

U.S. Department of Health and Human Services

**Office of the National Coordinator for
Health Information Technology**



**Summary of Public Comments on
Clinical Quality Measures Concepts
for Stage 2 and Stage 3 Meaningful Use**

January 19, 2011

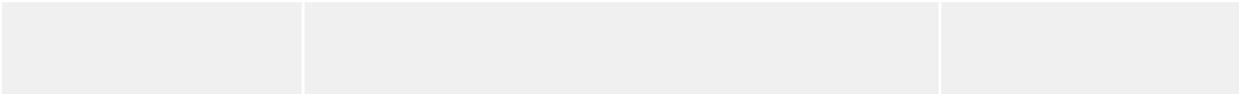
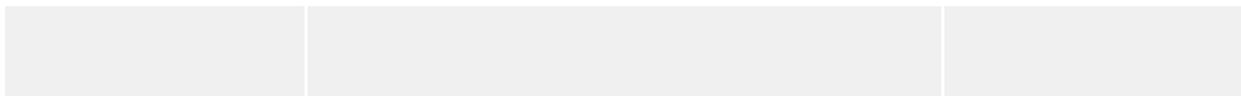




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1.0 Introduction

The Quality Measures Workgroup is one of seven workgroups within the Office of the National Coordinator for Health Information Technology (ONC)'s Health IT Policy Committee that provided guidance on quality measure prioritization and the quality measure convergence process pertaining to measure gaps and opportunities for Stage 2 and Stage 3 Meaningful Use. The Quality Measures Workgroup (Workgroup) is currently developing recommendations on clinical quality measures for Stage 2 and Stage 3 Meaningful Use. These recommendations will align to the following five measure domains, which broadly align with the National Priorities Partnership Framework for health quality, and the Meaningful Use pillars: Patient and Family Engagement, Clinical Appropriateness/Efficiency, Care Coordination, Patient Safety, and Population and Public Health.

To inform recommendations for Stage 2 and Stage 3 Meaningful Use measures, the Workgroup identified 41 measure concepts aligned to the five domains and 17 corresponding sub-domains (see Appendix A for a detailed listing of measure concepts and their descriptions) and sought public comment on these measure concepts, including specific examples of measures that align to each measure concept. ONC posted their request for comment (RFC) to the Federal Advisory Committee Blog site from December 6, 2010 through December 31, 2010. The public had the opportunity to respond to six questions (see Exhibit 1 for questions) for each of the 41 measure concepts using an online tool developed by the Altarum Institute. ONC contracted with Booz Allen Hamilton (Booz Allen) to produce this summary of the public's comments.

Exhibit 1: Request for Comment Questions

	Question
1	<ul style="list-style-type: none"> a) Please provide and explain examples of measures relevant to this measure concept that are health IT-sensitive, ready for use, and endorsed by a consensus entity. b) Please provide and explain examples of measures relevant to this measure concept that are health IT-sensitive, ready for use, but NOT endorsed by a consensus entity. c) Please provide and explain examples of measures that are well-established (developed with claims-based data) but need significant adaptation and testing for a health IT environment. d) Please provide and explain examples of new measures (aspiration measures) relevant to this concept that could be developed if there are no existing measures.
2	Please provide and explain examples of measures relevant to this concept that effectively address multiple measure concept areas or are cross-cutting in nature.
3	Please provide comments on how these measures can: a) address health disparities and/or b) reduce burden of disease in populations.
4	Please provide comments on how these measures can support assessing change in outcomes, including cross-cutting measures of risk status and functional status.
5	Please provide comments on how these measures can support longitudinal assessment of care and shared accountability across providers and sites of care for multiple conditions.
6	Please provide any additional comments.



The remainder of document is organized as follows:

- **Section 2.0** provides an overview of the methods used to analyze the responses
- **Section 3.0** provides an overview of the respondents who submitted responses
- **Section 4.0** presents findings based on tool-submitted responses, by question
- **Appendix A** includes a listing and description of the RFC measure concepts
- **Appendix B** includes a listing of the organizations and individuals that submitted a response to RFC
- **Appendix C** includes the measure recommendations per responses to Questions 1 and 2
- **Appendix D** includes measure concept feedback and measure recommendations per responses to Question 6
- **Appendix E** includes a summary of email and blog responses

2.0 Methods

Four key steps were used to analyze the comments: 1) development of analysis plan and tool; 2) catalogue and synthesis of comments received via the online tool; 3) summary of comments received through other mechanisms; and 4) summary report development.

1. **Development of Analysis Plan and Tool.** The first step entailed development of the analytic plan and Excel-based analysis tool for reviewing and synthesizing the comments.
2. **Catalogue and Synthesis of Comments Received via Online Tool.** Next, responses were exported from the online tool into the analysis tool, to include information identifying the respondent and the comments provided for each question. Comments for Questions 1 and 2 were reviewed to identify measure recommendations. Measure recommendations were harmonized across respondents to facilitate an understanding of the frequency of recommendations. In addition, Questions 1 and 2 comments were synthesized to identify any key themes beyond the measure recommendations. Comments for Questions 3 through 6 were also synthesized to identify recurring themes in response to each question. All findings based on tool-submitted comments are included in Section 4.0.
3. **Summary of Comments Received through other Mechanisms.** In addition to the comments received from the online tool, ONC received comments from the public directly via email as well as on the ONC blog. In cases where respondents submitted comments via the online tool in addition to through email or blog, only the tool-based comments were synthesized, unless otherwise noted in Appendix B. It is recommended that ONC directly review the comments received via email or blog if additional information is desired beyond the summary of tool-based comments in Section 4.0. In cases where respondents only submitted comments via email or blog, each comment submission was summarized in Appendix E. A summary format was utilized for these comments because they did not necessarily map to the RFC questions.



4. **Summary Report Development.** Once the catalogue, synthesis, and summary of all comments were completed, results were summarized in this report. A summary of the findings related to Questions 1 and 2 summaries are grouped together at the sub-domain level because they both requested recommendation on measures (See Section 4.1). Comments for Question 3, 4, and 5 are summarized separately, with each summary conducted at the sub-domain level (See Sections 4.2-4.5). Responses for Question 6 were summarized using multiple levels of summarization due to the varying focus of the comments received.

There were a number of data limitations, primarily stemming from the respondents' varying interpretation of the questions and how responses were entered through the online tool, which impacted this analysis. These limitations and the approach used for addressing them are included in Exhibit 2.

Exhibit 2: Data Limitations and Booz Allen's Approach for Addressing

Limitation	Approach to Addressing Limitation
Comments included typing errors, grammatical mistakes, and misspellings.	Original responses were not edited. When such errors limited the interpretation of the comment, best judgment was applied.
The first measure concept within the <i>Self Management/Activation</i> sub-domain generated the most responses. This may be a result of it being the first field in which a respondent could provide comment in the online tool used for the RFC.	Data were analyzed as entered to avoid unnecessary interpretation of respondent intent.
For Question 1, in a few instances, measures were recommended in response to seemingly inappropriate sub-questions. For example, a respondent may have recommended a measure that is endorsed and ready-for-use under Question 1d, which is the sub-question for aspirational measures.	Responses were not transferred to seemingly more appropriate sub-questions in order to avoid unnecessary interpretation of respondent intent. Additional research was not conducted on the measure recommendations to assess accuracy of the response.
Responses to Questions 1, 2, and 6 included recommendations on specific measures in addition to highly general measure recommendations or measure concepts.	<p>For Questions 1 and 2, the names of measure recommendations were harmonized using available expertise and knowledge of the quality measures environment. Harmonized measure names have been largely generalized but do sometimes reflect specific rates or populations or measure names as specified by a particular measure developer. Specific measure developer and industry references are provided so that further detail about the recommended measures may be obtained.</p> <p>For Question 6, due to resource constraints and the fact that this question and analysis plan for this question were not designed for measure recommendations, measure recommendations were not harmonized but instead reflect the name/description cited by the respondent.</p>
Based on responses to Question 2, there seemed to be different interpretations by respondents of the term "cross-	Given the variation in responses for Question 2, minimal analysis (beyond measure name listing and counts) was performed.



Limitation	Approach to Addressing Limitation
cutting;" based on responses, it seemed that some interpreted this as cross-cutting across measure concepts, while others interpreted it as cross-cutting across care settings and providers.	
Responses to Questions 3-5 often did not include explicit reference to a measure; instead, respondents included general language indicating how measures address the question posed.	If a respondent recommended a measure for Question 1 or Question 2, it was assumed that the Question 3 response, for example, aligned to that measure(s). If the respondent did not recommend a measure for Question 1 or Question 2, it was assumed that the Question 3 response aligned to measures in general that would fall under that measure concept.
Some respondents submitted comments under Questions 4 and 5 that did not address the question, but instead included more general commentary or measure recommendations.	These comments, some of which included measure recommendations, were transferred to Question 6 to allow for more coherent analysis.
Some respondents used Question 6 as an opportunity to provide additional comments related to their responses in other questions, while others submitted all of their comments through this one question.	<p>Responses were not mapped back to the question they seemingly pertained to even if they addressed topics addressed in other questions in order to avoid unnecessary interpretation of respondent intent.</p> <p>Question 6 comments were summarized using varying levels of categorization, as deemed appropriate based on the synthesis of comments and identification of key themes.</p>
Comments received through mechanisms other than the online tool for submission did not lend themselves to easy categorization against the RFC questions.	Comments received through mechanisms other than the online tool were summarized on a response by response basis, with measure recommendations called out as appropriate.

3.0 Overview of Respondents that Submitted Comments

A total of 132 respondents – 110 organizations and 22 individuals not associated with an organization – responded to the RFC. Appendix B includes a listing of the respondents represented by the comments, and indication on the mechanism (Altarum tool, email, and/or blog) that the respondent used to submit comments. Of the total respondents, 85 organizations and 5 individuals not associated with an organization submitted comments using the online tool (*Note*: some of these respondents also submitted comments via email/blog). Twenty-five organizations and 17 individuals not associated with an organization submitted comments via email and/or blog only.



4.0 Public Comment Findings based on Online Tool Questions

The following sub-sections highlight summary findings and any recurring themes based on each of the six questions posed by ONC in their online tool.

4.1 Measures Identified and Summary of Comments for Question 1 and Question 2

Request for Comment – Question 1

- a) Please provide and explain examples of measures relevant to this measure concept that are health IT-sensitive, ready for use, and endorsed by a consensus entity.
- b) Please provide and explain examples of measures relevant to this measure concept that are health IT-sensitive, ready for use, but NOT endorsed by a consensus entity.
- c) Please provide and explain examples of measures that are well-established (developed with claims-based data) but need significant adaptation and testing for a health IT environment.
- d) Please provide and explain examples of new measures (aspiration measures) relevant to this concept that could be developed if there are no existing measures.

Request for Comment – Question 2

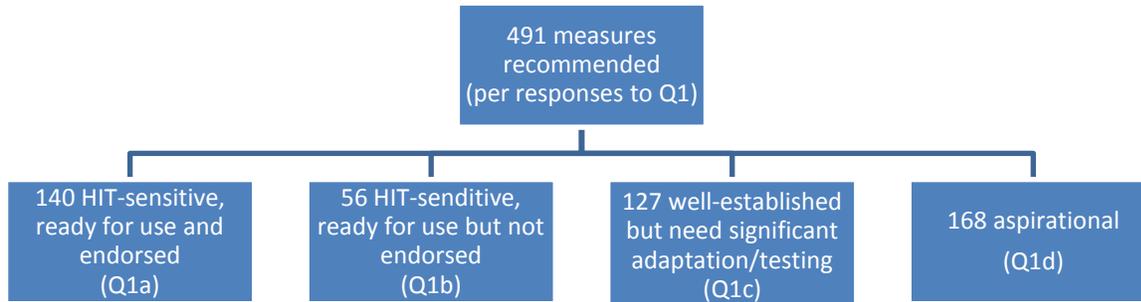
Please provide and explain examples of measures relevant to this concept that effectively address multiple measure concept areas or are cross-cutting in nature.

A total of 55 respondents submitted comments for Question 1 and/or Question 2. Of the Question 1a-1d sub-questions (“Q1a-Q1d”), Q1d (aspirational measures) generated the most responses on average.

Based on responses to Question 1 (Q1a-Q1d), a total of 491 measures were identified across the 41 measure concepts. Exhibit 3 below provides an overview of the measure counts associated with Question 1. In this exhibit, if a measure was recommended for multiple measure concepts in response to a single sub-question, it is only counted once. If a measure was recommended for multiple sub-questions, it is counted multiple times accordingly. For example, the 30-day Readmissions measure was recommended in response to Q1a; yet another respondent indicated the 30-day Readmissions measure for Q1d. As a result, this measure was included in the count for both Q1a and Q1d.



Exhibit 3: Number of Measures Recommended in Response to Question 1



In response to Question 2, there were 23 measures identified as addressing multiple measure concepts or being cross-cutting in nature. Some of these recommended measures overlapped with measures identified for Question 1; however, often a respondent entered a unique measure in response to Question 2, without identifying that measure under Q1a-Q1d.

More detailed information related to measure recommendations for both Questions 1 and 2 is included in Appendix C. The appendix includes the harmonized measure names for all measure recommendations; any reference to measure developer or industry reference as specified by the respondent; the number of measures associated with each measure concept, sub-domain, and domain; the number of respondents that recommended each measure (per measure concept); and indication as to whether the measure was recommended for Q1a-Q1d and Question 2.

A summary of the key themes identified for Questions 1 and 2, for each of the 17 sub-domains, is provided below. This summary encompasses both measure recommendations and additional commentary.

Sub-Domain: Self Management/Activation

A total of 43 unique measures¹ were recommended under this sub-domain, which involves two measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	7	10	10	28	0

The majority of measures recommended for this sub-domain were identified as aspirational measures (Q1d). Responses cited various chronic disease management measures that could

¹ The total measure count presented with each sub-domain summary represents unique measures only. If a single measure was recommended across multiple measure concepts within the same sub-domain or across sub-questions, it was only counted once. Thus, the count of measures under each sub-question will not sum to the total number of unique measures if there is any duplication across measure concepts or sub-questions.



be developed related to diabetes, dementia, depression, asthma, and heart failure. Types of aspirational measurement could involve patient education and counseling for the chronic condition, and whether the patient had an understanding about their condition and role in managing the condition. Though included in the aspirational category, several responses called out draft depression counseling and dementia counseling measures in development by the American Medical Association/Physician Consortium for Performance Improvement (AMA/PCPI). Responses also cited a number of measures that would assess a patient’s access to their clinical summary and completion of their health assessment.

Across all sub-questions, responses commonly suggested measures of patient activation by way of completion of health risk assessments or function assessments, patients’ understanding of their condition, and chronic disease management measures involving counseling and education of patients. A couple of responses recommended inclusion of the Agency for Health Care Research and Quality (AHRQ) Consumer Assessment of Healthcare Providers and Systems (CAHPS) measurement sets, specifically the CAHPS Clinician and Group Survey and the Health IT Survey, which respectively assess patients’ experiences with their providers, and patients’ experiences with health IT/assessing health IT capabilities that providers offer their patients. Responses also referenced function assessments dictated by the Centers for Medicare & Medicaid Services (CMS) Minimum Data Set (MDS), OASIS data set, and the Medicare Health Outcomes Survey. One respondent called attention to the Patient Activation Measure (PAM) Survey developed by Judith Hubbard of the University of Oregon, which helps determine how activated patients are in their care by assessing their skills, knowledge, beliefs, and behaviors. Another referenced patient knowledge, behavior, and status change measures included in the Omaha Documentation System and the Prochaska’s Stages of Change Ratings. In addition to the CMS C.A.R.E tool, the How’s Your Health? tool developed by John Wasson of Dartmouth University, and CMS’ OASIS data set were also recommended.

Sub-Domain: Honoring Patient Preferences and Shared Decision Making

A total of 35 unique measures were recommended under this sub-domain, which involves two measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	7	11	8	13	7

Most measures recommended for this sub-domain were identified as aspirational measures (Q1d). Responses commonly cited patient awareness measures aimed at assessing adherence to patient preference with care or end of life decisions and means for communication (email vs. telephone), and patient access to decision aids (prior to surgery) and shared decision making materials. Responses stressed the importance of utilizing health IT to enable shared decision making and support active patient engagement and care management. Measure recommendations also referred to the AMA/PCPI for chronic disease measures related to dementia counseling and preference for artificial feeding for stroke patients that are in development. One respondent stated that additional evaluation of these AMA/PCPI measures is needed.



Across Q1a-Q1d, responses overwhelmingly recommended AHRQ’s CAHPS measure sets for this sub-domain, including Hospital CAHPS (HCAHPS), CAHPS Medical Home, CAHPS Surgical Care, CAHPS Clinical and Group, and CAHPS Health Information Technology. The Surgical Care Survey addresses critical issues of surgical care, including informed consent, shared decision making, and post-operative follow-up. It also assesses the extent to which the surgical team accounts for patients preferences of care understanding of their surgical care. The Clinician and Group and Medical Home surveys assess patients’ experiences with their physicians and other medical staff. The health IT survey focuses on patients’ experiences with health IT and assessing the health IT capabilities that providers offer their patients. Responses explained that good patient experience has a positive relationship with other aspects of care quality and can improve health outcomes; tracking these measures can also enable shared decision making.

In response to Question 2, there were seven cross-cutting measures identified, one of which was the commonly referenced CAHPS Medical Home survey.

Sub-Domain: Patient Health Outcomes

A total of 36 unique measures were recommended under this sub-domain, which involves one measure concept. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	14	3	7	8	4

Most of the measures recommended for this sub-domain were identified as health IT-sensitive, ready for use, and endorsed by a consensus entity (Q1a). Of these, responses called for measures assessing outcomes or care management (e.g., symptom and activity assessment; optimal care) for chronic diseases including coronary artery disease, depression, heart failure, and diabetes. A couple of responses suggested the use of AHRQ’s Patient Safety Indicators and Inpatient Quality Indicators and nutrition management as recommended by the American Dietetic Association. Responses reasoned that evaluating these outcomes measures will encourage appropriateness of care/services rendered, support work in comparative effectiveness, and support patient decision-making.

Across the remaining sub-questions, several measures addressed health risk assessment and functional health status. The Katz Activities of Daily Living Scale, Stanford Health Assessment Questionnaire, and the Global Assessment Functioning Scale were cited as notable tools for use to measures health risk and functional status. Additional remarks stated that validated health assessment forms should be stored in EHRs to evaluate health risk status.



Sub-Domain: Community Resources Coordination/Connection

A total of 10 unique measures were recommended under this sub-domain, which involves one measure concept. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	3	2	0	5	0

Measure recommendations were spread relatively evenly amongst three categories:

- Health IT-sensitive, ready for use, and endorsed by a consensus entity (Q1a),
- Health IT-sensitive, ready for use, but NOT endorsed by a consensus entity (Q1b), and
- Aspirational (Q1d).

A sample of these measures related to the availability of home monitoring/telehealth programs, patients’ need of referrals across care settings, patient knowledge of community resources, and pressure ulcer risk. One response indicated that pressure risk assessment and prevention should encompass the identification of necessary community resource requirements for prevention and healing. Measure recommendations also included the electronic distribution of information on community resources for patients with an increased need for such information.

Sub-Domain: Appropriate/Efficient Use of Facilities

A total of 19 unique measures were recommended under this sub-domain, which involves two measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	2	1	4	11	2

The majority of measures recommended for this sub-domain were identified as aspirational (Q1d); however, several of the measures recommended are existing measures (not aspirational) and relate to avoidable hospitalizations, ED visits, and readmissions. For example, specific measures identified for Q1d included AHRQ’s Prevention Quality Indicators (ambulatory care-sensitive preventable admissions), CMS’ 30-day readmissions for heart failure, AMI, and pneumonia, and NCQA’s all-cause readmission measure. These measures were also identified in Q1c as being existing measures that need significant adaptation and testing for a health IT environment. Further, respondents indicated ambulatory-care sensitive preventable admissions are critical to improving patient well-being and curbing costs and that there is a significant death in measures addressing preventable ED visits and 30-day readmission for various chronic conditions. Several comments also indicated that the readmissions measures must be risk-adjusted, empirically tested, and validated as an electronic specification.



