Measure Feedback Loop—Environmental Scan

FINAL REPORT

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NATIONAL QUALITY FORUM

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EXECUTIVE SUMMARY

In the current quality measurement landscape, measures are developed and released for use often lacking a mechanism to collect or solicit feedback from those who ultimately implement them. The collection of data on the implementation and use of measures is important not only for measure developers, but also for end-users such as patients, clinicians, healthcare purchasers, and insurers, which can offer valuable input based on their experiences with measures. The lack of systematic means and established channels for collecting and reporting feedback to developers who can act upon it is the missing link in the cycle of continuous improvement of measurement. This information is vital to identifying opportunities for improvements to measure specifications, implementation guidance, impact on quality improvement, cost, and other aspects of the measure that may improve usability.

An improved understanding of the current environment of measure feedback is an important step in enhancing current approaches for incorporating feedback information into the measure development process. This effort seeks to understand the current infrastructure and practices that exist to support measure feedback loops and the opportunities for improving existing mechanisms for exchanging feedback, and to identify challenges that should be addressed in the implementation of a pilot feedback loop. This environmental scan seeks to provide a current review and assessment of existing channels for soliciting and receiving feedback, the data currently available, and relevant target audiences.

To accomplish this work, NQF convened a multistakeholder Committee to guide its direction, conducted a literature review and key informant interviews to gather information on current sources of measure feedback. This paper discusses each of the below sources of measure feedback:

1. Feedback derived from NQF processes
2. Feedback derived from Centers for Medicare and Medicaid Services (CMS) processes
3. Other sources of performance data

An assessment of the findings uncovered several gaps in feedback and challenges to sustaining a measurement feedback loop, including variation in data collection process, timing of feedback, and measurement burden. This report is the first in a series of reports that will be developed to help build the infrastructure to support the pilot of a measure feedback loop. This initiative aims to enhance and expand feedback on measure implementation that could be integrated into NQF's ongoing work and throughout the quality measurement enterprise.

BACKGROUND

In the current quality measurement environment, a significant gap in communication and feedback remains between those who develop, evaluate, and select measures and those who implement measures. The collection of data on the implementation and use of measures is important not for only measure developers, but also for end-users such as patients, clinicians, healthcare purchasers, and insurers, which can offer valuable input based on their experiences with measures. The lack of systematic means and established channels for collecting and reporting feedback to those who can act upon it is the missing link in the cycle of continuous improvement of measurement. This information is vital to identifying opportunities for improvements to measure specifications, implementation guidance, and other aspects of the measure that may improve usability. The ability to effectively measure and report meaningful and actionable healthcare metrics is vital to improving healthcare delivery and patient outcomes.

The use of measures for public reporting and value-based purchasing has raised the stakes for performance measurement and necessitates a mechanism for providing and collecting feedback to facilitate measure development and maintenance. Due to the implications of measure use in accountability applications, there is an opportunity to improve the infrastructure that would support the identification and resolution of unintended consequences as they arise, and enable timely consideration by measure stewards. A survey[1] of hospital leaders found that over 70 percent agree that publicly reported clinical outcome, process, and patient experience measures improved quality at their institutions, with over half also observing quality improvement stemming from cost and volume measures. These same respondents indicated widespread use of clinical measures that are reviewed with their boards and senior leadership, and incorporated into organizational strategic planning initiatives. However, concerns about clinical meaningfulness, unintended consequences, system cost, and public reporting tools remain and go unreported to the measure stewards without a systematic way to share and collect this feedback.[2] Understanding which measures are closely linked to quality improvements and better patient outcomes enables the enterprise to focus on measures that truly make a difference. In addition, learning how implementation impacts organizations, providers, and patient care could inform NQF's endorsement efforts and support the parsimony of the NQF portfolio, thereby reducing the burden of measurement.

NQF is committed to actively seeking feedback on NQF-endorsed measures currently in use. While NQF receives information from the public and measure developers and stewards about the implementation and use of measures within the measure endorsement and selection processes, this feedback is unstructured and inconsistent. There is significant opportunity to strengthen and standardize the feedback mechanisms and to learn from the field about experiences with measures. This initiative aims to enhance and expand feedback on measure implementation that could be integrated into NQF's Consensus Development Process, the Measure Applications Partnership (MAP) deliberations, NQF member networks, the NQF Measure Incubator™ Learning Collaborative, measure development and stewardship, and other key processes of the measurement enterprise. To understand the existing channels, practices, and types of feedback provided, NQF assessed feedback mechanisms in the current quality measurement enterprise. This scan identifies opportunities for improving future efforts to solicit and collect feedback.

Understanding Feedback Loops

Understanding of the current environment of measure feedback and how it fits into the quality measurement enterprise (Figure 1) is an important step in improving the process for incorporating this information into the measure development process. Improved measure feedback loops could support measure developers' efforts to identify timely, innovative, and effective approaches to use feedback from measure end-users. The successful collection of measure feedback requires extensive communication, including outreach to individuals at all levels of measure implementation as well as establishing channels for soliciting and receiving this feedback.

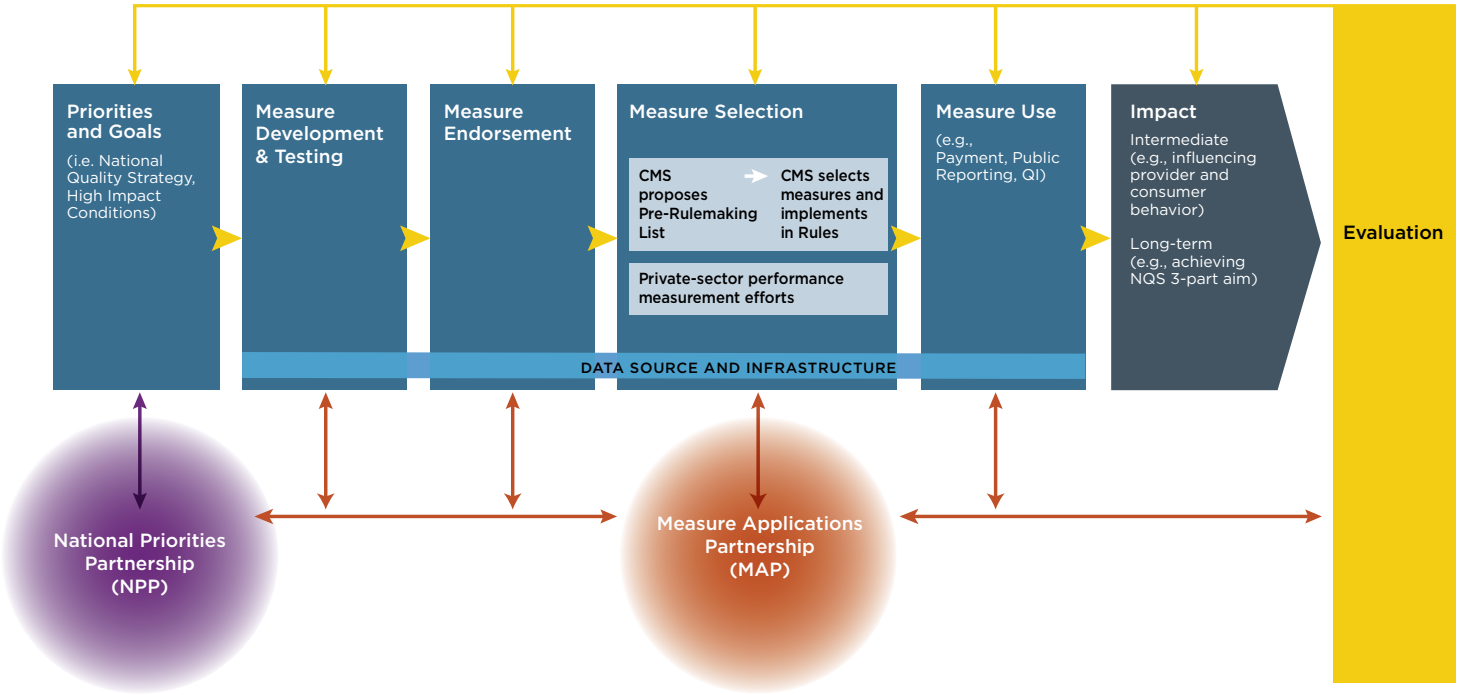
The feedback loop is a concept of continuous flow of inputs to and within the quality measurement enterprise that drives improvement and refinement of quality measures. While many measure end-users have significant experience and feedback to offer, getting this information into the hands of measure developers and those evaluating measures at the right time has been a major challenge. The creation of efficient, effective, and clear channels through which useful measure feedback flows to measure developers and stewards is an important next step in improving measure development, endorsement, selection, and use. For the purposes of this project, "feedback" and "feedback loop" are defined as follows:

- **Feedback**: information about measure performance or implementation based on either quantitative data (e.g., performance data) or qualitative information (e.g., public comments, key informant interviews, feedback generated through the measure development and evaluation process).
- **Feedback loop**: the process in which feedback on measure use and implementation is relayed back to the measure stewards and multistakeholder committees who make recommendations on measure endorsement or selection for program use.

