long-term morbidity and patient-reported outcomes, to include measures that cross organizational borders
- Discharge coordination
- Shared accountability

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Appendix I: Medicare Measure Gaps Identified by NQF's Measure Applications Partnership

During its 2016-2017 deliberations, MAP identified the following measure gaps—where high-value measures are too few or nonexistent to drive improvement—for Medicare programs for hospitals and hospital settings, post-acute care/long-term care settings, and clinicians.

Program	Measure Gaps
End-Stage Renal Disease Quality Incentive Program (ESRD QIP)	• Assessment of quality of pediatric dialysis • Management of comorbid conditions (e.g., congestive heart failure, diabetes, and hypertension) • Patient-reported outcomes such as functional status, quality of life, and symptom management
PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) Program	• Measures that assess safety events broadly (i.e. a measure of global harm) • Quality of patients' informed consent process and assessment of patient understanding of potential risks and benefits of treatment
Ambulatory Surgery Center Quality Reporting (ASCQR) Program	• Site infections • Complications • Patient and family engagement • Appropriate pre-operative testing
Inpatient Psychiatric Facility Quality Reporting Program (IPF QRP)	• Medical comorbidities • Quality of psychiatric care provided in the emergency department for patients not admitted to the hospital • Discharge planning • Condition-specific readmission measures • Access to inpatient psychiatric services, especially in rural areas
Hospital Outpatient Quality Reporting (OQR) Program	• Use of evidence-based practices • Communication and care coordination • Falls • Accurate diagnosis
Hospital Inpatient Quality Reporting (IQR) Program and Medicare and Medicaid EHR Incentive Programs for Eligible Hospitals and Critical Access Hospitals (CAHs)	• Patient-reported outcomes • Dementia
Hospital Readmissions Reduction Program (HRRP)	• None discussed
Hospital Value-Based Purchasing Program (VBP)	• Reliable and actionable safety measures
Hospital-Acquired Condition Reduction Program (HACRP)	• Reliable and actionable safety measures

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Program	Measure Gaps
Merit-Based Incentive Payment System (MIPS)	• Outcome measures (e.g., episode-based as well as patient-reported outcomes) • Improved process measures (e.g., composite measures, measures tied to outcomes most important to patients)
Medicare Shared Savings Program (MSSP)	• Care coordination (e.g., communication and timeliness of care) • Avoidable emergency department use • Person and family engagement
Inpatient Rehabilitation Facility Quality Reporting Program (IRF QRP)	• Experience of care measures related to patient and family engagement
Long-Term Care Hospital Quality Reporting Program (LTCH QRP)	• LTCH-specific CAHPS survey to assess experience of care • Nutritional status measures • Transfer of information between clinicians
Skilled Nursing Facility Quality Reporting Program (SNF QRP)	• Experience of care • Efficacy of transfers from acute care hospitals to SNFs • Transfer of information between clinicians
Skilled Nursing Facility Value-Based Purchasing Program (SNF VBP)	• None discussed
Home Health Quality Reporting Program (HH QRP)	• Measures to drive adoption of congestive heart failure care plans
Hospice Quality Reporting Program (HQRP)	• Medication management at the end of life • Provision of bereavement services • Patient care preferences • Symptom management for conditions other than cancer, particularly dementia

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Appendix J: Medicaid Measure Gaps Identified by NQF's Medicaid Task Force and the Dual Eligible Beneficiaries Workgroup

In 2017, NQF's Medicaid Task Forces and Dual Eligible Beneficiaries Workgroup identified the following high-priority measure gaps for the Medicaid Adult and Child Core Sets of measures and the Dual Eligible Beneficiaries Family of Measures.

Medicaid Measure Set	High-Priority Measure Gap Areas
Adult Core Set	• Behavioral health (integration and coordination with primary and acute settings and outcomes) • Assessing and addressing social determinants of health • Maternal/reproductive health (e.g., inter-conception care and poor birth outcomes, access to obstetric care in the rural community, and postpartum complications) • Long-term care-related supports and services (e.g., home and community-based services, nursing home care) • New chronic opiate use
Child Core Set	• Substance abuse • Care coordination (e.g., care integration, social services coordination, cross-sector measures, and care coordination for conditions requiring community linkages) • Mental health • Overuse and medically unnecessary care as well as underuse • Cost and resource use measures
Dual Eligible Beneficiaries Family of Measures	• Goal-directed, person-centered care planning and implementation • Shared decision making • Systems to coordinate acute care, long-term services and supports (LTSS), and nonmedical community resources • Beneficiary sense of control/autonomy/self-determination • Psychosocial needs • Community integration/inclusion and participation • Optimal functioning • Home and community-based services (HCBS) • Affordable and cost-effective care

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