Sub-Domain: Appropriate/Efficient Use of Diagnostic Tests

A total of 37 unique measures were recommended under this sub-domain, which involves one measure concept. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	8	10	12	10	0

Measure recommendations were relatively spread evenly amongst the Question 1 sub-categories. Recommendations generally related to radiology/imaging measures including appropriate/inappropriate use for conditions such as low back pain or sinusitis, use of CT contrast and exposure to CT radiation dose, and cancer screening. The AMA/PCPI, CMS, NCQA, and the American College of Radiology were referenced as sources for the various radiology/imaging measures. One response cited that the use of diagnostic tests for differential diagnosis is critical in mitigating the common occurrence of missed and delayed diagnoses, which are costly.

Sub-Domain: Appropriate/Efficient Treatment of Chronic Disease across Multiple Sites of Care

A total of 26 unique measures were recommended under this sub-domain, which involves two measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	7	2	6	8	4

Measure recommendations were relatively spread evenly amongst three categories:

- Health IT-sensitive, ready for use, and endorsed by a consensus entity (Q1a),
- Well-established but need significant adaptation and testing for a health IT environment (Q1c), and
- Aspirational (Q1d).

Measure recommendations involved outcomes assessment, care management, and care coordination for diabetes, falls, osteoporosis, cancer/chemotherapy, and depression. A common measure recommendation included documentation of a patient’s medical complications or comorbidities in a problem plan. Responses indicated that diabetes and depression measures from NCQA and the AMA/PCPI should be taken into consideration, given that they are risk-adjusted, tested and validated as an electronic specification. Responses also indicated cross-cutting measure recommendations involving health IT systems that would enable information sharing across care providers and promote patient engagement, for example, in terms of providing patients with links to community-specific resources or health risk assessment information.

Additional commentary spoke to a perceived dearth in measures to address the measure concept of this sub-domain and the need to tie all measures to electronic data transmission.



Sub-Domain: Appropriate/Efficient Use of Medications

A total of 69 unique measures were recommended under this sub-domain, which involves four measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	16	2	34	12	6

Most measures recommended were identified as well-established but needing significant adaptation and testing for a health IT environment (Q1c). Recommendations addressed potentially inappropriate usage of medications for conditions such as acute bronchitis, otitis media, and asthma, and general medication management and adherence for patients with diabetes, cardiovascular conditions, HIV/AIDS, and depression, for example. These types of medication management measures involved medication reconciliation documentation (upon admission or discharge from hospital, for example), documentation of contraindications, and proportion of days covered. Several of NCQA’s HEDIS measures were cited along with measures from The Joint Commission, the AMA/PCPI, and the Pharmacy Quality Alliance. One response indicated that there is no universally accepted rate of medication appropriateness.

The majority of cross-cutting measures identified in response to Question 2 related to cancer-specific medication administration. These measures, recommended by one respondent, were not identified for any of the sub-questions 1a-1d; however, they were noted as being cross-cutting with the following measure concept (*Other domain*): *Measures that assess adherence to clinical practice standards (appropriate cardiac/cancer treatments)*.

Sub-Domain: Effective Care Planning

A total of 26 unique measures were recommended under this sub-domain, which involves three measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	7	0	8	12	2

Most recommended measures were identified as aspirational (Q1d). Responses cited measures aimed at the existence of patient care and self-management plans. It was noted that these types of measures rely on medical record review of whether the plan is present (in a patient’s medical records) or has been completed, or whether a discussion has been held with the patient about their care plan, however, standardizing them in a health IT environment would enable shared decision making. Several condition-specific measures that assess whether self-management education is provided were also recommended as aspirational. These measures related to conditions such as diabetes, falls, and stroke. Existing measures that were identified under Question 1a include advance care plan documentation, presence of surrogate contact information, and nutritional assessment. The Physician Orders/Medical Orders for Life Sustaining Treatment (POLST/MOST) form was also recommended (under both Question 1a



and Question 1d) by respondents. Additional commentary cited the need for a means to facilitate these types of care plan data sharing via a bidirectional interface.

Sub-Domain: Care Transitions

A total of 21 unique measures were recommended under this sub-domain, which involves three measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	4	0	10	11	0

The majority of measures recommended for this sub-domain were identified as well-established but needing significant adaptation and testing for a health IT environment (Q1c) and as aspirational (Q1d). Relating to these two sub-categories, the CAHPS measure sets (e.g., HCAHPS, Clinician and Group Survey, and Surgical Care Survey) were commonly cited. These were also recommended for Q1a. CAHPS specifically includes a medication reconciliation question, whether the PCP is informed about care from others, as well as assessment of the extent to which providers account for patient preferences and understanding of surgical care. However, it was noted that given this is survey-based measurement, there would need to be integration with health IT systems. Medication reconciliation (e.g., upon admission or upon/post discharge) was also a common measure identified for Q1c and Q1d, as well as Q1a. Relating to this measure, respondents provided examples of measure developers or other industry users of this measure including NCQA and CMS’ Physician Quality Reporting Initiative (PQRI).

Sub-Domain: Appropriate and Timely Follow-up

A total of 28 unique measures were recommended under this sub-domain, which involves one measure concept. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	9	0	8	3	9

Measure recommendations were spread relatively evenly amongst three categories:

- Health IT-sensitive, ready for use, and endorsed by a consensus entity (Q1a),
- Well-established but need significant adaptation and testing for a health IT environment (Q1c), and
- Aspirational (Q1d).

Notable measures recommendations across all three categories included assessment of timeliness as it relates to radiology/imaging (e.g., imaging for stroke), chemotherapy post-diagnosis, and medication administration (e.g., thrombolytics within 30 minutes of a heart attack). Several HIV/AIDS-specific measures relating to timely administration of medication and follow up of clinical lab results were also cited as relevant to this sub-domain. One response indicated that care transitions should be evaluated using the All Patients Refined Diagnostic Related Groups.



As with the Appropriate/Effective Use of Medications sub-domain, several cancer-specific measures were noted as cross-cutting in response to Question 2. These measures were cited as being cross-cutting with the following measure concept (*Other domain*): *Measures that assess adherence to clinical practice standards (appropriate cardiac/cancer treatments)*.

Sub-Domain: Medication Safety

A total of 23 unique measures were recommended under this sub-domain, which involves three measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	7	2	6	8	1

Measure recommendations were spread relatively evenly amongst three categories:

- Health IT-sensitive, ready for use, and endorsed by a consensus entity (Q1a),
- Well-established but need significant adaptation and testing for a health IT environment (Q1c), and
- Aspirational (Q1d).

Commonly cited measures included adverse drug events, including treatment for such events, medication reconciliation and monitoring of patients on medications (e.g., warfarin and other persistent medications), and monitoring of lab values (e.g., HbA1c, iron) prior to administration of medications. One response suggested that the AHRQ Common Formats may prove useful to track adverse drug events and patient identification errors as the Common Formats report information across events in a consistent manner. Additional commentary stressed the need for automation of adverse drug events detection, including the need to monitor medication compliance with FDA-identified adverse events.

Sub-Domain: Hospital Associated Events

A total of 43 unique measures were recommended under this sub-domain, which involves three measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	12	4	8	19	3

Most measures that addressed this sub-domain were identified as aspirational (Q1d) and health IT-sensitive, ready for use, and endorsed by a consensus entity (Q1a). Responses indicated that adverse events and hospital associated infections should be measured, and as one respondent noted, in such a way to distinguish meaningful data from noise. Specific hospital associated infections measure recommendations (for both Q1a and Q1b) included: surgical site infection and urinary tract infection. Another Q1b recommendation included a central line-associated bloodstream (CLAB) infection outcome measure. Additional measure recommendations included falls risk assessment and management, with a focus on determining the impact of health IT-enabled programs on outcomes and cost. An additional response



indicated that VTE measures are well established; a measure of perioperative care: venous thromboembolism (VTE) prophylaxis was suggested for consideration. Responses also highlighted several stroke-related measures (for Q1d) in development by the AMA/PCPI, some of which involve VTE prophylaxis receipt.

Sub-Domain: Healthy Lifestyle Behaviors

A total of 41 unique measures were recommended under this sub-domain, which involves three measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	27	4	7	10	2

Most measures were identified as being health IT-sensitive, ready for use, and endorsed by a consensus entity (Q1a). Measures typically involved preventive care and screening for BMI and lean body mass, alcohol use, smoking, immunizations, cancer, and infectious disease; commentary indicated that preventive care and screening measures should follow the evidence based guidelines of the United States Preventive Services Task Force (USPSTF). Relating to these measures, respondents referenced the following measure developers and industry users: The Joint Commission, Veterans Administration, Indian Health Service, Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, NCQA, and the National Commission on Prevention Priorities. Responses indicated that lifestyle measures are generally not health IT-sensitive, and that the promotion of health and wellness through health IT is critical to improving health outcomes. A couple of respondents suggested the use of the Omaha Documentation System and Prochaska's Stages of Change Ratings for use in measurement of patient self management and activation. Both tools are standard measurements for recording changes in patient knowledge, behavior, and status and were cited as being easily adaptable to a health IT system.

Sub-Domain: Effective Preventative Services

A total of 30 unique measures were recommended under this sub-domain, which involves three measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	12	4	5	12	1

Most of the measures that addressed this sub-domain were equally identified as health IT-sensitive, ready for use, and endorsed by a consensus entity (Q1a) and aspirational (Q1d). Responses across all sub-questions commonly cited screening for depression and cancer, measures of blood pressure control, HbA1c control. Additional measure recommendations for Q1a related to preventive care and screening for BMI, smoking, immunizations, and chlamydia; commentary indicated that any preventive care and screening measures should follow the evidence based guidelines of the USPTF. Relating to these measures, respondents cited various measure developers and industry users including NCQA, AMA/PCPI, the National



Commission on Prevention Priorities, and CMS' Physician Quality Reporting Initiative. Responses indicated that AMA/PCPI measures centered on blood pressure, depression, and diabetes management were in development and so currently aspirational. Respondents also noted a couple of tools for use with depression screening: the Edinburgh Post Partum Depression Scale for use in post partum depression screening and the Patient Health Questionnaire (PH-9) for general depression screening.

Sub-Domain: Health Equity

A total of 11 unique measures were recommended under this sub-domain, which involves one measure concept. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	3	0	0	8	1

Measures that addressed this sub-domain were largely identified as aspirational (Q1d). The measures spoke to alcohol abuse screening, falls, medication management, suicide assessments, pediatric home safety assessment and the need to collect and stratify quality measures by demographic data to aid in disparities reduction. One response relayed that there are no existing measures which address the associated measure concept in a meaningful, reliable manner.

Sub-Domain: Other

A total of 33 unique measures were recommended under this sub-domain, which involves six measure concepts. Measures were recommended as follows:

Q1 sub-question	Q1a	Q1b	Q1c	Q1d	Q2
# of measures	9	2	7	17	0

Most recommended measures for this sub-domain were identified as aspirational (Q1d). Many of the cardiovascular and cancer/chemotherapy-related measures overlapped with measures recommended for the *Appropriate and Timely Follow-Up* sub-domain (e.g., appropriate timing for chemotherapy post-diagnosis, thrombolytics within 30 minutes of a heart attack). Other condition-specific measures included falls risk assessment/management, depression screening, and pressure ulcer risk assessment and prevention. One response stressed the importance of access to primary care, citing the issue of overuse of emergency departments due to lack of primary care.



4.2 Summary of Comments for Question 3

Request for Comment – Question 3

Please provide comments on how these measures can: a) address health disparities and/or b) reduce burden of disease in populations.

There were 51 total responses to Question 3. Generally, responses to Question 3 did not specifically address health disparities independent of reducing disease burden; instead, respondents provided a broad comment that encompassed both points.

Across the 17 sub-domains, most comments related to *Self Management/Activation* (12), *Honoring Patient Preferences and Shared Decision Making* (8), and *Effective Care Planning* (4). Each of the remaining the sub-domains had between zero and three comments. Because of the limited number of responses, the summary of the key themes identified for Question 3 is only provided for the three sub-domains referenced above.

Sub-Domain: Self Management/Activation

Of the 12 responses associated with the *Self Management/ Activation* sub-domain, seven indicated that the recommended measures address health disparities and/or reduce the burden of disease. In terms of whether measures address health disparities, responses indicated that the use of certain measures would help identify health disparities, allow for population analysis, help to effectively manage congestive heart failure patients, reduce 30-day readmissions, and result in better care. One response indicated that the measures associated with this sub-domain in general would not address health disparities or reduce the burden of disease because patient activation cannot be objectively measured, and because many other factors affect patients' health status. One of the responses indicated that few of the reasons for health disparities are within the control of the physician; as a result, this response was categorized as 'unclear' for whether health disparities are addressed.

Sub-Domain: Honoring Patient Preferences and Shared Decision Making

Of the eight responses associated with the *Honoring Patient Preferences and Shared Decision Making* sub-domain, the majority (five of the eight responses) indicated that the recommended measures would address health disparities and/or reduce the burden of disease. These responses indicated that the use of the recommended measures would result in better outcomes, guide the utilization of appropriate resources, identify health disparities, and engage patients and patients' families in documenting and achieving goals of care. Two responses within this sub-domain, included within a single respondent submission, stated that the measures will not address health disparities nor reduce the burden of disease, given that the availability of more patient information to the provider may not translate into a change in global health disparities or population studies.

Sub-Domain: Effective Care Planning

Of the four responses associated with the *Effective Care Planning* sub-domain, two responses indicated that the recommended measures address health disparities and/or reduce the burden of disease by ensuring that patients' goals of care are documented and available to providers,



and by helping patients and their surrogates to more effectively plan care. One response did not specifically relate to any recommended measures but indicated that the types of measures associated with the *Measures assessing adherence to a comprehensive care plan in the EHR with an up to date problem list and care plan that reflects goals of care* measure concept would address health disparities and reduce the burden of disease by allowing for the exchange of information across providers. One response generally indicated that care plans must be available and followed.

4.3 Summary of Comments for Question 4

Request for Comment – Question 4

Please provide comments on how these measures can support assessing change in outcomes, including cross-cutting measures of risk status and functional status.

There were 59 total responses to Question 4. Across the 17 sub-domains, most comments related to *Self Management/Activation* (9), *Honoring Patient Preferences and Shared Decision Making* (7), and *Hospital Associated Events* (6). Each of the remaining sub-domains had between zero and five comments. Because of the limited number of responses, the summary of the key themes identified for Question 4 is provided for the three sub-domains referenced above.

Sub-Domain: Self Management/Activation

Of the nine responses associated with the *Self Management/ Activation* sub-domain, five responses indicated that the recommended measures support assessing change in outcomes. Responses indicated that the use of certain measures would allow for better monitoring of risk and patient outcomes, improve decision-making, and permit differentiation by functional status. One response indicated that the measures associated with this sub-domain in general would not support assessing change in outcomes because these measures cannot be objectively measured and health outcomes are not always a direct result of patients' self management. One of the responses categorized as 'unclear' stated that there is a need for specifics in how EHRs will change outcomes and functional status, and that standardized measures will have to be verified through an algorithm certification process.

Sub-Domain: Honoring Patient Preferences and Shared Decision Making

Of the seven responses associated with the *Honoring Patient Preferences and Shared Decision Making* sub-domain, two responses indicated that the recommended measures would support assessing change in outcomes. For example, standard interview processes and measuring how well/ how often planning occurs will ensure that patients are engaged in advance care planning and will make care more patient-centered. Three responses indicated that it is unclear whether measures will support assessing change in outcomes. One of these responses stated that the connection between process and outcomes needs to be studied before measures are developed. Another of the responses included comments that current outcome measures do not provide a good assessment of an individual's goals or concerns to determine whether



choices were consistent with patients' preferences. Two responses gave no indication of whether the measures would support assessing change in outcomes.

Sub-Domain: Hospital Associated Events

Of the six responses associated with the *Hospital Associated Events* sub-domain, all six indicated that measures would support assessing change in outcomes. Three of the six responses related to recommended measures under Question 1 and/or Question 2, and referenced software or tools that could be used to monitor outcomes (e.g., accelerometry devices and Potentially Preventable Complications software). The remaining three responses did not relate explicitly to measures recommended under Question 1 and/or Question 2, but commented generally that the measures under the sub-domain would support assessing change in outcomes. Two of these general responses stated that outcomes data are already being reported.

4.4 Summary of Comments for Question 5

Request for Comment – Question 5

Please provide comments on how these measures can support longitudinal assessment of care and shared accountability across providers and sites of care for multiple conditions.

There were 66 total responses to Question 5. Across the 17 sub-domains, most comments related to *Self Management/Activation* (13), *Honoring Patient Preferences and Shared Decision Making* (9), and *Effective Care Planning* (6) sub-domains. Each of the remaining sub-domains had between zero and five comments. Because of the limited number of responses, the summary of the key themes identified for Question 5 is provided for the three sub-domains referenced above.

Sub-Domain: Self Management/Activation

Of the 13 responses associated with the *Self Management/ Activation* sub-domain, seven responses indicated that the recommended measures support longitudinal assessment of care and shared accountability. Responses indicated that the use of certain measures within this sub-domain would allow for the linkage of patients throughout the continuum of care, increase opportunity for patients' values and goals to be honored, support data exchange, and allow for better decision-making. One response indicated that measures in general, within the measure concept of *Measures of Patient Activation, Including Skills, Knowledge, and Self-Efficacy*, do not meet the criteria of applicability across multiple types of providers, care settings, and conditions, because identifying which providers are leading patients in the right direction is a subjective task. Another response, categorized as 'unclear,' stated an interest in knowing how the utilization of EHRs would support longitudinal assessment of care and shared accountability, and expressed a concern that there is a lack of a focused plan for this to occur. Four responses did not indicate whether the measures would support longitudinal assessment of care and shared accountability, but commented generally that informed consent must be required before data is collected and exchanged, that measurements must be dynamic and measured over time, and that providers must have the ability to share information across settings.



Sub-Domain: Honoring Patient Preferences and Shared Decision Making

Of the nine responses associated with the *Honoring Patient Preferences and Shared Decision Making* sub-domain, seven responses indicated that the recommended measures would support longitudinal assessment of care and shared accountability. Responses stated that use of these measures may improve the skills of providers engaged in discussions with patients, align caregivers and build consensus in treatment plans, improve efficiency of interviews, and ensure treatment plans meet patients' stated goals. Two of the nine responses, however, indicated that measures will not support longitudinal assessment of care and shared accountability. One of the two responses indicated that standards must be developed and vetted before measures can be developed; the other response questioned how the proposed measures will produce the anticipated results without more standardization and verification.

Sub-Domain: Effective Care Planning

Of the six responses associated with the *Effective Care Planning* sub-domain, five responses indicated that measures would support longitudinal assessment of care and shared accountability. Comments noted that such measures would result in more effective patient assistance, promote accountability by utilizing a comprehensive care plan, ensure treatment plans meet patients' stated goals, ensure decision-making is undertaken by a surrogate, and support data exchange. One response did not indicate whether measures would support longitudinal assessment of care and shared accountability. This response encouraged the Workgroup to further explore how adherence to a comprehensive care plan would be measured, and stated that an effective care plan should incorporate the measures of a problem list that represents all providers involved with patients' care.

4.5 Summary of Comments for Question 6

Request for Comment – Question 6

Please provide any additional comments.