The measurement enterprise involves a multistep process with various bodies offering input at different stages of measure development and implementation. As a result, there are various opportunities throughout the process to incorporate measure feedback (see Figure 1). Setting measure priorities and goals during the initial stages of measure development creates opportunities for stakeholders to give feedback. This feedback can aid in refining measure concepts and measures under development and can involve lessons learned from test sites, the identification of unintended consequences, suggestions for revisions to specifications, and the need for additional implementation guidance.

Once the measure is endorsed and put into use, measure users may also have feedback on the measure related to its implementation and ongoing use in quality improvement or payment programs. Feedback on measures may range from the relative utility of the measure in patient decision making, to the burden experienced by clinicians when reporting the measure. It may derive from experience with the measure from development to impact. Improved feedback loop mechanisms would help measure developers and other stakeholders understand if a measure is meeting its objectives to improve quality of care and health outcomes, and provide information on any unintended consequences. By gathering meaningful, timely, and comprehensive feedback on measures in use, improved feedback loops would also help ensure that the quality improvement enterprise itself undergoes continuous improvement.

FIGURE 1. QUALITY MEASUREMENT ENTERPRISE



PURPOSE

This environmental scan report reviews and assesses existing channels for soliciting and receiving feedback, the data currently available, and the frequency with which this information is updated. Additionally, this scan aims to identify of any gaps in information that should be considered within the NQF's Consensus Development Process and by other stakeholders within the quality measurement enterprise. This is the first of three reports aimed at understanding the current landscape for measure feedback. Subsequent reports will assess NQF's current processes for collecting and evaluating use and usability measure information and develop a plan to pilot and implement a feedback loop initiative. This report focuses on currently available sources of measure feedback with NQF processes and sources of measure feedback for Centers for Medicare & Medicaid Services (CMS) measures developed using CMS funding, or measures used by CMS in Medicare quality reporting and value-based payment programs. The Committee will use the findings of this report to guide the development of an implementation plan for a measure feedback loop pilot.

APPROACH AND METHODOLOGY

To guide this effort, NQF convened the Measure Feedback Loop Committee and charged it with identifying and recommending options for the implementation of a measure feedback loop pilot program. This multistakeholder Committee also provided guidance on the approach, search terms, definitions, and preliminary findings of this environmental scan. The Committee includes 21 representatives from various stakeholder groups, including measure developers, implementers, clinicians, member organizations, and patient advocates. Many representatives also bring perspectives from prior involvement with NQF's measure endorsement process and their own experiences with measure implementation and feedback loops. (See **Appendix F** for the full Committee roster.)

The environmental scan was conducted using a three-pronged approach to collect relevant information for consideration including: (1) a review of literature and grey literature; (2) interviews with key stakeholders; and (3) review of feedback tools and mechanisms for collecting measure feedback. For the purposes of the scan, several research questions were used to guide and scope the search and selection of appropriate articles and publications and to inform the key informant interview guide. The research questions included:

- What quantitative and qualitative data are currently available on CMS measure performance and implementation?
  - How often are these data updated?
  - Are these data currently used to provide feedback to developers?
  - What are the methods for collecting and sharing these data?
  - What tools and channels are there for soliciting, collecting, and communicating this information?
- What are other recommended data sources?

Literature Review

NQF searched PubMed, *Journal of the American Medical Association (JAMA), New England Journal of Medicine Blog*, and *Health Affairs Blog*, as well as grey literature (i.e., academic or policy literature that is not peer-reviewed) to identify existing sources of measure feedback. The literature review was conducted to identify currently available data sources and to provide information on gaps and other challenges for measure feedback, including key themes that undergird the collection and delivery of useful feedback from clinicians and patients and family caregivers

NQF began the review using key search terms such as "measure," "quality," "burden," "healthcare effectiveness," "unintended consequences." The full index of search terms used appears below. NQF formulated the aforementioned key terms into simple queries to generate the largest number of results, such as "reporting" and "feasibility." All articles older than the year 2000 were excluded, and titles, keywords, and abstracts of the identified articles were reviewed to determine if the information aligned with the project scope. For operational definitions of key terms please see **Appendix B**.

Environmental Scan Search Terms for Literature Review

- Performance measurement results
- Performance rates
- Impact of quality improvement
- Measure feedback
- Reporting
- Data collection
- Registries
- Burden (synonyms)
- Clinician/Patient experience
- Clinician/Patient satisfaction
- Clinician burnout

- Implementation issues
- Feasibility
- Dashboard
- Consumer feedback
- Equity of care
- Unintended consequences
- Utilization
- Consensus Development Process
- Usability
- Use
- Validity of specification
- Reliability

Patient reported outcomesNQF reviewed the full text of 58 articles from the current literature that fell into the project scope. Forty-four articles were ultimately excluded after reviewing the full text. Criteria for exclusion included:

- Articles with findings that are not directly relevant to feedback on performance measures (e.g., in several instances, articles were concerned with the performance measure results themselves, or clinical evidence supporting the development of quality measures). This represented the bulk of the excluded articles.
- Articles with findings that were mostly or completely duplicative of other research, including single articles in domains with systematic reviews.

Fourteen articles met the search criteria and were deemed relevant to the project scope (see **Appendix A**.

Key Informant Interviews

In order to supplement findings from the literature, NQF conducted a series of seven, one-hour key informant interviews via phone. Interviewees were recommended by Committee members, the contractor of this effort (CMS), and NQF staff based on expertise and experience with quality measure use, development or implementation.[a] Interviewees spanned stakeholder perspectives and included representatives of specialty societies, patient representatives, measure developers, and measure implementers. An interview guide was developed to facilitate the interviews and to support consistency across interviews. The interview guide included questions grouped around five central domains: **(**1) experience with collecting measure feedback, (2) experience with receiving and acting on measure feedback, (3) experience giving feedback, (4) challenges and mitigation strategies, and (5) gaps in knowledge, evidence, and organizational need. The complete interview guide and the list of key informants interviewed appear in **Appendix D** and **Appendix E**.

a Please note that interviews were not based on a representative sample of stakeholders. The information collected should not be interpreted as representative of any stakeholder group's opinion.

DISCUSSION OF FINDINGS

The scan yielded information on four key aspects of a feedback loop: (1) categories of feedback, (2) key stakeholders from which measure feedback can be collected, (3) channels for exchanging feedback within the NQF and CMS quality measurement processes, and (4) tools for collection and soliciting feedback. The following discussion describes the findings related to each key aspect of the feedback loop including the benefits, limitations, and challenges.

Categories of Feedback

Through the literature review, key informant interviews, and Committee discussion, several examples of measure feedback were identified (Table 1). The information provided as feedback on a measure can fall into several categories, including the burden of implementing a measure on providers or a healthcare system, the measure benefits (costs avoided), measure performance and impact, and meaningfulness (to patients or those being measured). Cataloging the types of feedback can support future efforts to solicit specific types of feedback from the relevant stakeholders at the appropriate point in the measurement enterprise; it may also and help to target information needed for improvements of the measure specifications or implementation requirements.

TABLE 1. CATEGORIES OF MEASURE FEEDBACK

Type of Feedback	Description
Unintended consequences	Unplanned negative consequences resulting from implementing and reporting measures.
Actionability	The extent to which the measure results are actionable for those being measured (i.e., the accountable entity)
Burden	The time and resources required by healthcare providers or the system to implement and report a measure may outweigh the benefits of the measure
Measure performance	Measure scores and changes in scores, quality, and/or health outcomes, including performance gap and opportunity for improvement
Return on investment	A comparison of long-term benefits resulting from measurement (e.g., cost savings or quality improvement) and the costs and resources used to implement a measure
Meaningfulness	The extent to which the information yielded by the measure score is useful to patients and other stakeholders. Useful and meaningful information for patients may aid in decision making or in an assessment of value. Feedback from patients regarding their experience with the measure, including on patient-reported and other health outcomes
Implementation experience	Information on challenges to implementation or variations in implementation made to accommodate user needs
Implementation costs	A monetized assessment of the resources used to implement a measure or set of measures (e.g., level of effort to collect data and implement measures in terms of number of employees or FTEs

Feedback from Key Stakeholders

Some key groups of stakeholders should be consulted to provide feedback on measures in use. Each of these stakeholder groups offers an important perspective on the measure as either a measure implementer or end-user.

- **Policymakers and administrators:** Policymakers and administrators use quality and performance metrics to make decisions about how to assess and improve care provided through the health system at various levels. They may have feedback on the usefulness of measures for payment and quality improvement programs, burden on the health system to implement, and cost of creating the data necessary to track a measure.
- **Clinicians:** Clinicians are often the accountable entity on which measures are based, and they may also be responsible for generating the data in the patient record that is used for measurement. Clinicians can offer valuable insights on measure burden to implement, unintended consequences, and the meaningfulness of the measure results.
- **Patients:** Patients are one of the key end-users of measure results. Patients can provide insight as to whether a measure is easily understandable and whether the measure results are useful for decision making. Patients who provide the information for patient-reported outcomes can provide insight as to whether the measures are burdensome for respondents, whether they lead to any unintended consequences, or whether the measure construct accurately captures the stated measure objective.
- **Measure Developers:** Measure developers are individuals or organizations that design and construct measures.[3] Each developer has a process for developing performance measures that is unique to their organization. Organizations that develop performance measures, such as specialty societies, CMS contractors, accreditation organizations, differ in their motivations and purpose for creating these measures. As a result, some measure stakeholders have standardized, cyclical processes for measure development and feedback collection, while for others measure development is not their core line of work.

Channels for Exchanging Feedback

The environmental scan identified multiple existing channels of measure feedback. These channels are documented in the following three sections:

1. Feedback derived from NQF processes
   - Public comments received during the Measure Applications Partnership deliberations
   - Public comments received during the Consensus Development Process
   - Usability and Use section of endorsement measure submission form
   - NQF feedback tool
2. Feedback derived from CMS processes
   - Public comments received during the rulemaking process
   - Impact assessment of CMS quality and efficiency measures report
   - Quality Rating System (QRS) and Qualified Health Plan (QHP) Enrollee Experience Survey (QHP Enrollee Survey)
   - CMS data repositories
   - JIRA database
3. Other sources of performance data
   - Performance data from quality clinical data registries
   - Performance data from measure developers

Feedback Derived from NQF Processes

NQF has several tools and processes to gather feedback on measures. NQF analyzed the processes through which feedback is solicited, the types of feedback available (e.g., public comments, expression of support), and the volume of feedback received. This section does not provide an in-depth analysis of the current information collected for the assessment of the Use and Usability criterion as this will be addressed in detail in subsequent related reports.

Public Comments Received During the Measure Applications Partnership Deliberations

NQF convenes the Measure Applications Partnership (MAP) as a public-private partnership of healthcare stakeholders. MAP is a is a statutory requirement under Social Security Act Section 1890A. MAP provides input to the Department of Health and Human Services (HHS) on the selection of performance measures for public reporting and performance-based payment programs. MAP also helps to identify gaps in measure development and encourages measure alignment across public and private programs, settings, levels of analysis, and populations. During the annual MAP pre-rulemaking process, NQF solicits feedback on candidate measures by publicly publishing the list of quality and cost measures that HHS is considering for adoption through rulemaking under Medicare. This **Measures Under Consideration (MUC) list** is made publicly available online prior to and during the annual deliberations of the MAP workgroups. Public comments are also solicited on the MAP final reports before the MAP Coordinating Committee's review of those reports.

The MAP public comment process yielded 361 public comments on 40 measures in the 2018-2019 cycle. Feedback received included comments on risk-adjustment methodology, specifications, exclusions, data sources, implementation, and possible measure burden. Feedback also included recommendations for multistakeholder review and concerns over how measures align across payment programs. Feedback was also provided on unintended consequences of specific measures under consideration, for example, MUC 2018-0048 *Potential Opioid Overuse*; commenters expressed concern that implementation may lead to changes in prescribing behavior for opioids that may harm patients. Public comments have also noted that the timing of the comment period, held in December of each year, makes the coordination and development of feedback challenging for stakeholders due to proximity to the winter holidays.

When commenting during the MAP process, stakeholders commonly express a concern that while feedback is received before the measures are widely implemented in programs, it is too late to impact the measure development process. MAP workgroup and committee members stressed the need for better feedback from frontline providers to ensure that measures are driving improvement and not causing negative unintended consequences.[4] Similarly, MAP workgroup and committee members supported NQF efforts to work with its member organizations to gather feedback on the measures, through the MAP and CDP processes and NQF's measure feedback portal (see **NQF Feedback Tool**), and the members have encouraged other organizations to work with NQF to submit more relevant and timely performance data on the current measures. To address this concern, recent cycles of MAP have included a feedback loop component, piloted in 2016, and rolled out to all MAP workgroups in 2017.

Beginning with 2016-2017 pre-rulemaking, NQF and CMS piloted the feedback loop process with the PAC/LTC Workgroup. During the October web meeting, NQF and CMS will provide updates on the development and endorsement of selected measures. The goal of this feedback loop was to provide updates based on stakeholder concerns. The feedback loop was developed in response to MAP members that expresssed interest in knowing the following:

- Whether a measure has been submitted for NQF endorsement and the results of the endorsement and maintenance standing committee's review;

- Whether a measure is performing as expected; and
- Whether the developer has updated a measure to address MAP conditions of support.

This feedback loop review is intended to allow for a change in MAP's recommendation about a measure. The current structure of the feedback loop involves a presentation from CMS to each of the MAP workgroups related to measures currently used in programs. During the 2018-2018 MAP deliberations, the feedback loop included an update on the results of the last rulemaking cycle, as well as updates on specific harm and opioid measures under development.

Public Comments Received During the Consensus Development Process

NQF receives information on measure use and feedback when measures undergo endorsement and maintenance review. Both NQF members and interested members of the public can submit comments on the CDP standing committee's draft recommendations through the NQF website. This includes measures that a standing committee recommended for endorsement, those that were not recommended, and those in which consensus for the endorsement recommendation was not reached. As part of NQF's commitment to transparency, all submitted comments are posted on the NQF website, where any visitor can review them. The relevant standing committee reviews all submitted comments, and all submitted comments receive responses from the standing committee, measure developers, and/or NQF, as appropriate. The standing committee may revise its recommendations in response to a specific comment or series of comments that are submitted during this phase of the CDP.

As part of the CDP process, revised in 2017, NQF created one continuous public commenting period. This commenting period spans 16 weeks, to allow time for public and NQF member commenting. The commenting period opens approximately three weeks prior to the standing committee evaluation meeting and closes 30 days after NQF staff posts the draft technical report on the NQF website. NQF includes comments and member indications of support received at least one week prior to the committee evaluation meeting, and these comments are included in the committee materials for discussion during the measure evaluation meeting. The committee reviews any comments received following the committee evaluation meeting after the close of the public commenting period.

The public comment process of the CDP has yielded 229 comments on 56 measures from November 1, 2017 to February 22, 2019—and the number of public comments received during the CDP process has declined in recent years. NQF continues to assess the factors that may be contributing to the decline in comments (e.g., increase in endorsement activities across the 15 topic areas) and to identify strategies for promoting public and member engagement in this opportunity. In general, very few public comments are received during the pre-measure evaluation comment period, and most are received following the committee's deliberations on endorsement. The type of feedback varies, but comments often express general support or opposition for the standing committee's recommendation on a measure. Common themes highlighted in public comments from the CDP include concerns about a measure's specifications, exclusions, risk-adjustment methodology, and data sources. Comments also frequently address issues of implementation and possible burden on clinicians and other care providers.

Measure Submission Form

As part of NQF's measure evaluation criteria, measures are evaluated on use and usability. The use and usability section of the **measure submission form** aims to collect information on the extent to which potential audiences (e.g., consumers, purchasers, providers, policymakers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

Measure "Use" is now a must-pass criterion for maintenance measures. In particular, NQF asks developers to provide information on measures by those being measured or other users when[5]:

1. Those being measured have been given performance results or data, as well as assistance with interpreting the measure results and data
2. Those being measured and other users have been given an opportunity to provide feedback on the measure performance or implementation
3. This feedback has been considered when changes are incorporated into the measure

The information in this section typically includes summarized findings of technical expert panels, task forces, and developer-managed public comment periods. It may also incorporate feedback from other sources, such as CMS. The developer provides the information in the measure submission, so the submission may not include a comprehensive evaluation of how the measure is used in practice and all available feedback, especially if the measure is being used without the developer's knowledge. A comprehensive assessment of the Use and Usability criterion and opportunities for improving it and relevant submission items will be described in a subsequent report.

Feedback information is collected for consideration for endorsement in the evaluation of Importance to Measure and Report and Feasibility criteria. The Importance to Measure and Report criteria seeks to examine whether a measure is evidence-based and important to making significant gains in healthcare quality where there is variation in or overall less-than-optimal performance. One of the subcriteria within importance seeks to examine the performance gap. To evaluate this component, the developer is asked to submit feedback on performance scores from the measure in use. These data are used to help evaluators determine whether there is significant variation in performance among those being measured and gaps between high and low performers that would suggest ongoing measurement is warranted. The Feasibility Criteria seeks to assess the burden of implementing a measure. One of the subcriteria within feasibility focuses evaluators on the assessment of data collection burden. Measure developers are asked to submit feedback on the challenges identified through implementation or testing of the measure. The NQF measure submission form solicits feedback collected on data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, and any other related issues.

NQF Feedback Tool

NQF created an **online tool** designed to solicit feedback on endorsed measures from those using them in healthcare settings. The tool provides a channel for soliciting and receiving feedback on endorsed measures and for learning about implementation experiences from a wide variety of stakeholders. The tool can be accessed online through NQF's homepage, and stakeholders can submit feedback on one or multiple measures at once. The tool can also be accessed via NQF's **Quality Positioning System** (QPS) and allows users to provide feedback at any time about the use and usefulness of NQF-endorsed measures, from the individual measure's information page.