There were 361 total responses to Question 6. The type of responses submitted for Question 6 varied across all respondents. Some respondents used Question 6 as an opportunity to provide additional comments related to their responses in prior questions while others submitted all of their comments through this one question. Across all comments received, the following primary topical categories of comments emerged:

- Measure concept feedback
- Measure concept criteria feedback
- Measure recommendations
- Measure implementation recommendations
- Rationale/supporting information for measure recommendations provided in Questions 1 and 2
- Stakeholder engagement recommendations
- Data collection capability concerns



The summary of comments for Question 6 is organized based on the thematic analysis conducted at the following levels:

- Comments Addressing Multiple Domains and Sub-Domains
- Comments Addressing Specific Domain(s)
- Comments Addressing Specific Sub-Domain(s)
- Comments Addressing Specific Measure Concept(s)

Given the extensive number of responses, the summary below only includes those comments pertaining to the most frequent topical category type (e.g. measure concept feedback, measure recommendations).

Comments Addressing Multiple Domains and Multiple Sub-Domains

There were a total of 30 responses to Question 6 that addressed multiple domains or multiple sub-domains. Most of these comments focused on measure concept feedback or measure implementation recommendations.

Measure concept feedback. Pertaining to measure concept feedback, it was recommended that ONC focus on a smaller set of measures than proposed. In addition, there was concern that many of the measure concepts were not related to health IT, and that only the measures that were health-IT sensitive or that pertained to improving quality through the use of health IT should be included. Finally, it was noted that terms such as “appropriateness,” “comprehensive,” and “successful” should be removed from measure concept definitions because they are vague and difficult to accurately measure. Additional sentiment included support for the different domains and associated measure concepts.

There were also recommendations to include additional measure concepts that focused on oral health, pediatrics (e.g., newborn screening, immunizations), and nutrition health status and other similar wellness type areas should be incorporated in all domains relating to avoidable risk.

Measure implementation recommendations. Comments referenced the need to obtain informed consent by the patient before data can be collected or exchanged. Measure development and evaluation processes are also needed, including processes for evaluating whether a measure is useful, applicable, and scientifically sound. Various respondents commented on the need for alignment of measure/reporting requirements across Federal government program and initiatives, including the National Quality Strategy, Centers for Medicare & Medicaid Services (CMS), and the Food and Drug Administration (FDA)’s Sentinel Program. Finally, one respondent indicated that Meaningful Use and the measure implementation process needs to build upon current privacy and security protocols, as well as develop new protocols that will enable providers and patients to securely communicate via new technologies such as biometric smart cards, cell phones, and web portals.



Comments Addressing Specific Domains

There were a total of 20 responses to Question 6 that addressed specific domains². Most of the comments focused on measure concept feedback within a specific domain. This specific feedback is illustrated in Exhibit 4 below.

Exhibit 4: Measure Concept Feedback in Response to Question 6, per Domain

Domain	Measure Concept Feedback
Care Coordination	<ul style="list-style-type: none"> ▪ Outcome measures should be implemented in Stage 3 Meaningful Use ▪ Supports care coordination as a priority ▪ Supports HIE as a mechanism to improve care coordination ▪ Standard operational construct needed for care coordination ▪ Include patient experience as part of measuring care coordination ▪ Using health IT to collect experience of care information from all patients using existing survey instruments should be a top priority for advancing measures currently available
Clinical Appropriateness	<ul style="list-style-type: none"> ▪ There is a lack of universally accepted efficiency measures and any that are incorporated into Meaningful Use must be evidence-informed and empirically tested ▪ The term "quality" needs to be defined for this domain
Patient and Family Engagement	<ul style="list-style-type: none"> ▪ Additional detail needed about all measure concept definitions in this domain because it is not clear how these measures can be accomplished through an EHR and through evaluation a provider ▪ Aspects of health related quality of life (HRQOL) should be included all measure concepts ▪ There is a lack of e-specified measures related to this domain ▪ A measure concept pertaining to health literacy assessment for patients and families should be included
Patient Safety	<ul style="list-style-type: none"> ▪ Outcome measures should be implemented in Stage 3 Meaningful Use
Population and Public Health	<ul style="list-style-type: none"> ▪ No comments pertaining to measure concept feedback
Other	<ul style="list-style-type: none"> ▪ Move most measure concepts from the <i>Other</i> domain to the <i>Patient Safety</i> domain ▪ Measure concepts are focused on measuring the EHR system versus patient outcomes ▪ The Workgroup should consider the addition of "measures of applied real-time decision support." This could be predictive risk modeling for an event (say CHF readmission or hospital acquired VTE), a near real-time patient monitoring index (e.g., an electronic version of the Modified Early Warning Scores (MEWS) criteria), or bringing a gap in patient care to attention in a timely manner (e.g. missing vaccine)

² One of the 22 responses was counted as both applying to a specific domain and specific measure concept.



Comments Addressing Specific Sub-Domains

There were a total of 22 responses to Question 6 that addressed specific sub-domains. Eleven out of 17 sub-domains received at least one comment. Across all unique responses, most responses were associated with measure concept feedback or measure recommendations.

Measure concept feedback. Feedback received for the *Effective Care Planning* sub-domain suggested combining the three measure concepts into one or two concepts, and including clinical trial information in care plans. *The Effective Preventative Services* sub-domain included a recommendation on adding effective early detection services such as breast, cervical, and colorectal cancer screenings. Feedback pertaining to the *Hospital Associated Events* sub-domain included a recommendation that an EHR should include the ability to support medical and behavioral screening. The *Self Management/Activation* sub-domain feedback included the comment that measure concepts should incorporate the need for consistent follow-up on patient progress. One response across two sub-domains (*Effective Care Planning, Healthy Lifestyle Behaviors*) cautioned that the proposed measure concepts are measuring clinical care versus measuring utilization of health IT in a meaningful way.

Measure recommendations. Measure recommendations were provided for six sub-domains. Note that some of these recommendations overlap with those identified for Questions 1 and 2 (see Appendix C for Question 1 and 2 measures). Recommendations based on Question 6 responses include:

Appropriate/Efficient Use of Medication

- Evaluation generic versus brand pharmaceuticals
- Patient tolerance/patient compliance

Effective Preventative Services

- Immunizations (child-specific; influenza)
- Preventive screenings (e.g., NQF-endorsed breast cancer screening, cervical cancer screening, colorectal cancer screening)

Healthy Lifestyle Behaviors

- Mental health and substance abuse screening/care coordination
- Patient preferences/experiences of care (e.g., language preferences)
- Pain management
- Screening for depression, teen pregnancy, tobacco use, adolescent obesity/BMI

Honoring Patient Preferences and Shared Decision-Making

- Physician Orders for Life-Sustaining Treatment (POLST)

Hospital Associated Infections

- Process and outcomes measures for reducing hospital associated infections
- Adverse drug events

Patient Health Outcomes



- Patient health outcomes/functional status (e.g. measures developed by NCQA, The Joint Commission, AMA/PCPI, and AHRQ)

Comments Addressing Specific Measure Concepts

There were a total of 274 responses to Question 6 that addressed specific measure concepts³. All measure concepts received at least one response. Most of the comments entailed measure concept feedback and measure recommendations. Specific detail on the measure concept feedback and measure recommendations is included in Appendix D.

Across all comments pertaining to specific measure concepts, there were general themes that emerged. Specifically, there was concern that specific measure concepts are unclear or may prove difficult to electronically measure automatically and reliably report. Similarly, comments reflected a need for additional detail about the proposed measure concept and its definition, or recommended additional development/evaluation of measures before implementation into Meaningful Use. There were also instances when a respondent noted support of a particular measure concept.

Measure recommendations were provided for 37 of the 41 measure concepts. The measures largely overlapped with those recommended for Questions 1 and 2 (see Appendix C for Question 1 and 2 measures), and several references to existing measure sets were provided (e.g., NQF-endorsed set, USPSTF-based measures, CAHPS, NCQA measures, AMA/PCPI measures, CMS' PQRI measures), similar to comments received for Questions 1 and 2.

³ One of the 274 responses was counted as both applying to a specific domain and specific measure concept.



Appendix A: Measure Concepts Identified by Health IT Policy Committee's Quality Measure Workgroup

Domain: Patient and Family Engagement	
Sub-Domain: Self-Management/ Activation	
1. Measures of patient activation, including skills, knowledge, and self-efficacy	This measure concept relates to a patient's ability to effectively self manage and engage in his/her care. It is geared toward measuring whether a patient is continuing to manage his/her care, measuring health outcomes, and measuring whether the patient has been led in the "right direction" by his/her healthcare provider regarding his/her plan of care.
2. Measures of patient self-management	This measure concept focuses on provisions of effective, personalized self-management resources and tools that are in accordance with patient preferences, and also the need to measure self-management of health risk behaviors and preventive care of both acute and chronic conditions.
Sub-Domain: Honoring Patient Preferences and Shared Decision Making	
3. Measures of shared decision making or decision quality that address a combination of patient knowledge and incorporation of patient preferences	This measure concept is focused on measuring whether or not shared decision-making occurred, the level of clinician awareness of patient preferences, and the level to patient engagement in the shared decision making process.
4. <i>Measures of patient preferences/experiences of care</i>	This measure concept focuses on measuring the extent to which the delivered care aligned with the patient's preferences and measuring the patient's preferred method of communicating these preferences (paper, portal, universal serial bus [USB], emails, PHR, etc).
Sub-Domain: Patient Health Outcomes	
5. Measures of patient health outcomes, including health risk status, functional health status, and global measures of patient health	This measure concept focuses on measuring avoidable risk of death, disease/disability status, and patient level of ability in physical, mental and social domains.
Sub-Domain: Community Resources Coordination/Connection	
6. Measures of patient access to community resources for improved/sustainable care coordination	Connecting patients to community resources for health promotion, complex chronic disease management and care, and social/other non-medical needs/support, including online patient/caregiver communities is important. Improving health outcomes, including functional status, often requires other non-health institution resources (e.g., support groups, transportation, etc.). This measure concept seeks to capture patient access to these non-health institution resources.



Domain: Clinical Appropriateness	
Sub-Domain: Appropriate/Efficient Use of Facilities	
7. Measures of all cause readmissions and length of stay	This measure concept was selected because frequency of visits and length of stay are indicators that care is not being administered effectively to a patient. Combining all cause readmissions and length of stay in this measure concept addresses the correlation between lowering the length of stay at the cost of more readmissions or lowering readmissions but increasing the length of stay.
8. Measures assessing ambulatory care-sensitive preventable admissions	This measure concept relates to admissions caused by unaddressed ambulatory conditions at the onset of symptoms due to multiple reasons such as inappropriate clinical management or inefficient systems issues.
Sub-Domain: Appropriate/Efficient Use of Diagnostic Tests	
9. Measures assessing the appropriate use of diagnostic imaging procedures, with measures for redundancy, cumulative exposure, and appropriateness	The measure concept focuses on the causes and impacts of unnecessary diagnostic procedures, which are a high-cost area of medical care. A potential radiology measure would assess the appropriateness of procedures as well as patient safety related to radiation exposure.
Sub-Domain: Appropriate/Efficient Treatment of Chronic Disease across Multiple Sites of Care	
10. Measures assessing the development of co-morbidities as a result of uncontrolled chronic disease (sequelae of uncontrolled diabetes)	This measure concept addresses the effective management of specific chronic illnesses and the prevention of subsequent sequelae.
11. Measures assessing reconciliation of the care plan for chronic disease patients across care settings and multiple specialists (process measure)	This measure concept focuses on effective care across multiple providers, including treatments as well as other services, such as patient education. In addition to determining whether patients have defined treatment plans, it addresses concerns that as patients meet with various providers, they may receive inconsistent care.
Sub-Domain: Appropriate/Efficient Use of Medications	
12. Measures assessing appropriate medication treatments, including overuse and/or underuse	This measure concept evaluates the appropriate use of medications based on standards of care for applicable conditions as well as the underuse of medications warranted for effective management of the condition.
13. Measures of medication use linked to adherence outcomes	Evaluating adherence rates related to outcomes will allow providers and hospitals to evaluate factors associated with patient adherence in the delivery model. The measure concept seeks to address this issue.



14. Measures assessing usage rates for generic vs. brand name medications	Evidence suggests that there is no difference in efficacy of generic vs. brand name medications for certain conditions. This measure concept seeks to assess generic vs. brand name medication usage rates.
15. Measures assessing the appropriate use of cardioprotective medications (aspirin, angiotensin-converting enzyme inhibitors, and statins) in individuals at high risk of experiencing heart attacks and strokes	Innovative risk reduction programs using health information technology demonstrate significant impact on relevant communities and populations at risk for cardiovascular events and strokes. This measure aims at assessing the use of such strategies.
Domain: Care Coordination	
Sub-Domain: Effective Care Planning	
16. Measures assessing adherence to a comprehensive care plan in the EHR with an up to date problem list and care plan that reflects goals of care	This measure concept seeks to address the receipt of a comprehensive care plan that is HIT sensitive. A comprehensive care plan may include the presence of a post visit summary (if applicable), self management plan, annual care plan covering all aspects of a patient's health, patient goals of care, pertinent history, problem list, medication list, and allergy list. Potential measures do not only have to be process measures, outcome measures can be created to assess adherence to the care plan.
17. Measures of an Advance Care Plan as a product of shared decision making	An advance care plan, which includes patient care goals, DNR status and health care proxy, is a product of shared decision making and an affirmation of patient preference. EHR enabled measures should ensure the retrieval of such plans at the point of care.
18. Measures of the success of a self management plan for patients with conditions where a self management plan might reasonably be considered to benefit them	Self management plans for patients with chronic conditions, such as CHF and asthma, can be delivered and measured through the use of the EHR. This measure concept relates to measures that are actionable for the provider and allow a feedback loop so that patient goals are continually incorporated into the plan.
Sub-Domain: Sub-Domain: Care Transitions	
19. Measures of reconciliation of all medications when receiving a patient from a different provider	Measures of successful medication reconciliation throughout all care transitions will be enabled through HIT and become a necessary element of care coordination.
20. Measures of patient and family experience of care coordination across a care transition (e.g. questions within HCAHP surveys)	This measure concept addresses measures that should assess the extent to which the health care team accounts for patient/family/caregiver preferences of care. The measures should also address the patient's understanding of his/her health care needs upon discharge to enable a successful and safe transition. (example: NQF #228 Care Transition Measure three-item survey and the HCAHPS survey questions)
21. Composite measures assessing receipt by both the care team members and the	Measures within this concept will use the EHR to determine if both the patient and the care team have received a comprehensive clinical summary after any care transition. Measures may assess patient understanding of the critical



patient/caregiver of a comprehensive clinical summary after any care transition	elements of the clinical summary. Composite measures may also include an assessment of care team compliance with critical elements of the care plan, including medication reconciliation, after a care transition has occurred.
Sub-Domain: Appropriate and Timely Follow-Up	
22. Measures assessing timeliness of provider response, and appropriate response, to clinical information, including lab and diagnostic results	Measures derived from an EHR allow the measurement of a provider's response to clinical information. Responses may be measured in two ways: through timeliness, and through appropriateness. (example: Calculation of longitudinal performance measures for hypertension that cross all settings of the care spectrum)
Domain: Patient Safety	
Sub-Domain: Medication Safety	
23. Measures of adverse drug event (ADE) reporting	This measure concept addresses measures that track ADEs. Measures would include those that capture general ADE rates or those that focus on specific medications or medication errors such as drugs to avoid in the elderly.
24. <i>Measures monitoring drug safety for patients who are on chronic medical therapy</i>	This measure concept seeks to address measures that assess appropriate monitoring of patients on chronic medications such as warfarin for which regular monitoring is required.
25. Measures of patient reported adverse events	Adverse events refer to any medication related adverse event or medical error which are traditionally reported by physicians. This measure concept focuses on patient-reported adverse events that would allow patients to engage in their own safety while under medical care.
Sub-Domain: Hospital Associated Events	
26. Measures of process and outcome improvement of hospital associated infections	This measure concept encompasses measures that assess process improvement and reduction of hospital associated infections such as central line associated blood stream infections and ventilator associated pneumonia.
27. Measures of venous thromboembolism (VTE) prophylaxis and VTE rates	There is strong evidence to support VTE prophylaxis as effective in preventing VTE in at-risk patients. This measure concept includes measures that capture rates of VTE prophylaxis and VTEs.
28. Measures of falls events and screening	Falls prevention can be facilitated through EHR use. This measure concept addresses the incidence of falls as well as falls prevention through measures of screening and use of precautions for at risk patients.



Domain: Population and Public Health	
Sub-Domain: Healthy Lifestyle Behaviors	
29. Measures of use/availability of services that promote healthy lifestyles (smoking cessation, body mass index management, patient health literacy): A) Smoking cessation - focused specifically on quit rate for patients within a reporting period	This measure concept encompasses longitudinal delta measures of improvement (or lack of improvement) that document smoking quit rate in a given reporting period; for example, a possible numerator and denominator might be the number of patients in the denominator with a smoking status of "former smoker" as their most recent status within a reporting period divided by the number of patients with a smoking status of "current smoker" as their earliest status within the reporting period.
30. Measures of use/availability of services that promote healthy lifestyles (smoking cessation, body mass index management, patient health literacy): B) Body Mass Index - focused specifically on tracking longitudinal change to determine patient outcome	This measure concept encompasses longitudinal delta measures of improvement (or lack of improvement) that document Body Mass Index in given a reporting period; for example, a possible numerator and denominator might be the number of patients in the denominator with a BMI of "overweight" or "normal weight" or ≥ 10 percent weight loss as their most recent status within a reporting period divided by the number of patients with a BMI of obese as their earliest status within the reporting period.
31. Measures of screening for alcohol use using a validated tool	This measure concept encompasses longitudinal measures that document alcohol use screening (using a validated instrument) in a given reporting period; for example, a possible numerator and denominator might be the number of patients in the denominator who were screened during a reporting period for unhealthy alcohol use divided by the total number of active clinical patients, aged 18 years and older seen for a visit within the reporting period.
Sub-Domain: Effective Preventative Services	
32. Measures of mental health screening using a validated instrument.	This measure concept encompasses longitudinal measures that document mental health screening (using a validated instrument) in a given reporting period; for example, a possible numerator and denominator might be the number of patients in the denominator who were screened for depression at least once in a reporting period divided by the number of active clinical patients, aged 12 years and older who were seen for a visit within the reporting period.
33. Measures of blood pressure focused specifically on tracking longitudinal change to determine patient outcome.	This measure concept encompasses longitudinal delta measures of improvement (or lack of improvement) that document blood pressure in a given reporting period; for example, a possible numerator and denominator might be the number of patients in the denominator with a Seventh Report of the Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7) classification of Stage 1 (140–159/90–99) or controlled ($<140/90$) as their most recent status within the reporting period divided by the number of patients with a JNC7 blood pressure classification of Stage 2 ($\geq 160/\geq 100$) and no diagnosis of diabetes mellitus or renal disease, as their earliest status within the reporting period.