The NQF feedback tool was created as the successor to other "always-on" commenting tools that allowed NQF members and the public to submit feedback on measures at any time, even when those measures were not being evaluated as part of the CDP process. Prior to implementing the NQF feedback tool, there was another mechanism in place that consisted of a lengthy form, with several fields to fill (e.g., identifying the nature of the feedback, the stakeholder group of the commenter). Moreover, the tool could not be used to comment on multiple measures simultaneously, and feedback was communicated via e-mail to NQF staff and not available for public viewing. Owing to these limitations, NQF stakeholders

indicated that they had little reason to use the tool and the multiple required fields created undue burden to submit feedback. As a result, in 2016 NQF piloted and tested a new feedback tool with just one open text box field asking for measure feedback, which would be permanently associated with the measures on QPS. Offering one open prompt field, as opposed to multiple requests for specific information on measure use, was intended to reduce respondent burden when offering measure feedback.

Since early 2017, NQF has received only 19 feedback submissions via this tool. Information received from the feedback tool includes comments on exclusions and other aspects of measure specifications, as well as questions on NQF processes. Feedback has been submitted by health systems, advocacy groups, and specialty societies. The reasons for limited stakeholder engagement with the tool have not been thoroughly examined, but may stem from a lack of knowledge of the tool by measure end-users or lack of understanding as to how NQF processes the information and relays it to measure developers.

Feedback Derived from CMS Processes

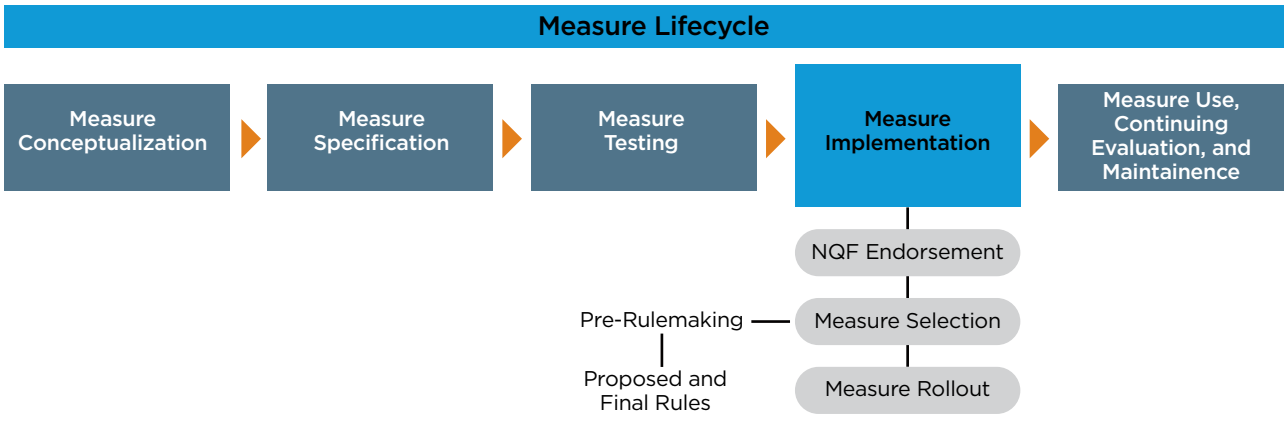
Public Comments Received during the Rulemaking Process

CMS uses a public comment process to ensure that measures are developed using a transparent process. The public comment period provides an opportunity for relevant stakeholders and other interested parties to provide input on specific proposals and measures. CMS notes that this process is designed to help provide critical suggestions that may have not been considered by the measure developer or technical expert panels (TEPs) convened during the measure development process.[6] During public comment periods, the public is encouraged to submit comments relevant to specific proposals and measures. For example, from February 28, 2019 to March 29, 2019, CMS held a call for public comments titled, "Overall Hospital Quality Star Rating on Hospital Compare Public Input Request."[7] CMS specifies the objectives of the project and the documents and measures for which they are seeking comment.

Following the public comment period, all public comments are posted on the CMS website along with a public comment summary report. Comments can be submitted online, by mail, or in person at certain locations.[8] Comments are published in final rules, including a summary of the comment and a CMS response. This feedback is incorporated into the measure selection process, and may influence measure implementation procedures (see Figure 2).

During this process CMS does receive comments that are not applicable to the specific proposal. Although these comments are not included in the summary of comments received during the call, if germane, CMS sends these comments to the measure steward or developer to consider for future updates to the measure.

FIGURE 2. RULEMAKING AS PART OF THE MEASURE LIFE CYCLE[9]



Impact Assessment of CMS Quality and Efficiency Measures Report[10]

CMS publishes an impact assessment **report** tri-annually. The report analyzes national measure performance trends, disparities, patient impact, and costs avoided. With the support of a multistakeholder technical expert panel and a Federal Assessment Steering Committee, CMS evaluates national system-level performance concerning quality measures. The objective of the report is to assess how quality and efficiency is impacted by the quality measures are used in CMS reporting programs. In addition, the report informs CMS, federal stakeholders, and patients on the progress on reaching CMS healthcare quality priorities. The data are received through a national electronic survey sent to hospitals and nursing homes. The responses are based a value-based score and hospital size. The methods for gathering the data used in the impact assessment survey were from a multistakeholder input, trend analysis, patient impact, costs avoided, disparities analysis, and a nationally representative survey of quality leaders.

The report acts as an advisory document on policy regarding measure development, selection, implementation, and gaps. The report also includes healthcare quality priorities, key indicators, estimated patient impact and prevented costs avoided associated with changes in performance rates, aggregate trends, and changes in quality improvement activities carried out by hospitals and nursing homes in response to the use of performance measures.

Quality Rating System (QRS) and Qualified Health Plan (QHP) Enrollee Experience Survey (QHP Enrollee Survey)

As a condition of the certification that allows QHP and Multi-State Plans (MSP) issuers to offer coverage through a Health Insurance Exchange (HIE), the issuers are required to submit QRS clinical measure data and QHP enrollee data to CMS. Using these data, CMS applies the QRS rating methodology to produce a quality rating on a 5-star rating scale.[11] CMS states that the goals of the QRS and QHP Enrollee Survey are to:

- Provide comparable and useful information to consumers about the quality of healthcare services and enrollee experience with QHPs offered through the Exchanges,
- Facilitate oversight of QHP issuer compliance with quality reporting standards set forth in the Patient Protection and Affordable Care Act and implementing regulations, and
- Provide actionable information that QHP issuers can use to improve quality and performance.[12]

The QHP quality rating information for 2019 will be available by the individual market open enrollment period 2020.

CMS Medicare Data Directories

Various healthcare facilities and providers submit quality measure data to CMS as a condition of participation in Medicare public quality reporting and performance value-based payment programs. In most cases, CMS publicly reports these quality measure data as a source of quantitative measure feedback about the quality of care at various healthcare facilities and providers for the public's benefit. These data are available online at CMS' Data.Medicare.gov website. This site provides eight data sets of official data from Medicare.gov Compare Websites and Directories related to quality reporting.[13] The eight data sets are:

1. **Hospital Compare**
2. **Nursing Home Compare**
3. **Physician Compare**
4. **Home Health Compare**
5. **Dialysis Facility Compare**
6. **Hospice Compare**
7. **Inpatient Rehabilitation Facility Compare**
8. **Long-Term Care Hospital Compare**

Each dataset contains quality measure performance data and information generated

from Medicare public quality reporting and value-based payment programs. CMS makes this information freely available to ensure that data are "readily available in open, accessible, and machine-readable formats." As illustrated in Table 2, each Compare site collects publicly reported information on varying sets of quality measures; each set has a specific level of analysis and schedule of updates. The sites are refreshed quarterly, but the data included in the refresh depends on the data collection period of the specific measure. For example, claims-based measures are updated annually, while eCQMs may be updated quarterly. As a result, some measures will not have new data included in the quarterly refresh.

Users have the ability to preview the results before they are posted publicly on the Compare site. The preview period is 30 days, and the process for accessing the report is specific to each Compare site. Users also have the ability to generate on-demand quality measure reports. The links to the user guides for accessing preview reports and user-generated quality reports for each Compare site are in Appendix C.

TABLE 2. CMS MEDICARE DATA DIRECTORY CHARACTERISTICS[14]

Repository	Description	Schedule of Data Directory Refreshes	Level of Analysis	Associated Costs to Access Data
Hospital Compare	Helps you find and compare information about the quality of care at over 4,000 Medicare-certified hospitals across the country	Quarterly	Facility; state; national	None
Nursing Home Compare	Allows you to find and compare quality-of-care information on every Medicare and Medicaid-certified nursing home in the country, including over 15,000 nationwide	Monthly	Facility; national	None
Physician Compare	Provides information about the physicians and other healthcare professionals currently enrolled in Medicare	Quarterly	Provider	None
Home Health Compare	Provides information about the quality of care provided by Medicare-certified home health agencies throughout the nation	Quarterly	Facility; state; national; patient	None
Dialysis Facility Compare	You can find and compare the services and the quality of care on Medicare-certified dialysis facilities nationwide	Quarterly	Facility; state; national; patient	None

Repository	Description	Schedule of Data Directory Refreshes	Level of Analysis	Associated Costs to Access Data
Hospice Compare	Helps you find and compare information about the quality of care provided by hospice agencies throughout the nation	Quarterly	Facility; national	None
Inpatient Rehabilitation Facility Compare	Allows you to find and compare the information about the quality of care of Medicare-certified inpatient rehabilitation facilities across the country	Quarterly	Facility; national	None
Long-Term Care Hospital Compare	Helps you find and compare information about the quality of care at Medicare-certified long-term hospitals across the country	Quarterly	Provider; national	None

JIRA's Measure Feedback Functionality

The HHS Office of the National Coordinator for Health Information Technology (ONC) hosts the publicly available web platform, JIRA, for measure users to report and discuss issues, ask questions, and provide comments on electronic clinical quality measures (eCQMs).[15] As measures are developed, CMS will solicit comments on measure concepts or measures via JIRA where members of the public have the ability to submit comments.[7] Measure users also have the ability to create an account and submit an issue or question regarding an eCQM to administrators and developers and log an issue or concern. The site administrators are able to reply directly to the concern or tag the issue for a subject matter expert or measure developer to respond to directly. Users also have the ability to search for issues and see if other users have already addressed their concern.[16] Developer representatives have noted that JIRA can be difficult to use as a forum for providing or soliciting feedback on measures that are not included in current CMS programs and that the interface makes it difficult to distinguish between new and existing measures open for feedback.

Feedback Collected by Measure Developers

Feedback on performance measure concepts, before the numerator and denominator have been defined, can help guide measure developers in focusing their efforts on furthering those concepts and may preemptively address unintended consequences. Researchers in one study developed a process for soliciting multistakeholder perspectives on the practice of using composite measures to simplify the public reporting of complex measures and to streamline performance incentives.[17] Measure developers have used TEPs, key informant interviews, and other methods of stakeholder outreach to solicit measure feedback early in the measure development process. During the web meetings, the Feedback Loop Committee highlighted several of these TEPs, such as the American Hospital Association Measures that Matter Collaborative, American College of Physicians Performance Measurement Committee, and the patient family advisory councils convened by several organizations.

Ongoing maintenance and periodic re-evaluations of performance measures also require information regarding how a measure is functioning post-implementation. Generally, feedback on performance measures is best leveraged by measure developers as part of their ongoing maintenance and re-evaluation processes, aimed at keeping their portfolio of measures current. However, many measure developers are not directly involved in measure implementation, and so they must rely on a third-party aggregator (generally the measure implementer) to coordinate feedback between end-users and the developers. Measure developers noted that measure feedback tends to emphasize negative consequences of having implemented a measure; however, positive feedback would help clarify which measures are most effective, and the field could emphasize and promote those measures. Table 3 lists a sample of measure reporting efforts from four nongovernment organizations that develop and implement NQF-endorsed measures. As illustrated in the table, there is variation in the amount of information on available performance data and costs associated with accessing the feedback and data.

TABLE 3. FEEDBACK COLLECTED BY MEASURE DEVELOPERS

Organization	Source	Schedule of Updates	Level of Analysis	Methods of Obtaining	Associated Costs to Access Data
The Joint Commission	Quality Check[18]	Annually	Facility	Download from website	Free
Leapfrog	Leapfrog Hospital Survey	Annually	Facility	Access through website	Free
NCQA	Quality Compass®: Benchmark and Compare Quality Data[19]	Annually	Clinician: group/practice; Clinician: group/practice; health plan; integrated delivery system; population	Request access from organization	Varies based on product and number of licenses: $1,995-$56,695
Society of Thoracic Surgeons	STS National Database[20]	Information not publicly available	Clinician: Individual; Clinician: group/practice; Facility	Request access from organization	Varies based on database, association with STS, and location: $250-$12,000

Performance Data Feedback from Clinical Data Registries

Clinical registries track information on the health status of patients and the care they receive over time, typically focusing on patients with a common disease or health condition. Registries are used to help inform patients and providers of health outcomes across patients and interventions, as well as to compare performance on healthcare quality, outcomes, and resource use across providers. Registries, such as qualified registries and quality clinical data registries (QCDRs) are increasingly used for accountability purposes, ensuring that provider payments are adjusted in response to performance on healthcare quality.

CMS defines a qualified registry as "an entity that collects clinical data from an individual MIPS-eligible clinician, group or virtual group and submits it to CMS on their behalf."[21] In order to become a QCDR or a qualified registry, the entity must self-nominate and successfully complete a qualification process. Qualified registries collect and report on measures limited to the measures that are finalized through notice-and-comment rulemaking, which also known as MIPS quality measures in the Merit-Based Incentive Payment System (MIPS) program. The 2019 CMS-Approved Qualified Registries lists included 135 qualified registries for use. The costs associated to access these registries vary based on factors such as size of provider group, organization size, and membership with association, and the costs include one-time fees and maintenance fees.[22]

QCDRs were initially established under the legacy Physician Quality Reporting System program, which was updated in The Medicare Access and CHIP Reauthorization Act (MACRA) in 2015. For the 2019 performance period of MIPS, CMS defines a QCDR as "an entity we approve that collects clinicians' clinical data for submission, such as regional collaboratives, large healthcare systems, and specialty societies." QCDRs differ from qualified registries because a QCDR is not limited to only MIPS measures.[23] The 2019 CMS-Approved QCDR list included 127 QCDRs for use.

In the CY 2019 Physician Fee Schedule Final Rule, CMS finalized a revised definition of a QCDR as "an entity with clinical expertise in medicine and in quality measure development that collects medical or clinical data on behalf of MIPS-eligible clinicians for the purpose of patient and disease tracking to foster improvement in the quality of care provided to patients."[24] The final rule further expands the definition of a QCDR to require clinical expertise in quality measurement and an understanding of the clinical medicine, evidence-based gaps in care, and opportunities for improvement in the quality of care delivered to patients, and priorities for MIPS-eligible clinicians.

Tools to Gather Measure Feedback

The scan identified several common tools used to gather feedback outside of the NQF process. In order to develop a meaningful and effective quality measure, a developer needs to collect feedback both prior to and following the implementation of the measure. Table 4 lists several examples of these tools.

TABLE 4. MEASURE FEEDBACK COLLECTION MECHANISMS

Tools used to gather information prior to measure implementation (measure development and testing):	• Key informant interviews and other targeted outreach • Measure developer expert panels to identify unintended consequences, evaluate measure concepts • Alpha (formative tests) and Beta testing (field testing)25 • Pilot test site visits (observe changes to workflow, re-test measures)
Tools used to gather information following measure implementation:	• Collaborative online tools (e.g., wikis) • Learning collaboratives • Site visits • Helpdesks owned by measure developers, quality innovation networks-quality improvement organizations (QIN-QIOs), registries • Surveys circulated to registry users • Annual public comment periods • Documentation of best practices for measure roll out and implementation

CHALLENGES

The scan identified several cross-cutting challenges that the Committee will seek to address as it develops a measure feedback loop pilot implementation plan.

Variation in Data Collection Processes

Currently, there is no single-source, formal system to collect feedback from providers. Aligning measures among the various organizations involved in quality of care (e.g., The Joint Commission, CMS, private payers) was also a concern expressed during the key informant interviews. Key informants noted that consolidating feedback can be challenging, given that feedback can be generated from a variety of different mechanisms, including some that may not be easily investigated for follow-up or when seeking clarifications, because they are not attributed to a particular individual or clinical site.

Multiple interviewees touched on the lack of a systematic method in which measure feedback is collected. In some instances, performance measure implementers have created formal tools to collect feedback from end-users of performance measures, generally concentrating on clinicians and quality officers. These tools generally require a substantial investment towards implementation, including costly site visits, surveys, and focus groups. Some feedback mechanisms are predicated on proactive input from clinicians and other end-users, such as learning collaboratives and online wikis. Other feedback mechanisms are ad-hoc, relying on end-users to approach the measure developer or implementer with questions or concerns about the measure's specifications. Many of these feedback tools are proprietary, or otherwise not easily accessible by the public.

The Committee also noted that the feedback data collection process will vary depending on the measure type (e.g., process, outcome) and data source (e.g., eCQM-based, chart-abstracted). In addition to the type of data received, the Committee noted the quality of data collected

should also be examined. However, collecting feedback after implementation can be challenging in the absence of meaningful incentives to encourage measure users to comment on their experience interpreting the measure result. In one initiative, physician engagement and buy-in were cited as critical efforts to secure an effective implementation of a suite of new performance measures. Despite the extensive documented outreach, a relatively low number of physicians accessed their confidential performance reports; outdated results and the absence of a particular incentive were cited as likely reasons for physician disengagement.[26]

Timing of Feedback

The timing of feedback, or the schedule in which information is received, was highlighted in the scan as a significant challenge. Key informants noted that much of the feedback that developers receive arrives too late in the development cycle to allow measure developers to respond appropriately or to implement suggested changes in a timely fashion. Timely performance data were also cited as critical in a review of the use of consumer survey data and other measures of patient experience.[27] Feedback received close to the time of implementation and endorsement is often not reflected in the final measure specifications. While there are multiple deadlines and periods within the measure lifecycle, these dates do not align. For example, when frontline physicians note updates in the clinical guidelines and diagnosis related groups (DRGs), this occurs too close to the time of measure roll out or endorsement. As a result, the most up-to-date guidelines are not incorporated in the measures being implemented, and providers are using measures based on obsolete guidelines. Further, this lack of an immediate, noticeable change in the measure may lead to disengagement and an unwillingness to provide feedback by measure implementers in the future.