34. Measures of glucose monitoring focused specifically on tracking longitudinal change to determine patient outcome.	This measure concept encompasses longitudinal delta measures of improvement (or lack of improvement) that document glucose levels in a given reporting period; for example, a possible numerator and denominator might be the number of patients in the denominator with a hemoglobin A1c < 9 percent as their most recent status within a reporting period divided by the number of patients with Hba1c ≥ 9 percent as their earliest status within the reporting period.
Sub-Domain: Health Equity	
35. Measures with no discrepancy when comparing health outcomes among those within priority populations to those not within the priority populations	Instead of purely measuring individual outcomes, this measure concept encompasses priority populations (as defined by AHRQ: racial and ethnic minorities, recent immigrant and limited-English-proficient populations, low-income groups, women, children (< 18), older adults (≥ 65), residents of rural areas, persons with special health care needs, those with maximum education level of less than a high school education and high school graduates, and insurance status) and documents health equity by noting the discrepancy between the health outcomes for the priority populations and the outcomes among those not in the priority populations; using glucose monitoring as an example, the denominator would be the total number of population groups serviced by a provider (for example, if the physician didn't see children, it would be excluded) and the numerator would be the number of these distinct population groups (ex. Children, African Americans, older adults ≥ 65) serviced by the provider for which there were no discrepancies in glucose monitoring outcomes, as compared to the non-priority population.
Domain: Other	
36. Measures that assess preventable ED visits	This measure concept focuses attention on the conditions that most affect the emergency department setting, as opposed to other measures that focus more on primary care physicians and/or hospital settings.
37. Measures that assess adherence to clinical practice standards (appropriate cardiac/cancer treatments)	This measure concept focuses on measuring clinician adherence to appropriate clinical practice standards.
38. Measures that assess combined quality and cost measures at each level and site of care reflecting potential defects in care	This measure concept encompasses important missed steps in managing a patient's chronic conditions across all care settings; for example, missing patient transition information and lack of follow-up.
39. Measures of medication error near misses	This measure concept focuses on documenting situations where a medication-related error almost occurred but did not.
40. Measures of patient identification errors and near misses	EHRs can help prevent patient identification errors, for example, by using photographs to confirm patient identity. Important concepts in this category include patient identification, error reporting, and proper verification before medication administration.
41. Measures of common EHR-related errors (mechanism to report EHR related errors and delays in care to improve EHRs)	This measure concept relates to assessing provider's safe and effective use of EHRs through measures such as alert adherence, proper patient identification, and confirmation of review of results sent electronically.

Italics indicate a measure concept that overlaps with other Federal programs/activities



Appendix B: Organizations and Individuals that Responded to Request for Comment

Organization Name	Response via Tool?	Response via Email?	Response via Blog?
Abbott Nutrition Products Division, Abbott	✓		
Agency for Healthcare Research and Quality	✓		
Alliance for Nursing Informatics	✓	✓	
America's Health Insurance Plans		✓	
American Academy of HIV Medicine, Association of Asian Pacific Community Health Organizations, HIV Medicine Association, National Alliance of State & Territorial AIDS Directors, Partnership for Prevention, and Trust for America's Health	✓		
American Academy of Hospice and Palliative Medicine	✓	✓	
American Academy of Ophthalmology			✓
American Academy of Pediatrics	✓		
American College of Physicians	✓		
American College of Preventive Medicine		✓	
American College of Radiology IT & Informatics Committee/GR Subcommittee	✓		
American College of Surgeons	✓		
American Dietetic Association	✓		
American Foundation for Suicide Prevention	✓		
American Hospital Association ⁴	✓	✓	
American Medical Association	✓	✓	
American Nurses Association	✓	✓	
American Society of Clinical Oncology	✓	✓	
Arizona Health Care Cost Containment System	✓		
Association for Professionals in Infection Control and Epidemiology		✓	✓
Association of American Medical Colleges		✓	
Baylor Health Care System	✓		
Boston University School of Public Health; and Veterans Administration	✓		

⁴ Given the level of detail in tool-submitted response to Question 6, only the email response was summarized for this organization.



Organization Name	Response via Tool?	Response via Email?	Response via Blog?
California Maternal Quality Care Collaborative			✓
California Primary Care Association	✓		
Care Continuum Alliance		✓	✓
Case Western Reserve University	✓		
Catholic Health East		✓	
Catholic Healthcare			✓
Centers for Disease Control and Prevention, National Center for Injury Control and Prevention	✓		
Certification Commission for Health Information Technology		✓	
Charlotte Hungerford Hospital	✓		
Cheboygan Memorial Hospital	✓		
Childbirth Connection			✓
Clinical Inservices Solutions, LLC	✓		
Consumer-Purchaser Disclosure Project	✓		
Dartmouth Institute	✓	✓	
Davis Family Physicians	✓		
Delaware Health Net	✓		
Disability advocacy groups (43 co-signers)		✓	
Drs. Concannon & Vitale, LLC	✓		
Duke	✓		
Durham Regional Hospital	✓		
Eastern Maine Healthcare Systems	✓		
Epic	✓		
GE Healthcare IT			✓
George Washington University	✓		
Golden Living, LLC & LTPAC HIT Collaborative	✓	✓	
Gundersen Lutheran Health System	✓		
Health Dialog	✓		✓
Health Economics Group+A2	✓		



Organization Name	Response via Tool?	Response via Email?	Response via Blog?
Health IT Now Coalition		✓	
Health Resources and Services Administration	✓		
HealthInsight Regional Extension Center ⁵	✓	✓	
HealthPartners Research Foundation	✓		
Healthwise	✓	✓	
HealthyCircles, LLC	✓		
HMS	✓		
Hospice and Palliative Care Coalition	✓		
Hospital Executive Council	✓		
Indian Health Service	✓		
Intuit Health	✓	✓	
Kaiser Permanente	✓		
Local Public Health Association of Minnesota	✓	✓	
Massachusetts General Hospital	✓		✓
McKesson Provider Technologies		✓	
MEDai / an Elsevier Company	✓		✓
Memorial University Medical Center	✓		
Minnesota Counties Computer Cooperative	✓		
Minnesota Department of Health	✓		
Missouri Hospital Association	✓		
NASMHPD	✓		
National Association of Community Health Centers	✓	✓	
National Center for Cognitive Informatics & Decision Making			✓
National Coalition for Cancer Survivorship			✓
National Committee for Quality Assurance		✓	
National Health IT Collaborative for the Underserved			✓

⁵ Given the level of detail in tool-submitted response to Question 6, only the email response was summarized for this organization.



Organization Name	Response via Tool?	Response via Email?	Response via Blog?
National Partnership for Women & Families	✓		
Nemours	✓	✓	
Neumann University	✓		
New York Chapter, American College of Physicians	✓		
New Yorkers for Accessible Health Coverage	✓		
Newborn Coalition	✓		
North Carolina Bio-Preparedness Collaborative		✓	
Oregon Health & Science University Center for Ethics in Health Care	✓		
Partners Healthcare	✓		
Patient Privacy Rights	✓	✓	
Pediatrix Medical Group	✓		✓
Pharmacy e-HIT Collaborative ⁶	✓	✓	✓
Philips	✓		
PhRMA	✓		
Planned Parenthood Federation of America		✓	
Qualidigm	✓		
REACH (MN-ND HIT Extension Center)	✓		
Riverbend Medical Group	✓		
Scots Pine Clinic, PLLC	✓		
SHAPE HITECH, LLC	✓		
Social & Scientific Systems	✓		
Society for Participatory Medicine	✓		
Society of Behavioral Medicine			✓
St. Joseph Health System	✓		
Stanford University	✓		
State of Oregon Health Information Technology Oversight Council		✓	

⁶ Given the level of detail in tool-submitted response to Question 6, only the email response was summarized for this organization.



Organization Name	Response via Tool?	Response via Email?	Response via Blog?
Surescripts	✓		
TeenScreen National Center for Mental Health Checkups at Columbia University	✓		
Texas Department of State Health Services	✓		
UnitedHealth Group			✓
University of Wisconsin School of Medicine and Public Health	✓		
VersaForm Systems Corp		✓	
Washington University School of Medicine	✓		

Individual Name ⁷	Submitted via Tool?	Submitted Via Email?	Submitted Via Blog?
Adrene Cohen			✓
Beth Friedman			✓
Bob the Senior Care Concierge			✓
Douglas Duncan			✓
Elvina Treuil			✓
Eric Eisenstein			✓
George			✓
J S	✓		
Joe Zolar	✓		
John Ritter	✓		✓
Judith Lindsey			✓
Kimberly Kelley			✓
Martha J Wunsch			✓
Michael A Goldfarb			✓
Nancy			✓
Nathan Lake	✓		
Nina Homan			✓

⁷ Individuals not associated with an organization or for which no organization name was provided.



Individual Name ⁷	Submitted via Tool?	Submitted Via Email?	Submitted Via Blog?
Shannah Koss			✓
Stephen Axelrod			✓
Stephen Beller			✓
Test Testing	✓		
Trisha			✓



Appendix C: Measure Recommendations per Responses to Questions 1 and 2

Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Domain: Patient and Family Engagement (116 measures)							
Sub-Domain: Self Management/Activation (43 measures)							
Measure Concept: Measures of patient activation, including skills, knowledge, and self-efficacy (32 measures)							
Age-related macular degeneration patients: Counseling on antioxidant supplements		1			✓		
Assess family caregiver involvement, education, access to appropriate information and ability to actively interact with Care Team		1				✓	
C.A.R.E. tool	CMS	1		✓	✓	✓	
CAHPS Clinician and Group Survey	AHRQ	1		✓			
CAHPS Health Information Technology Survey	AHRQ	1		✓			
Chronic Wound Care: Patient education regarding diabetic foot care	AMA/PCPI	1				✓	
Chronic Wound Care: Patient education regarding long term compression therapy	AMA/PCPI	1				✓	
Culturally appropriate, customized patient self-management tools		1				✓	
Dementia: Caregiver Education and Support	AMA/PCPI	1				✓	
Dementia: Counseling regarding risks of driving	AMA/PCPI	1				✓	
Dementia: Counseling regarding safety concerns	AMA/PCPI	1				✓	

⁸ Some respondents indicated specific measure developer or industry references in their Question 1/Question 2 response; in these cases, the references are included.



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Depression Counseling/Education (Adult Major Depressive Disorder)	AMA/PCPI	1				✓	
Diabetes: Self-Management Education/Training	AMA/PCPI	1				✓	
Diet education		1		✓			
Diet management and change over time (calorie intake; diet change; weight and BP recording)		1	✓				
Function assessments dictated by CMS electronic Minimum Data Set (MDS)	CMS	1	✓	✓	✓	✓	
Glaucoma: Counseling for primary open-angle glaucoma		1			✓		
Glycemic index diet		1				✓	
Hepatitis C: Counseling regarding risk of alcohol consumption		1	✓				
Hepatitis C: Counseling on use of contraception prior to antiviral treatment		1			✓		
Home monitoring programs that assess patient changes and alert caregivers to deterioration/potential risk		1				✓	
How's Your Health? Tool	John Wasson, Dartmouth	1		✓			
Incompetence/incapacity determination		1				✓	
OASIS	CMS	1		✓	✓	✓	
Osteoporosis: Counseling for vitamin D, calcium intake and exercise		1			✓		
Patient access to clinical summary via electronic health information portal		1				✓	
Patient Activation Measure (PAM) Survey	Judith Hibbard, University of Oregon	3	✓	✓			
Patient knowledge, behavior, and status change	Omaha Documentation System;	1	✓				



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
	Prochaska's Stages of Change Ratings						
Patient understanding about condition and role upon discharge		1	✓			✓	
Patient understanding of self care principles and skills		1			✓	✓	
Patient willingness/attempts to make positive lifestyle changes (e.g., smoking cessation, exercise)		1			✓	✓	
Pressure ulcer risk assessment and prevention		1				✓	
Domain: Patient and Family Engagement (116 measures)							
Sub-Domain: Self Management/Activation (43 measures)							
Measure Concept: Measures of patient self-management (26 measures)							
Age-related macular degeneration patients: Counseling on antioxidant supplements		1			✓		
Assess family caregiver involvement, education, access to appropriate information and ability to actively interact with care team		1				✓	
Asthma: Patients with documented understanding of asthma action plan		1				✓	
Chronic Wound Care: Patient education regarding diabetic foot care	AMA/PCPI	1				✓	
Chronic Wound Care: Patient education regarding long term compression therapy	AMA/PCPI	1				✓	
Culturally appropriate, customized patient self-management tools		1				✓	
Date of last oral exam by a dentist		1				✓	
Dementia: Caregiver Education and Support	AMA/PCPI	1				✓	
Dementia: Counseling regarding risks of driving	AMA/PCPI	1				✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Dementia: Counseling regarding safety concerns	AMA/PCPI	1				✓	
Depression Counseling/Education (Adult Major Depressive Disorder)	AMA/PCPI	1				✓	
Diabetes: Self-Management Education/Training	AMA/PCPI	1				✓	
Discharge teaching and preparation specific to condition		1				✓	
Glaucoma: Counseling for primary open-angle glaucoma		1			✓		
Heart Failure: Patients with documented understanding of their target dry weight		1				✓	
Hepatitis C: Counseling regarding risk of alcohol consumption		1	✓				
Hepatitis C: Counseling on use of contraception prior to antiviral treatment		1			✓		
Home health assessment completion documentation		1				✓	
How's Your Health? tool	John Wasson, Dartmouth	1		✓			
Medicare Health Outcomes Survey	CMS	1			✓		
Osteoporosis: Counseling for vitamin D, calcium intake and exercise		1			✓		
Patient access to at-home health assessments via electronic health information portal		1				✓	
Patient awareness of importance for follow-up given condition, and patient compliance with follow-up		1	✓				
Patient understanding of their disease state		1		✓			
Patients (chronic disease) with a self-management program		1		✓		✓	
Pressure ulcer risk assessment and prevention		1				✓	
Domain: Patient and Family Engagement (116 measures)							



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Sub-Domain: Honoring Patient Preferences and Shared Decision Making (35 measures)							
Measure Concept: Measures of shared decision making or decision quality that address a combination of patient knowledge and incorporation of patient preferences (21 measures)							
Advance care plan documentation/discussion		1				✓	
Brain death guidelines		1					✓
Brain death: Emotional and intellectual readiness of patient/family to discontinue care		1				✓	
CAHPS Medical Home Survey	AHRQ; NCQA Patient Centered Medical Home	3		✓	✓	✓	✓
CAHPS Surgical Care Survey	AHRQ	1	✓				
CAHPS: Patient perception of feeling involved in decision making process	AHRQ	1			✓		
Decision-quality	Foundation for Informed Medical Decision Making	1			✓		
Dementia: Comprehensive End of Life Counseling/ Advance Care Planning	AMA/PCPI	1				✓	
End of life readiness		1		✓	✓		
Infertility risk and fertility preservation options discussion; patient consent prior to chemotherapy with patients of reproductive age		1			✓		
Occurrences (percent) where the patient is well-informed		1				✓	
Occurrences (percent) where the right person is matched with right treatment	AHRQ	1				✓	
Patient access to shared decision making materials		1				✓	
Patient decision aid prescribed prior to surgery decision		1		✓		✓	
Physician Orders/Medical Orders for Life Sustaining Treatment		1		✓			



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
(POLST/MOLST)							
Pressure ulcer risk assessment and prevention		1				✓	
Shared decision-making	Foundation for Informed Medical Decision Making	1					✓
Stroke and Stroke Rehabilitation: Artificial Feeding - Patient/Caregiver Preferences	AMA/PCPI	1				✓	
Substance Abuse: Counseling for alcohol-related treatment options		1			✓		
Substance Abuse: Counseling for opioid-related treatment options		1			✓		
Survey indication that educational video was viewed/conversations with providers occurred	AHRQ	1			✓		
Domain: Patient and Family Engagement (116 measures)							
Sub-Domain: Honoring Patient Preferences and Shared Decision Making (35 measures)							
Measure Concept: Measures of patient preferences/experiences of care (22 measures)							
Advance care plan documentation/discussion		1	✓				
CAHPS	AHRQ	1		✓			
CAHPS Clinician and Group Survey	AHRQ	1		✓			
CAHPS Health Information Technology	AHRQ	1		✓			
CAHPS Medical Home Survey	AHRQ	2	✓	✓			
Communications with patient per their preference (email, text, etc.)		1	✓				
Compliance with patient preferences/medical orders in provision of care		1				✓	
Dementia: Comprehensive End of Life Counseling/ Advance Care Planning	AMA/PCPI	1				✓	
HCAHPS	AHRQ	1		✓			



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Patient ability to identify care preferences via the communication channel of their choice		1				✓	
Patient Assessment Survey	Pacific Business Group on Health	1		✓			
Patient experience of care	NCQA Patient Centered Medical Home	1	✓				
Patient goal for today is established; goal from last time is confirmed/checked		1					✓
Patient preference documentation		1				✓	
Physician Orders/Medical Orders for Life Sustaining Treatment (POLST/MOLST)		2	✓	✓			✓
Power of attorney		1		✓			✓
Pressure ulcer risk assessment and prevention		1				✓	
Provider indication of care goals		1		✓			✓
Stroke and Stroke Rehabilitation: Artificial Feeding - Patient/Caregiver Preferences	AMA/PCPI	1				✓	
Substance Abuse: Counseling for alcohol-related treatment options		1			✓		
Substance Abuse: Counseling for opioid-related treatment options		1			✓		
Surrogate contact information		1	✓				
Domain: Patient and Family Engagement (116 measures)							
Sub-Domain: Patient Health Outcomes (36 measures)							
Measure Concept: Measures of patient health outcomes, including health risk status, functional health status, and global measures of patient health (36 measures)							
Asthma: Assessment of Asthma Control in Ambulatory Care Setting	AMA/PCPI	1				✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
CAHPS Medical Home Survey	AHRQ	1					✓
Chronic Obstructive Pulmonary Disease: Assessment of symptoms		1			✓		
Coronary Artery Disease: Symptom and Activity Assessment		1	✓				
Coronary Artery Disease: Symptom Management		1		✓			
Dementia: Functional Status Assessment	AMA/PCPI	1				✓	
Depression Care: Ongoing Assessment (Adult Major Depressive Disorder)	AMA/PCPI	1				✓	
Depression Outcomes: Remission at 6 Months; 12 Months	Minnesota Community Measurement	1	✓				
Fall risk assessment/ management	NCQA's HEDIS	1			✓		
Functional health status: ADLs	Katz ADL scale; Stanford Health Assessment Questionnaire	1				✓	
Functional status upon hospital discharge, and in post-acute care settings	CMS	1	✓				
Global measures of patient health: Global Assessment Functioning Scale	Katz ADL scale; Stanford Health Assessment Questionnaire	1				✓	
Health literacy		1				✓	
Health outcomes that focus on patient functional status, overall well-being, quality of life	Foundation for Informed Medical Decision Making	1					✓
Health risk assessment, functional status, global measures of patient health		1				✓	
Health risk assessment: HRA, SF-12/3, depression screening, COPD assessment		1			✓		
Health risk status: BMI, waist circumference, and risk factors	Katz ADL scale; Stanford Health Assessment Questionnaire	1				✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Heart Failure: Symptom and Activity Assessment		1	✓				
HIT system that will deliver/ collect information from shared- decision support tools	AHRQ	1					✓
Hospital outcomes 30-days postoperative procedure	American College of Surgeons National Surgical Quality Improvement Program	1		✓			
Inpatient Quality Indicators	AHRQ	1	✓				
Intensive care unit: In-hospital mortality rate	Philip R. Lee Institute for Health Policy Studies, University of CA San Francisco	1	✓				
Intensive care unit: Length-of-stay	Philip R. Lee Institute for Health Policy Studies, University of CA San Francisco	1	✓				
Major health risks (e.g., high blood pressure, lack of physical inactivity) and longitudinal plan for status change		1					✓
Medicare Health Outcomes Survey	CMS	1			✓		
Nausea assessment and plan for addressing		1	✓				
Nutrition status and ability to manage nutrition	American Dietetic Association	1	✓				
Optimal diabetes care	Minnesota Community Measurement	1	✓				
Osteoarthritis: Function and Pain Assessment		1			✓		
Pain assessment and plan for addressing		1	✓				
Patient acuity		1	✓				
Patient Safety Indicators	AHRQ	1	✓				
Patient-Reported Outcomes Measurement Information System	American College of Surgeons	2		✓			