In addition to issues with the schedule of information being released, the Committee and key informants noted that the process for collecting and processing feedback can be extremely lengthy, and some changes to measure specifications could require additional testing, which requires significant resources. For example, the CMS Impact Assessment Report, while comprehensive, is released only every three years.

Burden

Feedback loops are necessary to identify measures that lead to unintended consequences and undue burden. The Committee noted that an essential part of developing the feedback loop will be to identify measures that are meaningful to their practices of care. Often clinicians do not perceive that the benefit of the measure outweighs the burden. A survey of surgeons participating in the American College of Surgeons' National Surgical Quality Improvement Program found consistent awareness of the quality metrics used in the program; however, only half agreed that the measure set was "worthwhile" to implement, with a majority finding fault with measures of mortality rates and case volumes as proxies of high-quality care.[28] Another study of focus group data found that clinician participants providing feedback on measure sets emphasized that measures should target areas of medicine with clear consensus on the evidence, focusing on chronic conditions with high prevalence. These participants cautioned against measures that place additional documentation burden on providers, or those measures that only reflect attestation or other "check the box" type processes.[29]

Key informants noted that collecting feedback to determine if a measure is meaningful and without unintended consequences is a challenge. Many effects cannot be identified until a measure has been implemented. For example, hospital readmissions measures, now years into their implementation in the CMS Five-Star Quality Rating System, have received feedback from providers and researchers alike suggesting possible unintended consequences affecting

mortality rates and possible biases in the measure results.[30]

Committee members noted that the solicitation and provision of feedback could be better organized through a community vehicle, so that stakeholders do not receive one-off requests or need to navigate multiple pathways to provide feedback. Committee members noted that the information provided directly to measure developers could also have some benefit to the wider measurement community—and should also be shared more broadly. An increased understanding of where to find and send measure feedback would help stakeholders share important information more efficiently and effectively. In turn, this could result in the ability of stakeholders to address the unintended consequences and could reduce the burden related to measurement activities.

NEXT STEPS

The Committee will use the environmental scan to inform the next deliverables. The Measure Feedback Loop Committee will convene in April and May 2019 to review and discuss the NQF CDP Use and Usability criteria in the CDP. In conjunction with the environmental scan, these documents will inform the Committee's future recommendations for the options and implementation plan for a measure feedback loop pilot. A full list of the meeting dates can be found on the **Measure Feedback Loop project webpage**.

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APPENDIX A:
Literature Review Results

Title	Author	Link	Search terms	Theme
US Physician Practices Spend More Than $15.4 Billion Annually to Report Quality Measures	Casalino LP, et al.	https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2015.1258	Reporting	Background
Observations from the Field: Reporting Quality Metrics in Health Care	Dunlap NE, et al.	https://nam.edu/wp-content/uploads/2016/07/Observations-from-the-Field-Reporting-Quality-Metrics-in-Health-Care.pdf	Reporting	Clinician Feedback and Perspectives on Performance Measures
"Meaningful" clinical quality measures for primary care physicians	Litvin CB, Ornstein SM, Wessell AM, Nemeth LS	https://www.ncbi.nlm.nih.gov/pubmed/26619060	Burden	Clinician Feedback and Perspectives on Performance Measures
Hospital Perceptions of Medicare's Sepsis Quality Reporting Initiative	Barbash IJ, Rak KJ, Kuza CC, Kahn JM	https://www.ncbi.nlm.nih.gov/pubmed/29236094	Feedback	Clinician Feedback and Perspectives on Performance Measures
Improving Care With a Portfolio of Physician-Led Cancer Quality Measures at an Academic Center	Porter JB, et al.	https://www.ncbi.nlm.nih.gov/pubmed/28727487	Feedback	Clinician Feedback and Perspectives on Performance Measures
Attitudes of hospital leaders toward publicly reported measures of health care quality.	Lindenauer PK, et al.	https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/1910548	Reporting	Clinician Feedback and Perspectives on Performance Measures
Surrounded by quality metrics: what do surgeons think of ACS-NSQIP?	Neuman HB, Michelassi F, Turner JW, Bass BL	https://www.ncbi.nlm.nih.gov/pubmed/?term=19081472	Reporting	Clinician Feedback and Perspectives on Performance Measures
Quality Measures: A Stakeholder Analysis	Baernholdt M, Dunton N, Hughes RG, Stone PW, White KM	https://www.ncbi.nlm.nih.gov/pubmed/28915223	Burden	Clinician Feedback and Perspectives on Performance Measures Patients and Family Caregivers Feedback and Perspectives on Performance Measures
Quality indicators in intensive care medicine: why? Use or burden for the intensivist	Braun JP, et al.	https://www.ncbi.nlm.nih.gov/m/pubmed/21063472/	Burden	Findings not relevant or duplicative
Measuring quality of care: considering measurement frameworks and needs assessment to guide quality indicator development.	Stelfox HT, Straus SE	https://www.ncbi.nlm.nih.gov/pubmed/24018344	Burden	Findings not relevant or duplicative

Title	Author	Link	Search terms	Theme
Making Measurement Matter	Fihn SD	https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2688534?resultClick=1	Clinician Burnout	Findings not relevant or duplicative
Orchestrating Excellence	Golub RM	https://jamanetwork.com/journals/jama/article-abstract/1104283?resultClick=1	Clinician Burnout	Findings not relevant or duplicative
Audit and Feedback: Effects on Professional Practice and Healthcare Outcomes	Ivers N, et al.	https://www.ncbi.nlm.nih.gov/pubmed/22696318	Clinician Burnout	Findings not relevant or duplicative
Effect of an Automated Patient Dashboard Using Active Choice and Peer comparison Performance Feedback to Physicians on Statin Prescribing: The PRESCRIBE Cluster Randomized clinical Trail	Ivers N, et al.	https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2688535?utm_source=TrendMD&utm_medium=cpc&utm_campaign=JAMA_Network_Open_TrendMD_1	Clinician Burnout	Findings not relevant or duplicative
Growing Literature, Stagnant Science? Systematic review, meta-regression and cumulative analysis of audit and feedback interventions in health care	Ivers NM, et al.	https://www.ncbi.nlm.nih.gov/pubmed/24965281	Clinician Burnout	Findings not relevant or duplicative
Feasibility and acceptability of electronic symptom surveillance with clinician feedback using the Patient-Reported Outcomes version of Common Terminology Criteria for Adverse Events (PRO-CTCAE) in Danish prostate cancer patients	Baeksted C, et al.	https://www.ncbi.nlm.nih.gov/pubmed/29757324	Clinician Dashboard	Findings not relevant or duplicative
The Future of Quality Measurement for Improvement and Accountability	Conway PH, Mostashari F, Clancy C	https://jamanetwork.com/journals/jama/article-abstract/1693896?resultClick=1	Clinician Dashboard	Findings not relevant or duplicative
Patient and healthcare provider views on a patient-reported outcomes portal	Cronin RM, et al.	https://www.ncbi.nlm.nih.gov/pubmed/30239733	Clinician Dashboard	Findings not relevant or duplicative
The Impact of Visualization Dashboards on Quality of Care and Clinician Satisfaction: Integrative Literature Review	Khairat SS, Dukkipati A, Lauria HA, Bice T, Travers D, Carson SS	https://www.ncbi.nlm.nih.gov/pubmed/29853440	Clinician Dashboard	Findings not relevant or duplicative
The Use of Individual Provider Performance Reports by US Hospitals	Rolnick JA, Ryskina KL	https://www.ncbi.nlm.nih.gov/pubmed/29419821	Clinician Dashboard	Findings not relevant or duplicative