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
(PROMIS)	National Surgical Quality Improvement Program						
Pressure ulcer risk assessment and prevention		1			✓		
Rheumatoid Arthritis: Functional Status Assessment		1			✓		
Shortness of breath assessment and plan for addressing		1	✓				
Domain: Patient and Family Engagement (116 measures)							
Sub-Domain: Community Resources Coordination/Connection (10 measures)							
Measure Concept: Measures of patient access to community resources for improved/sustainable care coordination (10 measures)							
Home monitoring/medical home telehealth programs		1		✓			
Hospice referral with less than 6 month prognosis		1	✓				
Non-hospice palliative program referral for serious/life-threatening illness		1	✓				
Number of patients needing a referral		1				✓	
Patient preference documentation		1	✓				
Patient understanding of their disease state		1				✓	
Percent of patients who are offered appropriate community resources for improved/ sustainable care coordination		1				✓	
Pressure ulcer risk assessment and prevention		1				✓	
Provider specialties (number and type) involved in patient condition treatment and documentation of visit results and recommendations		1		✓			
Use of telehealth for more types of conditions		1				✓	
Domain: Clinical Appropriateness (147 measures)							
Sub-Domain: Appropriate/Efficient Use of Facilities (19 measures)							



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Measure Concept: Measures of all cause readmissions and length of stay (9 measures)							
Pressure ulcer risk assessment and prevention		1				✓	
Readmissions		1	✓				
Readmissions per 1000 patients at risk of hospitalization	CMS Transitions in Care Demonstration	1		✓			
Readmissions: 30-day	CMS	2			✓	✓	
Readmissions: 30-day (Cardiac patients)		1				✓	
Readmissions: 30-day (AMI patients)		1				✓	
Readmissions: 30-day (Heart Failure patients)		1				✓	
Readmissions: 30-day (Pneumonia patients)		1				✓	
Readmissions: Plan All Cause	NCQA's HEDIS	1			✓		
Domain: Clinical Appropriateness (147 measures)							
Sub-Domain: Appropriate/Efficient Use of Facilities (19 measures)							
Measure Concept: Measures assessing ambulatory care-sensitive preventable admissions (11 measures)							
Ambulatory care-sensitive preventable admissions		1				✓	
Depression screening		1				✓	
Fall risk assessment/ management		1				✓	
Head injury		1					✓
Lean body mass assessment		1	✓				
Low back pain		1					✓
Medication reconciliation upon admission		1				✓	
Pressure ulcer risk assessment and prevention		1				✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Preventable ED visits		1				✓	
Prevention Quality Indicators	AHRQ	1			✓		
Readmissions: 30-day	CMS	1			✓		
Domain: Clinical Appropriateness (147 measures)							
Sub-Domain: Appropriate/Efficient Use of Diagnostic Tests (37 measures)							
Measure Concept: Measures assessing the appropriate use of diagnostic imaging procedures, with measures for redundancy, cumulative exposure, and appropriateness (37 measures)							
Cumulative exposure to ionizing radiation	Fazel, 2009	2			✓		
Diagnostic tests provided and verification of any similar/equal diagnostics recently performed		1	✓				
Differential diagnosis		1			✓		
Head CT Scan Results for Acute Ischemic Stroke or Hemorrhagic stroke who Received Head CT Scan Interpretation Within 45 minutes of Arrival		1		✓			
Newborn screening for congenital heart disease		1		✓	✓		
Oncology: Normal tissue dose constraints specified		1			✓		
Outpatient Follow-up Mammogram or Ultrasound After Mammogram	CMS	1	✓				
Payor denials for diagnostic testing		1		✓			
Prostate Cancer: Avoidance of Bone Scan for Staging Low-Risk		1	✓				
Radiology: Appropriate Head CT Imaging in Adults with Mild Traumatic Brain Injury		1		✓			
Radiology: Appropriate ordering of imaging procedures	Massachusetts General/American College of Radiology Criteria	1		✓			



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Radiology: Cardiac Imaging	AMA/PCPI	1				✓	
Radiology: Cardiac Imaging for Non-Cardiac Low-Risk Surgery		1		✓			
Radiology: Cardiac stress imaging not meeting appropriate use criteria - Preoperative evaluation in low risk surgery patients		1		✓			
Radiology: Cardiac stress imaging not meeting appropriate use criteria - Routine testing after PCI		1		✓			
Radiology: Cardiac stress imaging not meeting appropriate use criteria - Testing in asymptomatic, low risk patients		1		✓			
Radiology: Cervical spine radiographs in trauma for patients with no neck pain, distracting pain, neurological deficits, reduced level of consciousness, or intoxication		1			✓		
Radiology: Correlation with Existing Imaging Studies for All Patients Undergoing Bone Scintigraphy		1			✓		
Radiology: CT radiation dose reduction		1			✓		
Radiology: Exposure time for procedures using fluoroscopy		1	✓				
Radiology: Inappropriate use of "probably benign" assessment category in mammography screening		1	✓				
Radiology: Low back pain - MRI lumbar spine		1			✓		
Radiology: Low back pain - Repeat Imaging Studies		1	✓				
Radiology: Low back pain - Use of imaging studies	NCQA's HEDIS	2	✓		✓		
Radiology: Melanoma - Overutilization of Imaging Studies for Stage 0-1A		1			✓		
Radiology: Outpatient CT Scan - Chest	CMS; American Board of Radiology; American Board of Medical Specialties; American College of Radiology; AMA/PCPI	2	✓			✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Radiology: PCI: Contrast Dose	AMA/PCPI	1				✓	
Radiology: PCI: Radiation Dose	AMA/PCPI	1				✓	
Radiology: Pulmonary CT Imaging for Pulmonary Embolism		1		✓			
Radiology: Radiation Dose Optimization	AMA/PCPI	1				✓	
Radiology: Sinusitis - Appropriate Use/Overuse Radiographic Imaging in Uncomplicated Acute Rhinosinusitis	AMA/PCPI	1				✓	
Radiology: Use of contrast - Thorax CT		1			✓		
Reminder System for Mammograms		1			✓		
Repetitive testing given different setting		1				✓	
Sinusitis: Appropriate Diagnostic Testing for Recurrent or Chronic Sinusitis	AMA/PCPI	1				✓	
Sinusitis: Appropriate Use/Overuse Computerized Tomography in Uncomplicated Acute Rhinosinusitis	AMA/PCPI	1				✓	
Utilization decision support tool: Utilization of Radiology (ordered tests and report documentation)		1				✓	
Domain: Clinical Appropriateness (147 measures)							
Sub-Domain: Appropriate/Efficient Treatment of Chronic Disease across Multiple Sites of Care (26 measures)							
Measure Concept: Measures assessing the development of co-morbidities as a result of uncontrolled chronic disease (sequelae of uncontrolled diabetes) (8 measures)							
Clinical quality dashboard tool: Quality indicators for chronic conditions		1				✓	
Depression screening		1				✓	
Diabetes: Outcomes measures	NCQA's HEDIS	1			✓		
Fall risk assessment/ management		1				✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
HIT system that will engage patients/ providers with Health Risk Assessments, functional health status, wellness		1					✓
Patient list of any complications, comorbidities		1	✓				
Pressure ulcer risk assessment and prevention		1				✓	
Provider specialties (number and type) involved in patient condition treatment and documentation of visit results and recommendations		1		✓			
Domain: Clinical Appropriateness (147 measures)							
Sub-Domain: Appropriate/Efficient Treatment of Chronic Disease across Multiple Sites of Care (26 measures)							
Measure Concept: Measures assessing reconciliation of the care plan for chronic disease patients across care settings and multiple specialists (process measure) (22 measures)							
Chemotherapy intent/plan documentation and discussion with patient; chemotherapy plan completed		1	✓				
Chemotherapy treatment summary completed/provided to patient and provider within 3 months of chemotherapy end		1					✓
Depression Care Coordination (Adult Major Depressive Disorder)	AMA/PCPI	1				✓	
Depression screening		1				✓	
Diabetes: Self-Management Education/Training	AMA/PCPI	1				✓	
Diabetic retinopathy: Communication with the physician managing ongoing diabetes care		1	✓				
Fall risk assessment/ management		1				✓	
Heart Failure: Post-Discharge Appointment		1		✓			
HIT system that provides health care professionals with links to community-specific resources that are available to their patients		1					✓
HIT systems that enable information sharing across all providers of care team	Privacy and Security Tiger Team	1					✓



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
HIV/AIDS: Hepatitis C Screening		1	✓				
HIV/AIDS: Syphilis Screening		1	✓				
Maternity Care: Care Coordination: Prenatal Record Present at time of Delivery	AMA/PCPI	1				✓	
Medication reconciliation upon/post discharge		1			✓		
Melanoma patients: Coordination of care		1			✓		
Nuclear Medicine patients: Communication to Referring Physician of Patient's Potential Risk for Fracture for All Patients Undergoing Bone Scintigraphy		1			✓		
Nutrition assessment and documentation of indicators (BMI, weight change, lean body mass evaluation)		1	✓				
Osteoporosis: Communication with the physician managing on-going care post fracture		1			✓		
Pressure ulcer risk assessment and prevention		1				✓	
Problem based plan documentation		1				✓	
Provider specialties (number and type) involved in patient condition treatment and documentation of visit results and recommendations		1	✓				
Timely Transmission of Transition Record		1			✓		
Domain: Clinical Appropriateness (147 measures)							
Sub-Domain: Appropriate/Efficient Use of Medications (69 measures)							
Measure Concept: Measures assessing appropriate medication treatments, including overuse and/or underuse (47 measures)							
Acute Bronchitis: Avoidance of Antibiotic Treatment	NCQA's HEDIS	1			✓		
Acute Myocardial Infarction/Heart Failure measures		1	✓				
Acute Otitis Externa: Systemic antimicrobial therapy (inappropriate		1			✓		



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
use)							
Acute Otitis Externa: Topical Therapy		1			✓		
Adjuvant chemotherapy recommended for patients with AJCC stage IA NSCLC; AJCC stage IB or II NSCLC (lower score is better)		1					✓
Annual Monitoring for Patients on Persistent Medications	NCQA's HEDIS	1			✓		
Antibiotic Utilization	NCQA's HEDIS	1			✓		
Antidepressant Medication Management	NCQA's HEDIS	1			✓		
Anti-EGFR MoAb therapy received by patients with KRAS mutation (lower score is better)		1			✓		
Asthma measures		1	✓				
Asthma: Management of Asthma Controller and Reliever Medications in Ambulatory Care Setting	AMA/PCPI	1				✓	
Asthma: Pharmacologic Therapy for Persistent Asthma in Ambulatory Care Setting	AMA/PCPI	1				✓	
Asthma: Medication therapy (underuse measure)	Pharmacy Quality Alliance	1			✓		
Asthma: Use of Appropriate Medications	NCQA's HEDIS	1			✓		
Atrial Fibrillation and Atrial Flutter: Chronic anticoagulation therapy		1			✓		
Bevacizumab received by patients with initial AJCC stage IV or distant metastatic NSCLC with squamous histology (lower score is better)		1					✓
Chemotherapy administered within the last 2 weeks of life (lower score is better)		1			✓		
Chronic Obstructive Pulmonary Disease: Inhaled bronchodilator therapy		1	✓				



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Community Acquired Bacterial Pneumonia: Empiric antibiotic		1			✓		
Coronary Artery Disease: ACE/ARB, Beta Blocker, Antiplatelet therapy	CMS PQRI	1	✓				
Decision support tool: Medication management		1				✓	
Diabetes measures		1	✓				
Disease Modifying Anti-Rheumatic Drug Therapy	NCQA's HEDIS	1			✓		
Hepatitis C: Antiviral treatment prescribed		1	✓				
HIT system that captures data to enable active care management (medication adherence, remote monitoring of vital signs, functional status)		1					✓
HIV/AIDS: Adolescent and Adult Patients With HIV/AIDS who are Prescribed Potent Antiretroviral Therapy		1			✓		
Medication adherence		1				✓	
Medication adherence: Medication possession ratio		1				✓	
Medication adherence: Proportion of days covered		1				✓	
Medication reconciliation upon/post discharge	NCQA's HEDIS	1			✓		
Oncology: Hormonal Therapy for Stage IC through IIIC, ER/PR Positive Breast Cancer		1	✓				
Osteoarthritis: Anti-inflammatory/analgesic therapy		1			✓		
Osteoporosis: Pharmacological therapy		1			✓		
Otitis Media with Effusion: Antihistamines or decongestants (inappropriate use)		1			✓		
Otitis Media with Effusion: Systemic antimicrobials (inappropriate use)		1			✓		



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Otitis Media with Effusion: Systemic corticosteroids (inappropriate use)		1			✓		
Perioperative Care: Selection of prophylactic antibiotic w/ first or second generation cephalosporin		1	✓				
Potentially Harmful Drug-Disease Interactions in the Elderly	NCQA's HEDIS	1			✓		
Prescription order, fill, and adherence rates		1		✓			
Rituximab administered when CD-20 antigen expression is negative or undocumented (lower score is better)		1					✓
Sinusitis: Appropriate Choice of Antibiotic: First Line Antibiotics Prescribed for Patients with Acute Bacterial Rhinosinusitis	AMA/PCPI	1				✓	
Sinusitis: Watchful Waiting for ABRS: Observation of Acute Sinusitis for Patients With Mild Illness & Potential Need for Follow-Up Visit if Observation Failure(underuse)	AMA/PCPI	1				✓	
Suboptimal control of hypertension in diabetics (underuse measure)	Pharmacy Quality Alliance	1			✓		
Tamoxifen or aromatase inhibitor received when ER/PR status is negative or undocumented (lower score is better)		1					✓
Trastuzumab received when Her-2/neu is negative or undocumented (lower score is better)		1					✓
Use of High-Risk Medications in the Elderly	NCQA's HEDIS	1			✓		
Utility of existing patient medication-related communication from drug benefit companies to physicians		1				✓	
Domain: Clinical Appropriateness (147 measures)							
Sub-Domain: Appropriate/Efficient Use of Medications (69 measures)							
Measure Concept: Measures of medication use linked to adherence outcomes (7 measures)							



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
HIT system that captures data to enable active care management (medication adherence, remote monitoring of vital signs, functional status)		1					✓
HIT system that provides providers with accurate medication fulfillment histories		1		✓			
HIV/AIDS: Viral Load		1	✓				
Medication adherence	National Voluntary Consensus Standards for Medication Management	2			✓	✓	
Medication adherence: Proportion of days covered/gaps in therapy	Pharmacy Quality Alliance	1			✓		
Medication management	National Voluntary Consensus Standards for Medication Management	1			✓		
Prescription order, fill, and adherence rates		1		✓			
Domain: Clinical Appropriateness (147 measures)							
Sub-Domain: Appropriate/Efficient Use of Medications (69 measures)							
Measure Concept: Measures assessing usage rates for generic vs. brand name medications (4 measures)							
Acute Myocardial Infarction/Heart Failure measures		1	✓				
Asthma measures		1	✓				
Dashboard tool: Generic vs. brand name medications dispensed		1				✓	
Diabetes measures		1	✓				
Domain: Clinical Appropriateness (147 measures)							
Sub-Domain: Appropriate/Efficient Use of Medications (69 measures)							
Measure Concept: Measures assessing the appropriate use of cardioprotective medications (aspirin, angiotensin-converting enzyme inhibitors, and statins) in individuals at high risk of experiencing heart attacks and strokes (19 measures)							



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Acute Myocardial Infarction measures	The Joint Commission	1			✓		
Acute Myocardial Infarction: ASA within 24h pre ED arrival or in ED		1			✓		
Acute Myocardial Infarction: Aspirin and beta blockers		1	✓				
Adult Kidney Disease: ACE/ARB Therapy	AMA/PCPI	1				✓	
Contraindications to medications		1			✓		
Coronary Artery Disease: Beta-Blocker Therapy-Prior Myocardial Infarction		1	✓				
Coronary Artery Disease: ACE/ARB Therapy-Diabetes or Left Ventricular Systolic Dysfunction		1	✓				
Coronary Artery Disease: Antiplatelet Therapy		1	✓				
Coronary Artery Disease: Lipid-lowering therapy, antiplatelet therapy, ACE/ARBs and other cardio therapies	CMS PQRI	1			✓		
Decision support tool: Medication management		1				✓	
Diabetes: Aspirin Use	AMA/PCPI	1				✓	
Heart Failure measures	The Joint Commission	1			✓		
Heart Failure: Beta-Blocker Therapy for Left Ventricular Systolic Dysfunction		1	✓				
Heart Failure: ACE inhibitors		1	✓				
Heart Failure: ACE/ARB Therapy for Left Ventricular Systolic Dysfunction		1	✓				
Medication adherence	Morisky scale	1				✓	
Persistent Use of Beta Blocker Treatment After Heart Attack	NCQA's HEDIS	1			✓		
Stroke measures	The Joint Commission	1			✓		
Venous thromboembolism measures	The Joint Commission	1			✓		



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Domain: Care Coordination (71 measures)							
Sub-Domain: Effective Care Planning (26 measures)							
Measure Concept: Measures assessing adherence to a comprehensive care plan in the EHR with an up to date problem list and care plan that reflects goals of care (13 measures)							
Annual Monitoring for Patients on Persistent Medications	NCQA's HEDIS	1			✓		
CAHPS: Doctors know medical history	AHRQ	1			✓		
Chemotherapy treatment summary completed/provided to patient and provider within 3 months of chemotherapy end		1					✓
Follow-Up After Hospitalization for Mental Illness	NCQA's HEDIS	1			✓		
HIV/AIDS: CD4 Counts		1	✓				
HIV/AIDS: Medical Visits		1	✓				
Medication reconciliation upon/post discharge	NCQA's HEDIS	1			✓		
Nutrition assessment and documentation of indicators (BMI, weight change, lean body mass evaluation)		1	✓				
Patient care plans		1				✓	
Physician Orders/Medical Orders for Life Sustaining Treatment (POLST/MOLST)		1				✓	
Pressure ulcer risk assessment and prevention		1				✓	
Problem based plan documentation		1				✓	
Treatment received per patient preference		1				✓	
Domain: Care Coordination (71 measures)							
Sub-Domain: Effective Care Planning (26 measures)							
Measure Concept: Measures of an Advance Care Plan as a product of shared decision making (12 measures)							



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Advance care plan documentation/discussion	Respecting Choices program	5	✓	✓		✓	
Decision support tool: Medication management		1					✓
Dementia: Comprehensive End of Life Counseling/ Advance Care Planning	AMA/PCPI	1				✓	
Depression screening		1				✓	
Fall risk assessment/ management		1				✓	
Hospice enrollment or palliative care referral		1			✓		
Hospice enrollment within 3 days of death; 7 days of death (lower score is better)		1			✓		
Hospice or palliative care discussed within the last 2 months of life		1			✓		
Physician Orders/Medical Orders for Life Sustaining Treatment (POLST/MOLST)		2	✓			✓	
Pressure ulcer risk assessment and prevention		1				✓	
Stroke and Stroke Rehabilitation: Advance Care Plan	AMA/PCPI	1				✓	
Surrogate contact information		1	✓				
Domain: Care Coordination (71 measures)							
Sub-Domain: Effective Care Planning (26 measures)							
Measure Concept: Measures of the success of a self management plan for patients with conditions where a self management plan might reasonably be considered to benefit them (6 measures)							
Depression screening		1				✓	
Diabetes: Self-Management Education/Training	AMA/PCPI	1				✓	
Fall risk assessment/ management		1				✓	
Patients (chronic disease) with a self-management program		1				✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Pressure ulcer risk assessment and prevention		1				✓	
Self-management plans and procedures and evaluation of compliance		1	✓				
Domain: Care Coordination (71 measures)							
Sub-Domain: Care Transitions (21 measures)							
Measure Concept: Measures of reconciliation of all medications when receiving a patient from a different provider (4 measures)							
Medication reconciliation	AHRQ	2	✓		✓		
Medication reconciliation upon admission		1				✓	
Medication reconciliation upon admission (Adult Kidney Disease)	AMA/PCPI	1				✓	
Medication reconciliation upon/post discharge	CMS PQRI; NCQA's HEDIS	3			✓		
<i>Domain: Care Coordination (71 measures)</i>							
<i>Sub-Domain: Care Transitions (21 measures)</i>							
<i>Measure Concept: Measures of patient and family experience of care coordination across a care transition (e.g. questions within HCAHP surveys) (11 measures)</i>							
CAHPS	AHRQ	2	✓		✓		
CAHPS Clinician and Group Survey	AHRQ	1			✓		
CAHPS Surgical Care Survey	AHRQ	1				✓	
Care Transitions Measure (CTM-3)	AHRQ	1	✓				
Depression screening		1				✓	
End-of-life planning		1				✓	
Fall risk assessment/ management		1				✓	
HCAHPS	AHRQ	3	✓		✓	✓	
Newborn screening for congenital heart disease		1			✓		



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Plan of care discussion and continuity of implementation		1				✓	
Pressure ulcer risk assessment and prevention		1				✓	
Domain: Care Coordination (71 measures)							
Sub-Domain: Care Transitions (21 measures)							
Measure Concept: Composite measures assessing receipt by both the care team members and the patient/caregiver of a comprehensive clinical summary after any care transition (8 measures)							
CAHPS: PCP Informed about care from others	AHRQ	1			✓		
Clinical summary review with patient after care transition		1				✓	
End-of-life planning		1				✓	
Exposure time reported for procedures using fluoroscopy	The Joint Commission	1			✓		
Medication reconciliation upon/post discharge		1			✓		
Radiology: Radiation Dose Optimization	American Board of Radiology; American Board of Medical Specialties; American College of Radiology; AMA/PCPI	1				✓	
Transition Record with Specified Elements Received upon ED Discharge		1			✓		
Transition Record with Specified Elements Received upon inpatient discharge		1			✓		
Domain: Care Coordination (71 measures)							
Sub-Domain: Appropriate and Timely Follow-Up (28 measures)							
Measure Concept: Measures assessing timeliness of provider response, and appropriate response, to clinical information, including lab and diagnostic results (28 measures)							
Acute Myocardial Infarction 7: Thrombolytics w/in 30 min	The Joint Commission	1			✓		



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Acute Myocardial Infarction 8: PCI Received within 90 min	The Joint Commission	1			✓		
Adjuvant chemotherapy received within 9 months of diagnosis by patients with AJCC stage II or III rectal cancer		1					✓
Adjuvant chemotherapy recommended within 9 months of diagnosis for patients with AJCC stage II or III rectal cancer		1	✓				
Adjuvant cisplatin-based chemotherapy received within 60 days after curative resection by patients with AJCC stage II or IIIA NSCLC		1					✓
CEA within 4 months of curative resection for colorectal cancer		1					✓
Chemotherapy recommended within 4 months of diagnosis for women under 70 with AJCC stage I (T1c) to III ER/PR negative breast cancer		1					✓
Clinical lab results and patient follow-up		1	✓				
Clinical results management tool		1				✓	
Colonoscopy before or within 6 months of curative colorectal resection		1					✓
Combination chemotherapy received within 4 months of diagnosis by women under 70 with AJCC stage I (T1c) to III ER/PR negative breast cancer		1					✓
Disease status assessed by imaging documented prior to administration of the third cycle of first-line chemotherapy for patients with initial AJCC stage IV or distant metastatic NSCLCAII		1					✓
Granulocytic growth factor administered with CHOP to patients 65 and older with NHL		1					✓
HAART for Patients with AIDS (HIV/AIDS)		1	✓				
HIV/AIDS: ARV for Prevention of Maternal to Child Transmission		1	✓				



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
HIV/AIDS: PCP Prophylaxis		1	✓				
HIV/AIDS: Viral Load		1	✓				
PN 5 (Antibiotic Timing)	The Joint Commission	1			✓		
Provider timeliness/response		1	✓		✓		
Radiology: Communication of suspicious findings from the diagnostic mammogram to the patient/practice managing ongoing care		1			✓		
Radiology: CT or MRI Reports	AMA/PCPI	1	✓				
Radiology: Imaging for Transient Ischemic Attack or Ischemic Stroke	AMA/PCPI	1				✓	
Reduction in time to create unstructured and structured documents	HITSP C83 specification	1			✓		
Renal function assessed between first and second administration of bisphosphonates		1					✓
Surgical Care Improvement Program (Various)	The Joint Commission	1			✓		
Stenosis measurement in carotid imaging studies		1	✓				
Stroke and Stroke Rehabilitation	AMA/PCPI	1				✓	
Timely Transmission of Transition Record		1			✓		
Domain: Patient Safety (65 measures)							
Sub-Domain: Medication Safety (23 measures)							
Measure Concept: Measures of adverse drug event (ADE) reporting (10 measures)							
Adverse drug event	AHRQ Common Formats	1	✓				
Adverse drug event – treatment		1				✓	
Adverse event due to HIT defects/usability		1		✓			



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Exposure time reported for procedures using fluoroscopy	The Joint Commission	1			✓		
Medication administration process data for tracking adverse drug events		1				✓	
Medication reconciliation/ adverse drug event review upon admission		1				✓	
Monitor pharmacy medications and compliance with FDA reporting		1			✓		
Participation in a Systematic National Dose Index Registry.		1		✓			
Potentially Harmful Drug-Disease Interactions in the Elderly	NCQA's HEDIS	1			✓		
Radiology: Radiation Dose Optimization	American Board of Radiology; American Board of Medical Specialties; American College of Radiology; AMA/PCPI	1				✓	
Domain: Patient Safety (65 measures)							
Sub-Domain: Medication Safety (23 measures)							
Measure Concept: Measures monitoring drug safety for patients who are on chronic medical therapy (8 measures)							
Annual Monitoring for Patients on Persistent Medications	NCQA's HEDIS	1			✓		
Appropriate documentation prior to administration of ESAs		1	✓				
Baseline iron stores documented within 90 days prior to administration of ESA		1	✓				
Decision support tool: Prescriptions linked to patient clinical results		1				✓	
Drug levels for anti-epileptics and other drugs		1	✓				
HbA1c < 10g/dL documented within 2 weeks prior to administration of ESA		1	✓				
INR monitoring for patients on warfarin		1	✓				



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Medication reconciliation		1					✓
Domain: Patient Safety (65 measures)							
Sub-Domain: Medication Safety (23 measures)							
Measure Concept: Measures of patient reported adverse events (6 measures)							
Constipation assessed at time of narcotic prescription or following visit		1			✓		
Injury circumstances		1			✓		
Medication reconciliation: Reason for why home medications were discontinued		1				✓	
Monitor pharmacy medications and compliance with FDA reporting		1				✓	
Patient identification errors and near misses	AHRQ Common Formats	1				✓	
Verification of written orders for chemotherapy drug administration		1	✓				
Domain: Patient Safety (65 measures)							
Sub-Domain: Hospital Associated Events (43 measures)							
Measure Concept: Measures of process and outcome improvement of hospital associated infections (22 measures)							
Anesthesiology and Critical Care: Prevention of catheter-related bloodstream infections w/ central venous catheter insertion protocol		1			✓		
Anesthesiology and Critical Care: Prevention of ventilator-associated pneumonia w/ head elevation		1			✓		
Catheter-associated Urinary Tract Infection Outcome	National Healthcare Safety Network	1		✓			
Central line-associated Bloodstream Infection Outcome	National Healthcare Safety Network	1		✓			



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Central venous catheter infections		2			✓		
Clinical dashboard tool: Hospital associated infections		1				✓	
Colon resection outcomes	American College of Surgeons National Surgical Quality Improvement Program	1	✓				
Compliance with IHI bundles and handwashing	Institute for Healthcare Improvement	1					✓
Healthcare Associated Infections	AHRQ Common Formats	1	✓				
Hospital Associated (Acquired) Infections		2	✓			✓	
Longitudinal monitoring for hospital associated infections and events		1				✓	
Medication reconciliation		1					✓
Potentially preventable complications tool		2	✓				
Pressure ulcer risk assessment and prevention		1				✓	
Pressure ulcers		1				✓	
Stroke and Stroke Rehabilitation: Avoidable Complications - Urinary Tract Infections	AMA/PCPI	1				✓	
Surgery outcomes for elderly (risk and procedure mix adjusted)	American College of Surgeons National Surgical Quality Improvement Program	1	✓				
Surgical site infection	American College of Surgeons National Surgical Quality Improvement Program	1	✓				
Surgical Site Infection Outcome	American College of Surgeons National Surgical Quality Improvement Program; National	1		✓			



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
	Healthcare Safety Network						
Urinary tract infection	American College of Surgeons National Surgical Quality Improvement Program	1	✓				
Urinary tract infection Outcome	American College of Surgeons National Surgical Quality Improvement Program	1		✓			
Vascular surgery lower extremity bypass	American College of Surgeons National Surgical Quality Improvement Program	1	✓				
Domain: Patient Safety (65 measures)							
Sub-Domain: Hospital Associated Events (43 measures)							
Measure Concept: Measures of venous thromboembolism (VTE) prophylaxis and VTE rates (11 measures)							
Activity metrics for patients in hospital or long-term care bed		1				✓	
Adverse event	AHRQ Common Formats	1				✓	
D-dimer testing for PE		1				✓	
Perioperative Care: Venous thromboembolism (VTE) prophylaxis		1	✓				
Surgical Care Improvement Program VTE and VTE Indicators	The Joint Commission	1			✓		
Stroke and Stroke Rehabilitation: Deep Vein Thrombosis Prophylaxis (DVT) for Ischemic Stroke or Intracranial Hemorrhage	AMA/PCPI	1				✓	
Stroke: VTE prophylaxis received/ordered by end of hospital day 2 or indication for why none was given		1				✓	
Structural measures to support longitudinal monitoring of patients undergoing treatment for hospital acquired infections		1					✓
Surgical patients: VTE prophylaxis ordered to be given/received		1				✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
within 24 hours pre-incision start time or within 24 hours post surgery end time							
Use of enoxaparin		1	✓				
Use of mechanical prophylaxis		1			✓		
Domain: Patient Safety (65 measures)							
Sub-Domain: Hospital Associated Events (43 measures)							
Measure Concept: Measures of falls events and screening (10 measures)							
Culturally appropriate patient education materials and measurement of impact on clinical outcomes		1				✓	
Decubitus ulcers		1				✓	
Fall risk assessment/management	AHRQ Common Formats, NCQA's HEDIS	5	✓		✓	✓	
Health risk assessment tool		1			✓		
Iatrogenic pneumothorax		1				✓	
Mental status and ambulatory ability		1			✓		
Patient disclosure of SREs or other adverse events		1				✓	
Stroke and Stroke Rehabilitation: Avoidable Complications - Fall with Injury	AMA/PCPI	1				✓	
Use of sedating medication		1	✓				
Use of sensing devices to determine patient restlessness for early identification of patients attempting to climb out of bed		1				✓	
Domain: Population and Public Health (73 measures)							
Sub-Domain: Healthy Lifestyle Behaviors (41 measures)							
Measure Concept: Measures of use/availability of services that promote healthy lifestyles (smoking cessation, body mass index management, patient							



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
health literacy): A) Smoking cessation - focused specifically on quit rate for patients within a reporting period (31 measures)							
Access to Preventive/Ambulatory Health Services (Adults)	NCQA's HEDIS	1			✓		
Ambulatory Care/Inpatient Utilization	NCQA's HEDIS	1			✓		
Aspirin therapy		1	✓				
Blood pressure control	Joint National Committee on the Prevention, Detection, Evaluation, and Treatment of High Blood Pressure	1	✓				
BMI assessment		1	✓				
BMI assessment (Adults)	NCQA's HEDIS	1			✓		
BMI improvement: Patients with reduced BMI out of patients with BMI>25 (Adults)		1				✓	
Chlamydia screening		1	✓				
Geographic data for patients		1	✓				
Hepatitis B vaccine to newborns who have chronic Hepatitis B		1	✓				
HIV/AIDS: Screening for infectious diseases		1	✓				
Immunization - Influenza		1	✓				
Immunizations (Adolescent)		1	✓				
Infectious disease risk factors		1	✓				
Initiation and Engagement of Alcohol/Other Drug Dependence Treatment	NCQA's HEDIS	1			✓		
Lipid control (patients with abnormal lipids)		1	✓				
Lipid screening (All patients)		1	✓				
Mental Health Utilization	NCQA's HEDIS	1			✓		



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Physical activity		1	✓				
Preventive Screenings	USPSTF	1	✓				
Screening of pregnant women for infectious diseases		1	✓				
Self-Management Activation	Omaha Documentation System; Prochaska's Stages of Change Ratings	1		✓			
Sexual activity status		1	✓				
Smoking cessation	NCQA's HEDIS	4	✓		✓	✓	
Smoking cessation (AMI patients)		1				✓	
Smoking cessation (Heart failure patients)		1				✓	
Smoking cessation (Pneumonia patients)		1				✓	
Smoking status (Adolescents)		1	✓				
Structural measures to support longitudinal monitoring of patients undergoing treatment for hospital acquired infections		1					✓
Vaccine tracking		1	✓				
Vital sign documentation and longitudinal change		1	✓				
Domain: Population and Public Health (73 measures)							
Sub-Domain: Healthy Lifestyle Behaviors (41 measures)							
Measure Concept: Measures of use/availability of services that promote healthy lifestyles (smoking cessation, body mass index management, patient health literacy): B) Body Mass Index - focused specifically on tracking longitudinal change to determine patient outcome (15 measures)							
BMI assessment		2	✓	✓		✓	
BMI assessment and follow-up plan		1				✓	
BMI improvement: Patients with reduced BMI out of patients with BMI>25 (Adults)		1				✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Geographic data for patients		1	✓				
Infectious disease risk factors		1	✓				
Initiation and Engagement of Alcohol/Other Drug Dependence Treatment	NCQA's HEDIS	1			✓		
Lean body mass assessment		1	✓				
Longitudinal tool services that enhance ability to impact patients' smoking cessation, physical activity, obesity, and alcohol use		1				✓	
Self-Management Activation	Omaha Documentation System; Prochaska's Stages of Change Ratings	1		✓			
Sexual activity status		1	✓				
Smoking cessation	NCQA's HEDIS	1			✓		
Smoking status (Adolescents)		1	✓				
Vital sign documentation and longitudinal change		1	✓				
Waist circumference assessment		1	✓				
Weight classified based on BMI percentiles		1				✓	
Domain: Population and Public Health (73 measures)							
Sub-Domain: Healthy Lifestyle Behaviors (41 measures)							
Measure Concept: Measures of screening for alcohol use using a validated tool (13 measures)							
Alcohol Screening and Intervention	AMA/PCPI; The Joint Commission; VA; IHS	1	✓	✓			
Alcohol Use Disorders Identification Test (AUDIT-C)		1				✓	
Alcohol Use: Days in which an individual exceeds low-risk drinking	NIAAA	1	✓				
Aspirin therapy	National Commission on	1	✓				



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
	Prevention Priorities						
BMI assessment and follow-up plan	National Commission on Prevention Priorities	1	✓				
Cervical cancer screening	National Commission on Prevention Priorities	1	✓				
Chlamydia screening	National Commission on Prevention Priorities	1	✓				
Immunization - Influenza	National Commission on Prevention Priorities	1	✓				
Infectious disease risk factors		1		✓			
Initiation and Engagement of Alcohol/Other Drug Dependence Treatment	NCQA's HEDIS	1			✓		
Longitudinal tool services that enhance ability to impact patients' smoking cessation, physical activity, obesity, and alcohol use		1	✓				✓
Preventive Care/Screening: Unhealthy Alcohol Use: Screening and Counseling		1			✓		
Smoking cessation	NCQA's HEDIS; National Commission on Prevention Priorities	2	✓		✓		
Domain: Population and Public Health (73 measures)							
Sub-Domain: Effective Preventative Services (30 measures)							
Measure Concept: Measures of mental health screening using a validated instrument (19 measures)							
Alcohol Use Disorders Identification Test (AUDIT-C)		1				✓	
Aspirin therapy	National Commission on Prevention Priorities	1	✓				



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
BMI assessment and follow-up plan	National Commission on Prevention Priorities	1	✓				
Cervical cancer screening	National Commission on Prevention Priorities	1	✓				
Chlamydia screening	National Commission on Prevention Priorities	1	✓				
Dementia: Screening for Depressive Symptoms	AMA/PCPI	1				✓	
Depression screening	Patient Health Questionnaire (PHQ-9)	2	✓			✓	
Depression screening (12+ years)	CMS PQRI	1		✓			
Depression Screening (Adult Major Depressive Disorder)	AMA/PCPI	1				✓	
Depression screening (Adults)	CMS PQRI	1	✓				
Depression/mental health screening		1				✓	
Depression: Postpartum Screening	Edinburgh Post Partum Depression Scale	2	✓	✓			
Immunization - Influenza	National Commission on Prevention Priorities	1	✓				
Longitudinal tool services that enhance ability to assess mental health status		1	✓				
Medicare Health Outcomes Survey	CMS	1			✓		
Mental health screening for youth		1			✓		
Smoking cessation	National Commission on Prevention Priorities	1	✓				
Suicide risk assessment		1				✓	
Well-care for children and adolescents: Immunizations,	NCQA's HEDIS	1					✓



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Screenings, Development, Access to Care							
Domain: Population and Public Health (73 measures)							
Sub-Domain: Effective Preventative Services (30 measures)							
Measure Concept: Measures of blood pressure focused specifically on tracking longitudinal change to determine patient outcome (6 measures)							
Adult Kidney Disease: Blood Pressure Management	AMA/PCPI	1				✓	
Blood pressure control	NCQA's HEDIS; CMS PQRI	3	✓	✓	✓		
Coronary Artery Disease: Blood Pressure Control		1		✓			
Diabetes: Blood pressure control	NCQA's HEDIS	1			✓		
Diabetes: Blood Pressure Management	AMA/PCPI	1				✓	
Graphical tool: Longitudinal assessment of blood pressure		1				✓	
Domain: Population and Public Health (73 measures)							
Sub-Domain: Effective Preventative Services (30 measures)							
Measure Concept: Measures of glucose monitoring focused specifically on tracking longitudinal change to determine patient outcome (5 measures)							
Diabetes: A1c Management	AMA/PCPI	1				✓	
Diabetes: Glycemic control	NCQA's HEDIS	1			✓		
Graphical tool: Longitudinal assessment of blood glucose		1				✓	
HbA1c Poor Control	CMS PQRI	1	✓				
Longitudinal tool services that enhance ability to track, report on and provide clinical interventions associated with glucose values		1				✓	
Domain: Population and Public Health (73 measures)							
Sub-Domain: Health Equity (11 measures)							
Measure Concept: Measures with no discrepancy when comparing health outcomes among those within priority populations to those not within the							