Title	Author	Link	Search terms	Theme
Usability Evaluation and Implementation of a Health Information Technology Dashboard of Evidence-Based Quality Indicators	Schall MC Jr, Cullen L, Pennathur P, Chen H, Burrell K, Matthews G	https://www.ncbi.nlm.nih.gov/pubmed/28005564	Clinician Dashboard	Findings not relevant or duplicative
Impact of a quality-assessment dashboard on the comprehensive review of pharmacist performance	Trinh LD, Roach EM, Vogan ED, Lam SW, Eggers GG	https://www.ncbi.nlm.nih.gov/pubmed/28842521	Clinician Dashboard	Findings not relevant or duplicative
Electronic Health Records: A Guide for Clinicians and Administrators	Hornberger J	https://jamanetwork.com/journals/jama/article-abstract/183139?resultClick=1	Clinician Experience	Findings not relevant or duplicative
How to Use Online Clinician Rating Systems	Razmaria AA, Livingston EH	https://jamanetwork.com/journals/jama/fullarticle/2449187?resultClick=1	Clinician Experience	Findings not relevant or duplicative
Patient-Reported Outcomes-Are They Living Up to Their Potential?	Baumhaur JF	https://www.nejm.org/doi/full/10.1056/NEJMp1702978	Clinician Satisfaction	Findings not relevant or duplicative
Advancing Public Reporting Through a New 'Aggregator' To Standardize Data Collection On Providers' Cost and Quality	Luft HS	https://www.healthaffairs.org/doi/10.1377/hlthaff.2011.1162	Clinician Satisfaction	Findings not relevant or duplicative
Six Challenges in measuring The Quality of Health Care	McGlynn EA	https://www.healthaffairs.org/doi/10.1377/hlthaff.16.3.7	Clinician Satisfaction	Findings not relevant or duplicative
American College of Surgeons National Surgical Quality Improvement Program Pediatric: a beta phase report	Bruny JL, et al.	https://www.ncbi.nlm.nih.gov/pubmed/?term=23331796	Data collection	Findings not relevant or duplicative
A systematic review of the cost of data collection for performance monitoring in hospitals	Jones C, Gannon B, Wakai A, O'Sullivan R	https://www.ncbi.nlm.nih.gov/pubmed/25875828	Data collection	Findings not relevant or duplicative
Do Experts Understand Performance Measures? A Mixed-Methods Study of Infection Preventionists	Govindan S, Wallace B, Iwashyna TJ, Chopra V	https://www.ncbi.nlm.nih.gov/pubmed/?term=29202884	Feedback	Findings not relevant or duplicative
Time for Transparent Standards in Quality Reporting by Health Care Organizations	Pronovost PJ, Wu AW, Austin JM	https://www.ncbi.nlm.nih.gov/pubmed/?term=28783820	Feedback	Findings not relevant or duplicative
Tailoring an educational program on the AHRQ Patient Safety Indicators to meet stakeholder needs: lessons learned in the VA	Shin MH, et al.	https://www.ncbi.nlm.nih.gov/pubmed/29444671	Feedback	Findings not relevant or duplicative

Title	Author	Link	Search terms	Theme
Catalyzing healthcare transformation with digital health: Performance indicators and lessons learned from a Digital Health Innovation Group	Tseng J, Samagh S, Fraser D, Landman AB	https://www.ncbi.nlm.nih.gov/pubmed/28958850	Feedback	Findings not relevant or duplicative
Building the foundation to generate a fundamental care standardised data set	Jeffs L, Muntlin Athlin A, Needleman J, Jackson D, Kitson A	https://www.ncbi.nlm.nih.gov/pubmed/29446500	Impact of quality improvement	Findings not relevant or duplicative
Health Plan Accountability and Reporting: Issues and Challenges	Roper WL, Cutler CM	https://www.healthaffairs.org/doi/10.1377/hlthaff.17.2.152	Implementation Issues	Findings not relevant or duplicative
Patient Relations Measurement and Reporting to Improve Quality and Safety: Lessons from a Pilot Project	Sullivan-Taylor P, Frohlich R, Greenberg A, Beckett M	https://www.ncbi.nlm.nih.gov/pubmed/?term=30051811	Performance measure results	Findings not relevant or duplicative
Bariatric Surgery Registries: Can They Contribute to Improved Outcomes?	Brown WA, MacCormick AD, McNeil JJ, Caterson ID	https://www.ncbi.nlm.nih.gov/pubmed/29076029	qualified clinical data registry	Findings not relevant or duplicative
Measuring quality of urology care using a qualified clinical data registry	Gadzinski AJ, Cooperberg MR	https://www.ncbi.nlm.nih.gov/pubmed/29847522	qualified clinical data registry	Findings not relevant or duplicative
Clinical registries and quality measurement in surgery: a systematic review	Stey AM, Russell MM, Ko CY, Sacks GD, Dawes AJ, Gibbons MM	https://www.ncbi.nlm.nih.gov/pubmed/25616951/	qualified clinical data registry	Findings not relevant or duplicative
Improving Quality Through Clinical Registries in Urology	Tyson MD, Barocas DA	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5567830/	qualified clinical data registry	Findings not relevant or duplicative
Development of a Quality Dashboard Utilizing Cancer Registry Data	Bisel D	https://www.ncbi.nlm.nih.gov/pubmed/29611902	Registry	Findings not relevant or duplicative
Developing the first Bi-National clinical quality registry for burns--lessons learned so far	Watterson D, Gabbe BJ, Cleland H, Edgar D, Cameron P, Members of the Bi-NBR Steering Committee	https://www.ncbi.nlm.nih.gov/pubmed/22079623	Registry	Findings not relevant or duplicative
The Use of Clinical Registries in the United States: A Landscape Survey	Blumenthal S.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5994955/	Reporting	Findings not relevant or duplicative
A systematic review of the impact of routine collection of patient reported outcome measures on patients, providers and health organisations in an oncologic setting	Chen J, Ou L, Hollis SJ	https://www.ncbi.nlm.nih.gov/pubmed/23758898	Reporting	Findings not relevant or duplicative

Title	Author	Link	Search terms	Theme
Using hospital standardized mortality ratios for public reporting: a comment by the consortium of chief quality officers	Consortium of Chief Quality Officers	https://www.ncbi.nlm.nih.gov/pubmed/19033214	Reporting	Findings not relevant or duplicative
Counterpoint: How Quality Reporting Made Me a Worse Doctor	Hahn DL	https://www.ncbi.nlm.nih.gov/pubmed/28483884	Reporting	Findings not relevant or duplicative
Effects of a team-based assessment and intervention on patient safety culture in general practice: an open randomised controlled trial	Hoffmann B, et al.	https://www.ncbi.nlm.nih.gov/pubmed/23955468	Reporting	Findings not relevant or duplicative
Physician and Patient Views on Public Physician Rating Websites: A Cross-Sectional Study	Holliday AM, Kachalia A, Meyer GS, Sequist TD	https://www.ncbi.nlm.nih.gov/pubmed/28150098	Reporting	Findings not relevant or duplicative
Publicly reported quality-of-care measures influenced Wisconsin physician groups to improve performance	Lamb GC, Smith MA, Weeks WB, Queram C	https://www.ncbi.nlm.nih.gov/pubmed/23459733	Reporting	Findings not relevant or duplicative
Point: How Quality Reporting Made Me a Better Doctor	Scrase DR	https://www.ncbi.nlm.nih.gov/pubmed/28483883	Reporting	Findings not relevant or duplicative
Dashboard report on performance on select quality indicators to cancer care providers	Stattin P, et al.	https://www.ncbi.nlm.nih.gov/pubmed/26162012	Reporting	Findings not relevant or duplicative
Using "roll-up" measures in healthcare quality reports: perspectives of report sponsors and national alliances	Cerully JL, et al.	https://www.ncbi.nlm.nih.gov/pubmed/28817297	Feedback	Findings not relevant or duplicative
The Nursing Home Compare Report Card: Perceptions of Residents and Caregivers Regarding Quality Ratings and Nursing Home Choice	Schapira MM, Shea JA, Duey KA, Kleiman C, Werner RM	https://www.ncbi.nlm.nih.gov/pubmed/26867949	Data collection	Patients and Family Caregivers Feedback and Perspectives on Performance Measures
Assessing the utility of consumer surveys for improving the quality of behavioral health care services	Koch JR, Breland AB, Nash M, Cropsey K	https://www.ncbi.nlm.nih.gov/pubmed/?term=20333475	Performance measure results	Patients and Family Caregivers Feedback and Perspectives on Performance Measures
Public reporting in health care: how do consumers use quality-of-care information? A systematic review	Faber M, Bosch M, Wollersheim H, Leatherman S, Grol R	https://www.ncbi.nlm.nih.gov/pubmed/19106724	Reporting	Patients and Family Caregivers Feedback and Perspectives on Performance Measures

Title	Author	Link	Search terms	Theme
Measuring The Performance Of Individual Physicians By Collecting Data From Multiple Health Plans: The Results Of A Two-State Test	Higgins A, Zeddies T, Pearson SD	https://www.healthaffairs.org/doi/10.1377/hlthaff.2011.0070	Clinician Dashboard	Pre- and Post-Implementation Measure Feedback
Reconsidering Hospital Readmission Measures	Pronovost PJ, Brotman DJ, Hoyer EH, Deutschendorf A	https://www.ncbi.nlm.nih.gov/pubmed/29236100	Feedback	Pre- and Post-Implementation Measure Feedback
Multistakeholder perspectives on composite measures of ambulatory care quality: a qualitative descriptive study	Martsolf GR, Scanlon DP, Christianson JB	https://www.ncbi.nlm.nih.gov/pubmed/?term=23625664	Reporting	Pre- and Post-Implementation Measure Feedback

APPENDIX B:
Operational Definitions of Key Terms

Term	Operational Definition
Measure feedback	Information received or solicited on a measure following its implementation related to performance rates, measure feasibility, or use and usability of the measure, including unintended consequences
Performance rate	Measure output
Registries	Systems for keeping official records of health processes or outcomes
Unintended consequences	A set of results due to measure implementation that was not intended as an outcome
Implementation	A specified set of activities designed to put into practice an activity or program of known dimensions
Feasibility	Extent to which the specifications, including measure logic, required data that are readily available or could be captured without undue burden and can be implemented for performance measurement
Dashboard	An information management tool that visually tracks, analyzes, and displays performance indicators, metrics, and key data points.
Use and Usability	Extent to which potential audiences (e.g., consumers, purchasers, providers, policymakers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations
Patient-reported outcomes	Any report of the status of a patient's health condition that comes directly from the patient, without interpretation of the patient's response by a clinician or anyone else

APPENDIX C:
Quality Report User Guides for CMS Data Compare Sites

Repository	Link to Guide
Hospital Compare	• Inpatient Quality Reporting Hospital Compare Preview Report Help Guide • Inpatient Psychiatric Facility Quality Reporting Hospital Compare Preview Help Guide • Outpatient Quality Reporting Hospital Compare Preview Report Help Guide • PPS-Exempt Cancer Quality Reporting Hospital Compare Preview Report Help Guide
Nursing Home Compare	• CASPER Reporting User Guide for MDS Providers
Physician Compare	• Physician Compare Preview Period User Guide
Home Health Compare	• CASPER HHA Reporting User's Manual
Dialysis Facility Compare	• Guide to the Quarterly Dialysis Facility Compare – Preview Report for April 2019 Refresh
Hospice Compare	• CASPER – Hospice Reporting User's Guide
Inpatient Rehabilitation Facility Compare	• CASPER – IRF-PA Reporting User's Manual
Long-Term Care Hospital Compare	• CASPER Reporting LTCH Provider User's Guide

APPENDIX D:
Key Informant Interview Guide

Topic	Questions/Discussion Guidance
Introductions/welcome	• NQF staff introductions • Interviewee introductions • Brief description of your role and responsibilities in your current position(s): – Organization affiliations, department/division description – Organization type/stakeholder category – Region – Population served – Key responsibilities
Purpose and overview of interview (NQF Staff)	• Brief NQF Overview • Brief Project Description • Purpose of interview /What we hope to learn • Interview Overview
Experience with collecting measure feedback	• What kinds of measures are you receiving feedback on? Process, Outcomes, Patient-Reported Outcomes (PROs), Claims, Chart, eCQM? Were those measure specifications varied in any way? • What platforms or tools are you using to collect data/feedback, and from whom does the data/feedback originate? • What are the characteristics of the data/feedback you are collecting, e.g. qualitative, quantitative? • How often are you collecting data/feedback, and what is the approximate volume of feedback collected? • How is this data/feedback compiled, and presented to internal and external stakeholders? • How has feedback informed your quality improvement efforts? Has feedback on unintended consequences affected your measure design and revision process? • How do you plan to spur further measure feedback?
Experience with receiving and acting on measure feedback (measure developers)	• What are the characteristics of the data/feedback you are receiving, e.g., qualitative, quantitative? • How has feedback informed your measure development efforts? • How do you communicate unintended consequences of measure implementation? • Have you received feedback concerning the burden of measure implementation, particularly concerns around implementing electronic clinical quality measures?

Topic	Questions/Discussion Guidance
Experience giving feedback	• What kinds of measures are you offering feedback on? Process, Outcomes, PROs, Claims, Chart, eCQM? Were those measure specifications varied in any way? • How do you elevate concerns about performance measures affect your relationship with your physician? • What data elements used in performance measures are most burdensome for you to note in the Electronic Health Records (EHR)? • What might make you more likely to offer feedback?
Challenges & strategies	• Measure feedback loops have been advanced in many different forms and with many different organizations, with no standard model emerging. What do you see as the major barriers that have prevented more widespread development and implementation of a standard feedback loop process? – What strategies and/or resources are needed to overcome these barriers?
Gaps in knowledge, evidence, organizational needs	• What elements of a proposed feedback loop are most important for us to clearly define in order to maximize the chances of implementation, and applicability to your work?

APPENDIX E:
Key Informant Interviewees

Name	Title	Organization
Heidi Bossley, MSN, MBA	Consultant	Various
Tina Burt, ANP-C	Executive Director of Quality	Arnot Health
Missy Danforth	Vice President of Health Care Ratings	The Leapfrog Group
Carol Dietz, RN, MBA	State Director of New England; Consultant Director	Qualidigm
Tricia Elliot, MBA, CPHQ	Director of Quality Measurement	The Joint Commission
Jana Malinowski	Lead Solutions Strategist	Cerner Corporation
Susan Sheridan, MBA, MIM, DHL	Director of Patient Engagement	Society to Improve Diagnosis in Medicine (SIDM)
Samantha Tierney, MPH	Senior Director of Measurement Science	Physician Consortium for Performance Improvement (PCPI)

APPENDIX F:
Measure Feedback Loop Committee and NQF Staff

COMMITTEE

Rose Baez, RN, MSN, MBA, CPHQ, CPPS (Co-chair)
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Claire Noel-Miller, MPA, PhD
AARP
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Sue Sheridan, MIM, MBA
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Washington, District of Columbia

Koryn Rubin, MHA
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Elizabeth Rubinstein
Henry Ford Health System
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Sara Toomey, MD, MPhil, MPH, MSc
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Katherine McQueston, MPH
Senior Project Manager

Jean-Luc Tilly
Senior Manager, Data Analytics

Madison Jung
Project Manager

Navya Kumar, MPH
Project Analyst

APPENDIX G:
Public Comments

Thomas Ross
Alliance of Dedicated Cancer Centers

The Alliance of Dedicated Cancer Centers (ADCC), comprised of several of the nation's premier cancer hospitals, commends for this exercise. With our experience as both a measure developer and as participants who submit data to the CMS PPS-Exempt Cancer Hospital Quality Reporting (PCHQR) program, we appreciate this opportunity to comment. We applaud both the NQF and CMS for instituting measurement development cycles that offer the opportunity for measure feedback, with the intent of improving the scientific rigor of quality measures.

In both the NQF endorsement and CMS rule-making processes, feedback is currently provided to the measure developer after the measure is submitted. Ideally, constructive comments involving non-substantive issues or requests for clarification would be provided to the measure developer during the measure review process, with the option for the developer to address the concerns or provide clarification during the current review cycle rather than waiting until the next submission cycle. This "rapid cycle" feedback and response would allow for at least some measures to receive NQF endorsement and/or be incorporated into programs in a more efficient and timely manner.

As the Draft Report notes, once a measure is endorsed and/or added to the NQF portfolio of endorsed measures, there are several sources for measure feedback. The Report notes that the NQF Feedback Tool has received 19 submissions in approximately two years. Perhaps education regarding the availability of this tool could be pushed out to providers, institutions, and professional organizations impacted by recently implemented measures.

We have found the Impact Assessment of CMS Quality and Efficiency Measures report to be a useful resource in assessing the overall landscape of measures. In addition, the CMS data repositories cited in the report provide value to measure developers via the display of quantitative data; however, the usefulness of this data is highly dependent upon the display format and the ease of viewing comparative data between institutions/providers. Specific to the PCHQR program, the data is difficult to access, view and compare in a meaningful way for healthcare quality staff, let alone lay people such as patients and their caregivers.

Although we use JIRA to submit measures for CMS' consideration for use in the PCHQR program, we have not found it to be useful as a forum for providing or soliciting feedback given that eCQMs are not included in PCHQR.

Lastly, additional sources of end-user feedback on quality measures that were not mentioned in the Draft Report but you may wish to consider include the questions, FAQs, and educational activities of the CMS program Support Contractors. We will submit this as an addition source of feedback to consider.

The CMS Support Contractors that provide support to the hospitals, institutions, providers and other organizations that report quality data to CMS may prove to be an excellent source of feedback for measure developers. These Support Contractors get questions via QualityNet, email and telephone from end users that oftentimes are questions about measure specifications and collecting data. Furthermore, many of the Support Contractors compile FAQs addressing the most commonly asked questions. Lastly, they develop educational activities to equip those involved in collecting and reporting quality data to their respective CMS program(s). In many cases, the Support Contractors are the frontline connection to those implementing and using the measures in the field, and thus may prove to be a rich source of information in this endeavor.

Aniek Valentine
Cerner Corporation

I appreciate the opportunity to comment on the measure CMS/NQF measure development process.

Feedback derived from NQF Processes: I would ask NQF to review the open comment review cycle dates for the MUC list. The MUC list is released during the Holiday time period in December which makes it challenging to allow ample time to review both internally within our organization as well as with our client base. If the review cycle period were extended further into January, it would allow for more extensive review.

Feedback derived from CMS Processes: Our organization frequently provides feedback through the CRP process in ONC JIRA. We appreciate receiving email updates with newly added JIRAS throughout the review cycle, however, it would be helpful to have visibility to a dashboard within ONC JIRA that would categorize new vs existing CRP JIRAs open for review.

Thank you for your consideration.

Stephanie Vomvouras
Health Care Service Corporation

I agree with the document. A few other comments below.

- Support efforts that ensure that measures have the intended consequence of improving quality and ensure that the measures provides high and durable value.
- Support efforts to address gaps related to multiple sources of measure feedback, consolidation
- Important to understand how stakeholders use/want to use measures to influence quality improvement, so as to avoid unintended consequences if measures or changed or retired.

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