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
priority populations (11 measures)							
Alcohol abuse screening for patients with specific causes of injuries (e.g., accidental alcohol poisoning)		1				✓	
Demographic patient information		1	✓				
Fall risk assessment/ management: Vision screen, gait screen, bone density scan, and review of prescription drugs		1				✓	
Home safety assessment for children		1				✓	
Immunizations (Infants, Children, Adolescents)	USPSTF	1	✓				
Medication management		1				✓	
Preventive Screenings	USPSTF	1	✓				
Race-associated disparities reduction	AHRQ	1				✓	
Suicide assessment for patients with drug poisoning prescription		1				✓	
Suicide attempts who are referred for follow-up psychological evaluation or other care		1				✓	
Tool that stratifies quality measures by patient demographics		1				✓	
Domain: Other (33 measures)							
Sub-Domain: Other (33 measures)							
Measure Concept: Measures that assess preventable ED visits (5 measures)							
Access to primary care		1		✓		✓	
Depression screening		1				✓	
Fall risk assessment/ management		1				✓	
HIT system that supports care coordination across settings		1		✓			
Pressure ulcer risk assessment and prevention		1				✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Domain: Other (33 measures)							
Sub-Domain: Other (33 measures)							
Measure Concept: Measures that assess adherence to clinical practice standards (appropriate cardiac/cancer treatments) (25 measures)							
Acute Myocardial Infarction 8: PCI Received within 90 min		1				✓	
Acute Myocardial Infarction: ASA within 24h pre ED arrival or in ED		1				✓	
Acute Myocardial Infarction: LDL cholesterol value		1				✓	
Acute Myocardial Infarction: Thrombolytic agent received within 30 min arrival		1				✓	
Adjuvant chemotherapy recommended within 4 months of diagnosis for patients with AJCC stage III colon cancer		1	✓				
Adjuvant chemotherapy recommended within 9 months of diagnosis for patients with AJCC stage II or III rectal cancer		1	✓				
Adjuvant chemotherapy recommended/received for patients with AJCC stage II or IIIA NSCLC		1	✓				
All ischemic stroke or TIA or intracranial hemorrhage pts or pts with >1 documented symptom consistent with ischemic stroke or TIA or intracranial hemorrhage >18yrs: final reports of brain MRI and head CT done within 24 hrs of arrival documents presence/absence of hemorrhage, mass lesion, or acute infarct;		1				✓	
Anti-EGFR MoAb therapy received by patients with KRAS mutation (lower score is better)		1			✓		
CABG pts: prophylactic abx discontinued within 48hrs post CABG anesthesia end time		1				✓	
Cardiac surgical pts: d/c on ACE/ARB, ADP inhibitor, antiarrhythmic, aspirin, Beta Blocker, Coumadin, lipid lowering agent (or not indicated or contraindication)		1				✓	



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Colon cancer: 12 or more lymph nodes examined for resected colon cancer		1			✓		
Correlating problem lists with medication lists/diagnoses		1				✓	
Heart Failure: ACE/ARB Therapy for Left Ventricular Systolic Dysfunction		1				✓	
Inappropriate use of probably benign assessment category in mammography screening		1	✓				
IV bisphosphonates administered for breast cancer bone metastases		1			✓		
KRAS testing for patients with metastatic colorectal cancer who received anti-EGFR MoAb therapy		1			✓		
Newborn screening for congenital heart disease		1			✓	✓	
Number of lymph nodes documented for resected colon cancer		1			✓		
Patient satisfaction on the completeness of the clinical/discharge summary		1				✓	
Performance status documented for patients with initial AJCC stage IV or distant metastatic NSCLC		1	✓				
Radiology: Cardiac surgical patients - Controlled post-operative blood glucose		1				✓	
Stroke: Door to CT/MRI completion time		1				✓	
Test for Her-2/neu gene overexpression		1			✓		
Trastuzumab recommended/received for patients with AJCC stage I (T1c) to III Her-2/neu positive breast cancer		1	✓				
Domain: Other (33 measures)							
Sub-Domain: Other (33 measures)							



Measure	Measure Developer/ Industry Reference ⁸	# of Respondents	Q1a	Q1b	Q1c	Q1d	Q2
Measure Concept: Measures that assess combined quality and cost measures at each level and site of care reflecting potential defects in care (5 measures)							
Depression screening		1				✓	
Fall risk assessment/ management		1				✓	
Newborn screening for congenital heart disease		1				✓	
Pressure Ulcer Risk and Prevention		1	✓				
Pressure ulcer risk assessment and prevention		1				✓	
Domain: Other (33 measures)							
Sub-Domain: Other (33 measures)							
Measure Concept: Measures of medication error near misses (1 measure)							
Adverse drug event	AHRQ Common Formats	1	✓				
Domain: Other (33 measures)							
Sub-Domain: Other (33 measures)							
Measure Concept: Measures of patient identification errors and near misses (1 measure)							
Patient identification errors and near misses	AHRQ Common Formats	1	✓				
Domain: Other (33 measures)							
Sub-Domain: Other (33 measures)							
Measure Concept: Measures of common EHR-related errors (mechanism to report EHR related errors and delays in care to improve EHRs) (1 measure)							
Adverse drug event	AHRQ Common Formats	1	✓				



Appendix D: Measure Concept Feedback and Measure Recommendations per Responses to Question 6

Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
Self-Management/Activation	Measures of patient activation, including skills, knowledge, and self-efficacy	<ul style="list-style-type: none"> ▪ Add detail to measure concept definition ▪ Ensure measures incorporated into Meaningful Use are evidence-informed and tested ▪ Revise definition to remove reference to "whether the patient has been led in the right direction by his provider" because measures will be hard to define ▪ Supports measure concept ▪ Unclear/difficult to measure automatically and reliably report 	<ul style="list-style-type: none"> ▪ None
Self-Management/Activation	Measures of patient self-management	<ul style="list-style-type: none"> ▪ Add detail to measure concept definition ▪ Recommend additional development before incorporating into Meaningful Use 	<ul style="list-style-type: none"> ▪ Physician's assessment of patient self-management, and use and distribution of educational materials and/or referral to a health care coach or other appropriate resource ▪ Percent of patients with an electronic version of recommended preventative care (age and gender specific)
Honoring Patient Preferences and Shared Decision Making	Measures of shared decision making or decision quality that address a combination of patient knowledge and incorporation of patient preferences	<ul style="list-style-type: none"> ▪ Add detail to measure concept definition ▪ Address data collection capability concerns; data collection efforts and patient education efforts will be significant to report these measures ▪ Make measure concept condition-specific ▪ Unclear/ difficult to measure automatically and reliably report 	<ul style="list-style-type: none"> ▪ Shared decision-making questions should be included CAHPS ▪ Fully integrate on-line decision aids into EHRs through health IT-enabled technology ▪ Documentation of how a patient wants to be contacted ▪ Physician Orders for Life-Sustaining Treatment (POLST) ▪ Percent of patient response to "On a scale of 1-5, how much did you participate with your provider in the



Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
			creation and implementation of your healthcare plan?"
Honoring Patient Preferences and Shared Decision Making	Measures of patient preferences/experiences of care	<ul style="list-style-type: none"> ▪ Add detail to measure concept definition ▪ Address data collection capability concerns; data collection efforts and patient education efforts will be significant to report these measures ▪ Unclear/ difficult to measure automatically and reliably report 	<ul style="list-style-type: none"> ▪ Documentation of how a patient wants to be contacted ▪ CAHPS Medical Home
Patient Health Outcomes	Measures of patient health outcomes, including health risk status, functional health status, and global measures of patient health	<ul style="list-style-type: none"> ▪ Add detail to measure concept definition 	<ul style="list-style-type: none"> ▪ Medication management ▪ Medication adherence ▪ Lifestyle change modification ▪ Rehabilitation ▪ Coordination of services across providers ▪ Hospital to clinic integration ▪ Use of community resources ▪ Self management services ▪ Child-specific health outcomes: diabetes, asthma, ADHD, depression, children with or at risk for developmental disabilities, children with chronic and disabling medical conditions, quality of life measures, child well-being index
Community Resources Coordination/Connection	Measures of patient access to community resources for improved/sustainable care coordination	<ul style="list-style-type: none"> ▪ Add detail to measure concept definition ▪ Recommend additional development before incorporating into Meaningful Use ▪ Measure concept will be difficult for rural communities to implement ▪ Relates to community services/local funding versus health IT ▪ Requires extensive local knowledge 	<ul style="list-style-type: none"> ▪ None



Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
		<ul style="list-style-type: none"> Measures use of community resources versus access to resources Supports measure concept Unclear/ difficult to measure automatically and reliably report 	
Appropriate/Efficient Use of Facilities	Measures of all cause readmissions and length of stay	<ul style="list-style-type: none"> Do not combine readmission rates and length of stay in one measure Only include inpatient measure concept Relates to community services/local funding versus health IT Concern with providers ability to demonstrate impact for those who rarely have patients in the hospital 	<ul style="list-style-type: none"> Readmission rates Preventable emergency department visit rates Planned readmissions Variance/dispersion measures such as number of appropriate readmissions for a given set of conditions Length of stay for patients by their admission diagnosis
Appropriate/Efficient Use of Facilities	Measures assessing ambulatory care-sensitive preventable admissions	<ul style="list-style-type: none"> Add detail to measure concept definition Focus on ability to display a report looking at those admissions (e.g., patients with chronic conditions who have not had a visit with their PCP in 6 months who get admitted) Address data collection capability concerns - data collection efforts would require inpatient/outpatient EHR integration and HIE integration which is not likely in the time anticipated by the measure concepts 	<ul style="list-style-type: none"> Ambulatory care sensitive preventable admissions Specific measurement to correct for differences in the availability of treatment intensity and resources between urban and rural settings AHRQ's Prevention Quality Indicators
Appropriate/Efficient Use of Diagnostic Tests	Measures assessing the appropriate use of diagnostic imaging procedures, with measures for redundancy, cumulative exposure, and appropriateness	<ul style="list-style-type: none"> Radiation exposure is more a measure of quality than safety Unclear/difficult to measure automatically and reliably report 	<ul style="list-style-type: none"> Imaging and health IT imaging informatics Reduction in use of inappropriate imaging tests Diagnostic tests which may lead to lifestyle changes which may serve in a preventative role Use of diagnostic procedures for patients with certain conditions



Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
Appropriate/Efficient Treatment of Chronic Disease across Multiple Sites of Care	Measures assessing the development of co-morbidities as a result of uncontrolled chronic disease (sequelae of uncontrolled diabetes)	<ul style="list-style-type: none"> ▪ Clarify what is meant by development of co-morbidities ▪ Supports measure concept 	<ul style="list-style-type: none"> ▪ Literacy level, patient understanding and follow-up with non-physician providers who deliver supportive evaluations of patient's ability to meet established goals and individualized treatment plans ▪ Research and development necessary to measure and improve care for patients with multiple chronic illnesses ▪ Population-based denominators needed for measures under this concept
Appropriate/Efficient Treatment of Chronic Disease across Multiple Sites of Care	Measures assessing reconciliation of the care plan for chronic disease patients across care settings and multiple specialists (process measure)	<ul style="list-style-type: none"> ▪ Recommend additional development before incorporating into Meaningful Use ▪ Unclear/difficult to measure automatically and reliably report ▪ Address data collection capability concerns- data collection efforts would require inpatient/outpatient EHR integration and HIE integration which is not likely in the time anticipated by the measure concepts ▪ Supports measure concept 	<ul style="list-style-type: none"> ▪ Should be the workflow equivalent of the care coordination measure around adherence to a care plan ▪ Related to the use of guideline-based care ▪ Research and development necessary to measure and improve care for patients with multiple chronic illnesses ▪ Features in EHRs with decision support and workflow functions
Appropriate/Efficient Use of Medications	Measures assessing appropriate medication treatments, including overuse and/or underuse	<ul style="list-style-type: none"> ▪ Recommend additional development before incorporating into Meaningful Use ▪ Add detail to measure concept definition ▪ Remove reference to "appropriateness, successful, and comprehensive" because they are vague and difficult to accurately measure 	<ul style="list-style-type: none"> ▪ Focus on chronic diseases identified and medications prescribed for specific patient (e.g., based on the NCQA "Use of appropriate medications for people with asthma" measure) ▪ Non-medication care modalities prior to or in conjunction with medication use: weight loss, nutritional restrictions and/or adherence ▪ Medication appropriateness (e.g. prescribing for acute respiratory infection (overuse) and ACE/ARB for



Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
			<p>DM-renal disease (underuse))</p> <ul style="list-style-type: none"> Consensus-based measures
Appropriate/Efficient Use of Medications	Measures of medication use linked to adherence outcomes	<ul style="list-style-type: none"> Recommend additional development before incorporating into Meaningful Use Unclear/difficult to measure automatically and reliably report 	<ul style="list-style-type: none"> NQF Measure ID# 0542 Ability to pay for medications Effectiveness of specific therapy with patients' other prescribed medications taken simultaneously Percent of patients for which EP retrieves and acts on prescription refill data obtained through e-Rx system Initial fill information
Appropriate/Efficient Use of Medications	Measures assessing usage rates for generic vs. brand name medications	<ul style="list-style-type: none"> Generic versus brand name medication data not necessarily available in EHR Add detail to measure concept definition Measure concept is associated with cost not quality Does not support measure concept - measures evaluating generic utilization are neither measures of clinical appropriateness nor clinical quality 	<ul style="list-style-type: none"> Adverse events associated with generic substitutes Prescription of generics where appropriate alternatives exist
Appropriate/Efficient Use of Medications	Measures assessing the appropriate use of cardioprotective medications (aspirin, angiotensin-converting enzyme inhibitors, and statins) in individuals at high risk of experiencing heart attacks and strokes.	<ul style="list-style-type: none"> Remove reference to "appropriateness, successful, and comprehensive" because they are vague and difficult to accurately measure Supports measure concept 	<ul style="list-style-type: none"> None
Effective Care Planning	Measures assessing adherence to a comprehensive care plan in the EHR with an up to date problem list and care plan that reflects goals of care	<ul style="list-style-type: none"> Add detail to measure concept definition Recommend additional development before incorporating into Meaningful Use Remove reference to problem list to track care coordination 	<ul style="list-style-type: none"> Mechanism for review and comment by patient on care plan Assessment/documentation of mental illness in care plan Workflow equivalent of the care



Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
		<ul style="list-style-type: none"> Unclear/difficult to measure automatically and reliably report Supports measure concept 	<ul style="list-style-type: none"> coordination measure around adherence to a care plan Related to the use of guideline-based care features in EHRs with decision support and workflow functions
Effective Care Planning	Measures of an Advance Care Plan as a product of shared decision making	<ul style="list-style-type: none"> Recommend additional development before incorporating into Meaningful Use Add detail to measure concept definition Address data collection capability concerns - Data collection efforts and patient education efforts will be significant Expand measure concept to include whether ACP was implemented and goals met Relate to entire process of end-of-life care Supports measure concept 	<ul style="list-style-type: none"> Physician Orders for Life-Sustaining Treatment (POLST)
Effective Care Planning	Measures of the success of a self management plan for patients with conditions where a self management plan might reasonably be considered to benefit them	<ul style="list-style-type: none"> Recommend additional development before incorporating into Meaningful Use Self-management plan should apply to all patients just not those with chronic condition Supports measure concept Unclear/difficult to measure automatically and reliably report 	<ul style="list-style-type: none"> Patient education and patient literacy
Care Transitions	Measures of reconciliation of all medications when receiving a patient from a different provider	<ul style="list-style-type: none"> Add detail to measure concept definition Address data collection capability concerns - data collection efforts and patient education efforts will be significant Recommend additional development before incorporating into Meaningful Use Difficult for information exchange related to medication reconciliation Supports measure concept 	<ul style="list-style-type: none"> Documented attempts to reconcile medications Percentage of medication data that clinician includes in the EHR for each patient; if EHR is supplying less than half of actual records, data will not be useful Structural measures
Care Transitions	Measures of patient and family experience of care coordination	<ul style="list-style-type: none"> Recommend additional development before incorporating into Meaningful Use 	<ul style="list-style-type: none"> Assessment of patient expectations CAHPS



Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
	across a care transition (e.g. questions within HCAHP surveys)	<ul style="list-style-type: none"> Does not support measure concept - HCAHPS surveys should not be included in patient medical record Separate measure concept into specific areas Investments should be made in this domain to advance the ability of current experience of care surveys to evaluate patient and family experience of care coordination during care transitions 	<ul style="list-style-type: none"> Assess adherence to a shared care plan, including questions related to community linkages, self-management support, and decision support using experience of care surveys Measure objective, evidence-based health outcomes not perceptions Assess patients' and providers' understanding of care plan
Care Transitions	Composite measures assessing receipt by both the care team members and the patient/caregiver of a comprehensive clinical summary after any care transition	<ul style="list-style-type: none"> Add detail to measure concept definition 	<ul style="list-style-type: none"> Confirmation that care by non-physician providers is included in patient record
Appropriate and Timely Follow-Up	Measures assessing timeliness of provider response, and appropriate response, to clinical information, including lab and diagnostic results	<ul style="list-style-type: none"> Add detail to measure concept definition Include referral and patient completion of referral process Unclear/difficult to measure automatically and reliably report Supports measure concept 	<ul style="list-style-type: none"> Reliable notification of lab result alert and subsequent action Timeliness of information flow across disparate IT systems All Patients Refined Severity of Illness System
Medication Safety	Measures of adverse drug event (ADE) reporting	<ul style="list-style-type: none"> Change from drug-oriented to patient-oriented Add detail to measure concept definition Supports measure concept 	<ul style="list-style-type: none"> Percentage of prescriptions that arrive in the pharmacy with inaccurate, missing or conflicting information (tracked by Surescripts' Quality Program) Cause of ADE's versus ADE reporting Adverse drug event reporting - by both providers and patients Measures covering inpatient and outpatient settings NQF-endorsed measures



Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
Medication Safety	Measures monitoring drug safety for patients who are on chronic medical therapy	<ul style="list-style-type: none"> Do not include different assessments of capabilities into one outcome measure Add detail to measure concept definition Supports measure concept 	<ul style="list-style-type: none"> Percent of patients with appropriate drug monitoring data NQF-endorsed measures
Medication Safety	Measures of patient reported adverse events	<ul style="list-style-type: none"> Add detail to measure concept definition Link multiple measure concepts Requiring a certified event reporting solution will increase provider costs 	<ul style="list-style-type: none"> Counseling to patients on adverse drug events and the top 5 high risk medications Advising the patient to start new medications and record of this on the patient visit summary Actual time of occurrence
Hospital Associated Events	Measures of process and outcome improvement of hospital associated infections	<ul style="list-style-type: none"> Add detail to measure concept definition 	<ul style="list-style-type: none"> Actual time of occurrence Measures for pain control/management Population-based denominators needed Existing measures versus developing new measures NQF-endorsed measures
Hospital Associated Events	Measures of venous thromboembolism (VTE) prophylaxis and VTE rates	<ul style="list-style-type: none"> Supports measure concept 	<ul style="list-style-type: none"> Ability to identify at-risk patients using EHR and ability of EHR to store this information Actual time of occurrence Measures for pain control/management Existing measures versus developing new measures NQF-endorsed measures
Hospital Associated Events	Measures of falls events and screening	<ul style="list-style-type: none"> Requiring a certified event reporting solution will increase provider costs Supports measure concept 	<ul style="list-style-type: none"> Ability to identify at-risk patients using EHR and ability of EHR to store this information Actual time of occurrence Measures for pain control/management Existing measures versus developing new measures



Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
			<ul style="list-style-type: none"> ▪ PQRI measures ▪ NQF-endorsed measures
Healthy Lifestyle Behaviors	Measures of use/availability of services that promote healthy lifestyles (smoking cessation, body mass index management, patient health literacy): A) Smoking cessation - focused specifically on quit rate for patients within a reporting period	<ul style="list-style-type: none"> ▪ Recommend additional development before incorporating into Meaningful Use ▪ Supports measure concept ▪ Unclear/difficult to measure automatically and reliably report ▪ Update to reflect both measure of involvement in intervention activities and cessation in a manner that supports the USPSTF recommendation regarding Counseling and Interventions to Prevent Tobacco use and Tobacco-caused Disease in Adults and Pregnant Women 	<ul style="list-style-type: none"> ▪ Second hand smoke/tobacco use ▪ Tobacco quit rate ▪ Referral/prescription for diet and exercise ▪ PQRI measures ▪ NQF-endorsed measures
Healthy Lifestyle Behaviors	Measures of use/availability of services that promote healthy lifestyles (smoking cessation, body mass index management, patient health literacy): B) Body Mass Index - focused specifically on tracking longitudinal change to determine patient outcome	<ul style="list-style-type: none"> ▪ Ensure measures incorporated into meaningful use are evidence-informed and tested ▪ More appropriate for primary care than specialty setting ▪ Supports measure concept ▪ Unclear/difficult to measure automatically and reliably report 	<ul style="list-style-type: none"> ▪ Actual time of occurrence ▪ Couple patient interventions with BMI changes to determine best clinical practices ▪ NQF-endorsed measures
Healthy Lifestyle Behaviors	Measures of screening for alcohol use using a validated tool	<ul style="list-style-type: none"> ▪ Too narrow ▪ Proposed measure concept is measuring clinical care versus measuring utilizing health IT in a meaningful way ▪ Supports measure concept 	<ul style="list-style-type: none"> ▪ Assessment needs to be followed up with referral for help ▪ Validated tool should be used for screening ▪ Alcohol screening and brief intervention (USPSTF) ▪ Alcohol and drug screening and brief intervention (AMA/PCPI) ▪ Alcohol/substance abuse screening and counseling



Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
			<ul style="list-style-type: none"> NQF-endorsed measures
Effective Preventative Services	Measures of mental health screening using a validated instrument	<ul style="list-style-type: none"> Supports measure concept USPSTF recommends that mental health screening not be conducted unless follow-up services available 	<ul style="list-style-type: none"> Measures of mental health screening Presence or availability of access to staff-assisted depression care support and the client's subsequent involvement in care NQF-endorsed measures
Effective Preventative Services	Measures of blood pressure focused specifically on tracking longitudinal change to determine patient outcome	<ul style="list-style-type: none"> Functionality for other condition specific measures should shortly be added Proposed measure concept is measuring clinical care versus measuring utilizing health IT in a meaningful way Supports measure concept 	<ul style="list-style-type: none"> Blood pressure management NQF-endorsed measures
Effective Preventative Services	Measures of glucose monitoring focused specifically on tracking longitudinal change to determine patient outcome	<ul style="list-style-type: none"> Shortly add functionality for other condition specific measures Proposed measure concept is measuring clinical care versus measuring utilizing health IT in a meaningful way Supports measure concept 	<ul style="list-style-type: none"> NQF-endorsed measures
Health Equity	Measures with no discrepancy when comparing health outcomes among those within priority populations to those not within the priority populations	<ul style="list-style-type: none"> Additional detail needed Define groups and reporting data for Stage 2 meaningful use Reduce disparities for Stage 3 meaningful use Recommend additional development before incorporating into Meaningful Use Measures pertaining to "health equity" should adopt the vernacular "health disparities" Proposed measure concept is measuring clinical care versus measuring utilizing health IT in a meaningful way Unclear/difficult to measure automatically and reliably report 	<ul style="list-style-type: none"> Composite measure indicating the degree to which health outcomes vary among underserved populations when compared to those in majority populations Population specific measures



Sub-Domain	Measure Concept	Measure Concept Feedback	Measure Recommendations
Other	Measures that assess preventable ED visits	<ul style="list-style-type: none"> Add detail to measure concept definition 	<ul style="list-style-type: none"> ED care transitions (AMA/PCPI) Availability of services by a physician as an alternate to non emergency care NQF-endorsed measures
Other	Measures that assess adherence to clinical practice standards (appropriate cardiac/cancer treatments)	<ul style="list-style-type: none"> Proposed measure concept is measuring clinical care versus measuring utilizing health IT in a meaningful way Do not limit to cardiac and oncology patients Add detail to measure concept definition 	<ul style="list-style-type: none"> None
Other	Measures that assess combined quality and cost measures at each level and site of care reflecting potential defects in care	<ul style="list-style-type: none"> Add detail to measure concept definition Unclear/difficult to measure automatically and reliably report Proposed measure concept is measuring clinical care versus measuring utilizing health IT in a meaningful way Over-reaches the ability of providers to control and measure through the EHR Measures should be patient centric not cost centric 	<ul style="list-style-type: none"> Previously used illustrations where patients who waited 6 wks before an MRI, had more PT, and less imaging, which did not address cost, but could have. DM and # of OV, meds, HbA1c and their overall cost
Other	Measures of medication error near misses	<ul style="list-style-type: none"> Add detail to measure concept definition Unclear/difficult to measure automatically and reliably report 	<ul style="list-style-type: none"> Whether the hospital has guidelines or protocols on correct labeling and storage of medications in its pharmacy
Other	Measures of patient identification errors and near misses	<ul style="list-style-type: none"> Add detail to measure concept definition Unclear/difficult to measure automatically and reliably report Near misses should not be tracked in EHR 	<ul style="list-style-type: none"> Whether the hospital has guidelines or protocols for preventing wrong-site/wrong-patient surgeries or procedures for proper labeling of radiographs
Other	Measures of common EHR-related errors (mechanism to report EHR related errors and delays in care to improve EHRs)	<ul style="list-style-type: none"> Add detail to measure concept definition Unclear/difficult to measure automatically and reliably report 	<ul style="list-style-type: none"> Collaboration from all appropriate team members is important to account for regarding these measures



Appendix E: Summary of Email and Blog Responses

This Appendix includes summaries of comments from respondents that submitted their responses via email or via the ONC blog⁹. Each respondent's summary should be reviewed in conjunction with the more detailed, original comments submitted via email or via blog.

Summary of Comments as per Emails Received

Organizations for which summaries follow	
America's Health Insurance Plans	Health IT Now Coalition
American Academy of Pediatrics	HealthInsight
American College of Preventive Medicine	Kaiser Permanente
American Hospital Association	McKesson Provider Technologies
Association for Professionals in Infection Control & Epidemiology	National Committee for Quality Assurance
Association of American Medical Colleges	North Carolina Bio-Preparedness Collaborative
Care Continuum Alliance	Pharmacy e-HIT Collaborative
Catholic Health East	Planned Parenthood Federation of America
Certification Commission for Health Information Technology	State of Oregon Health Information Technology Oversight Council
Disability advocacy groups (43 co-signers)	VersaForm Systems Corp

America's Health Insurance Plans

Jeanette Thornton

Sub-Domain: Honoring Patient Preferences and Shared Decision-Making

- Consider distinguishing between patient communication preferences, including patient's preferred methods of communication, health literacy, and culturally-sensitive communication, and patient treatment preferences, including patients' preferred therapies and interventions and patient involvement in decision making.

Domain: Care Coordination

- Address issues related to patient attribution. These include:
 - Assigning patient accountability when multiple physicians are involved in a patient's care.
 - Clarifying if attributions will be made to a single physician or to multiple physicians (e.g., primary care or specialist).

⁹ The American Academy of Pediatrics and Kaiser Permanente submitted responses via the tool only, yet the level of detail included in their response to Question 6's "Additional Comments" was significant. As a result, it was determined that this information be presented in this Appendix.



- Ensuring that attribution methodology is consistently used across all federal quality measurement and reporting programs.
- Aligning the attribution of quality and cost/resource-use measures to ensure that a physician's performances on cost and quality are evaluated using the same patient panel.
- Address adequate sample sizes.
 - Adequate sample size is needed to achieve reliability of measures. Some approaches used to address sample size include use of minimum number of observations for measures as well as confidence intervals.

Domain: Other

- Clarify how “near miss” will be measured; it will be challenging as “near miss” is not usually captured in an EHR or paper medical chart.

Note: See PDF file attachment provided by AHIP for a list of their measure recommendations.



AHIP attachment.pdf

American Academy of Pediatrics

Junelle Speller

The following feedback was provided to improve the framework proposed by the Workgroup:

- Concern with the ambiguity of the measure concepts and that some may result in onerous and inefficient.
- Leveraging EHR capabilities is important but not at the detriment of taking away clinical face time with the patient.
- Most clinical organization systems do not have the ability to exchange data but incorporating a medical home concept of automating data systems may help facilitate information sharing among disparate systems.
- Pediatric measure concepts should be included specifically related to newborn screenings, developmental screenings, immunizations, preventive care, care coordination, and transitions.
- Measure concepts need to be reclassified from the *Other* domain to the *Patient Safety* domain to include: measures of medication error near misses and measures of patient identification errors and near misses.

American College of Preventive Medicine

Kyong Park

Domain: Population and Public Health

The clinical quality measures proposed for effective preventive services, which include measuring and monitoring blood pressure trends, blood glucose trends, and depression screening rates, appear to be more relevant within the *Clinical Appropriateness* domain rather than *Population and Public Health* domain.



A more appropriate and useful clinical measure of effective preventive services would be the measurement and reporting of utilization rates for grade A and B preventive services recommended by the US Preventive Services Task Force (USPSTF) and immunization rates for those immunizations recommended by the Advisory Committee on Immunization Practices (ACIP). Currently, the utilization rates for many recommended preventive services and some recommended immunizations, particularly adult doses, are severely under-utilized. Improvements within these practices would greatly enhance both those receiving the recommended preventive services and the community at large which would ultimately lead to better health outcomes and improved quality of life.

American Hospital Association

Beth Feldpush

Stage 2 and Stage 3 measures should align with the National Quality Strategy and be harmonized with other federal quality reporting programs. The Workgroup should focus on a small set of measures that are truly critical to providing the best care possible rather than implementing a broad swath of measures on divergent topics that will prevent providers from knowing where to concentrate their efforts. Each clinical quality measure selected should consist of two concepts: 1) whether the measure is health IT-sensitive, and 2) whether patient care or outcomes can be improved by the use of the health IT.

Several of the measure concepts presented by the Workgroup do not meet one or both of these criteria. For example, the measure assessing usage rates of generic and brand name medications concept shows neither use of a health IT system nor a potential improvement in patient care or outcomes. Several measure concepts are inappropriate for Meaningful Use criteria due to lack of health IT component and/or redundancy with other federal initiatives. These include measures relating to readmissions and hospital associated events. It is strongly advised that the HCAHPS patient experiences with care survey results not be incorporated into patients' EHRs because patient responses on this survey should remain confidential and not be revealed to providers or included in their medical records.

Certain measure concepts are appropriate. The measure concepts of measuring medication error near misses and patient identification errors and near misses should be explored further, despite the daunting challenges of identifying events that do not occur. The measure concepts that focus on shared decision making and patient self-management also may be appropriate if use of a health IT system is one of the tools employed by a hospital to provide these services.

Any proposed measures should be comprehensively tested including a dry-run in the field to ensure that they are thoroughly specified, clinically valid when the data are collected through an EHR system and feasible to collect. It is concerning that the measure specifications for the Stage 1 clinical quality measures were not field-tested, nor was the accuracy of the vendors' data calculation algorithms tested by an EHR-certification body.



Association for Professionals in Infection Control and Epidemiology

Nancy Hailpern

Data should be retrievable from existing data sources without causing a demand for additional human resource needs, and those systems should allow for secure data sharing across systems and providers. Further, quality measures should be consistent with quality measure definitions already used by other federal agencies.

Measure Concept: Measures of process and outcome improvement of hospital associated infections (HAI)

ONC should align its HAI quality measures with those of the HHS Action Plan to Prevent Healthcare-Associated Infections, using definitions for the quality measures already used by CDC's National Healthcare Safety Network (NHSN). Additionally, one ongoing challenge with surveillance is capture of epidemiologically-sound denominators to permit calculation of incidence densities for outcome measures. The Health IT Policy Committee should encourage development of EHR systems that will facilitate easy, reliable capture of denominator data to be used in surveillance of HAIs as well as related process metrics.

Measure Concept: Measures of all cause readmissions and length of stay (LOS)

Readmission or LOS measures may not be effective as they may not take into account the full picture of the reasons for readmission, given the lack of EHRs and information sharing across each care setting. Quality measure definitions should take into account circumstances where readmissions are planned in order to improve patient outcomes from procedures. In order to determine if the apparent readmission is related to the original admission, or a new episode involving an unrelated diagnosis, EHR should be accessible across systems and facilities.

Measure Concept: Measures assessing appropriate medication treatments, including overuse and/or underuse

Measures should include appropriate fields to accurately measure use of antibiotics. The Surgical Care Improvement Project (SCIP) includes process measures for use of antibiotics before, during and after surgery in order to protect patients from bacterial infections while also preventing development of antibacterial resistance.

Sub-Domain: Effective Preventative Services

Establish a measure concept on prevention of vaccine-preventable diseases among both patients and personnel by immunization.

Association of American Medical Colleges

Jennifer Faerberg

The following principles should be adopted when selecting quality measures for the EHR Incentive Program:

- Measures must be specified and tested for EHRs and must be endorsed by NQF in order to reduce the number of viable measures that are available for reporting.
- Measures should improve care; only those measures that demonstrate a true improvement in quality of care should be required for Meaningful Use.



- The selection of measures should include a consideration of whether: (a) the measure fits into an optimal workflow and (b) the elements are collectible in EHRs. Data collection should not decrease overall workflow efficiency.
- Measure selection and reporting should align with the HHS National Quality Strategy and CMS quality reporting programs. This would minimize the data collection burden, as well as streamline the information collected.
- Results should not be “double counted”. If the same quality measures are used in multiple CMS programs, then the results of those measures should not be used to repeatedly penalize providers.
- Measures must be evidence-based, yet flexible enough to encourage clinical innovation. Measures where “appropriate care” is difficult to define due to the individual characteristics of the patient or where the evidence is mixed should not be included in the EHR incentive program.

The Workgroup should consider the feasibility and scope of measure concepts considering the reality that it may be impossible for many of the concepts to be implemented in the short time frame of the Meaningful Use program. Some measure concepts rely on a level of interoperability that is not yet available and most likely will not be in time for Stage 2, or even Stage 3. The Workgroup should build upon lessons learned from Stage 1 and consider targeted sets of measures, perhaps around high-priority health condition. Until measures for all specialties and subspecialties exist, the EHR incentive program should continue to allow EPs to report that measures are not applicable to their practice. The Health IT Policy Committee and CMS should consider a group-level reporting option, which would help focus the resources at multi-specialty group practices on capturing data for high priority areas.

Measures in the following areas are recommended:

- Patient engagement
- Medication management
- Care coordination

It is recommended that the following measure concepts not be considered:

- All cause readmissions and length of stay, given issues of duplication with existing CMS data collection efforts and difficulty in knowing if a patient is readmitted to a different hospital.
- Use of HCAHPS in measures of patient and family experience of care coordination across a care transition (e.g. questions within HCAHP surveys), given patient confidentiality concerns.

Care Continuum Alliance

Kip McArthur

Domain: Patient and Family Engagement

CCA recognizes the crucial role of individuals in the management of their health care especially those with chronic conditions. The measure concepts are appropriate for this domain but need to ensure that reliable validated methods for measurement are developed. In addition, the



thresholds need to be attainable for providers as patients and family caregivers become more educated and engaged.

Domain: Clinical Appropriateness

The HITPC Quality Measures Workgroup has included important elements in this domain to address appropriate utilization. The absence of appropriate and effective medication adherence is a critical care system failure. While there are several self-reported surveys and tools designed to measure medication adherence, less data and literature is available about how organizations can systematically change and improve medication adherence rates.

Domain: Care Coordination

The suggested concepts are appropriate and will help address increased quality and efficiency. In particular, the Care Transitions sub-domain concepts are fundamental to reduce hospital readmissions for vulnerable populations. Several of the measure concepts suggested within this domain are aligned with other federal programs and activities, which will reduce duplication and burdens on providers

Domain: Population and Public Health

The measure concepts are a good start but are somewhat limited. Further, reliable and valid standards to measure need to be developed. Population health management and the scope of services associated with this present some challenges to traditional outcomes measurement.

Sub-Domain: Self Management/Activation

The following measures are recommended:

- Assessment of an individual's self management capabilities
- Behavioral measures that include self-efficacy
- Health literacy of the condition and intervention
- Patient preference
- Availability of tools designed to support self management
- Patient education and knowledge assessment.

Catholic Health East

Pamela Carroll-Solomon

The following recommendations were provided:

- There should be greater alignment with existing quality reporting requirements given resource issues/competing priorities at the local level.
- Health IT Policy Committee should use existing measures that are approved by a consensus making body (e.g., NQF, NDNQI).
- When developing measures, existing, standard data sources should be used. For example, for measures of shared decision making or decision quality that address a combination of patient knowledge and incorporation of patient preferences, it was suggested that the Health IT Policy Committee look at the HCAHPS survey as there are questions embedded in that relevant to patient preferences.



- Ensure industry standard definitions are used such that it is an apples-to-apples comparison. For example, for the *Appropriate/Efficient Use of Medications sub-domain and Medication Safety* sub-domain ensure that a standard definition of harm is used (e.g., A to I scale).

There are challenges with the longitudinal measures. While they are worthwhile, if a patient does not stay within a particular health system/facility, then there is limited value since the measurement may not capture the same population from one time period to another. Additionally, measures based on claims data may not be sound indicators of quality given the intent of claims data is for reimbursement (not quality).

Certification Commission for Health Information Technology

Karen Bell

The following considerations and suggestions were provided:

- Since the ARRA Meaningful Use measures will be used for the purpose of bonus payments to eligible providers and hospitals using certified EHRs, it is important to identify and prioritize those measures for which there is clear provider accountability. Each measure should clearly acknowledge the type of health IT necessary for achievement, which parties may be held accountable for achievement, and the ways in which the measure could be used going forward.
- Federal certification criteria and testing processes should support the production and reporting of the measures selected for Meaningful Use Stages 2 and 3. A hospital EHR certified to Stage 1 criteria does not include the ability to capture electronically all of the data points necessary to produce and report the required hospital metrics for Stage 1. Manual entry of data above and beyond what is necessary for certification or the creation of expensive (and possibly unreliable) interfaces should not be encouraged going forward.
- All measures should be validated by a nationally recognized body such as NQF and pilot tested within their intended environments for certification, and in the clinical setting. EHR development is time consuming and resource intensive. CCHIT suggests that newer measures be included in Stage 3, to allow for appropriate maturation and that the focus of Stage 2 be to increase existing thresholds on measures currently in place for Stage 1.
- Important care and quality measures differ by provider, and certified EHRs should be domain specific in some circumstances to support these differences. Inclusion of some measures (and a single set of criteria needed to certify an EHR) may not be appropriate for all providers; criteria to support interoperability are most important.

Disability advocacy groups (43 co-signers)

Barbara L Kornblau

The 43 disability advocacy groups applaud the emphasis on patient empowerment and self-management as well as health equity measure concepts, but state that additional measures are needed meet both ACA's and Healthy People 2020's goals of quality care and decreased disparities for people with disabilities.



To address issues of health disparities and barriers to health care for people with disabilities, quality measures need to address eliminating the barriers to quality care that people with disabilities now face. IT must collect basic data regarding this functional limitation of people with disabilities to enable quality measures to address efforts to improve the quality of health care provided.

The measure concepts should include measures of the social determinants of health as outlined in Healthy People 2020, since these determinants significantly affect access to and the quality of health care provided to people with disabilities. The measure concepts should also include measures of access to home and community based services for improved/sustainable community participation.

Since lack of access to basic primary care is a significant issue that often causes preventable secondary conditions, measure concepts should also include measures of equal access to primary care and related services (i.e., mammogram, colonoscopy) for people with disabilities. (See section 4302 of ACA). Further, the prevention of secondary conditions should be a separate quality measure for people with disabilities rather than fall under a co-morbidities measure.

Health IT Now Coalition

Joel White

HITN is appreciative of the efficiency measures as these sets will help foster appropriate cost containment while at the same time improving care quality. Clinical support tools are crucial in facilitating high quality inpatient care and strict adherence to care plans. Tying clinical decision support to the quality measures, particularly for patient safety and care coordination, should be the highest priority. Quality measures must be harmonized with other federal programs in Stage 2 to achieve the measureable outcomes targeted in Stage 3.

The Workgroup should create a core set of quality measures that focus on provider delivered outcomes. The Workgroup should adopt the following NQF measures as a principled foundation for EHRs to build upon iteratively as best practices are defined:

- NQF 488/490 requires that provider is able to “use health information technology to perform care management at point of care”; this measure will address the beginning of a patients’ care.
- NQF measure 489 provides a firm definition for laboratory exchange by indicating that all patient-encounters that require at least one laboratory test be ordered electronically if it is known that the lab system can return the results as structured data directly into provider’s EHR system; this should be paired with an increase in CPOE requirements to the 65% defined in the Stage 1 IFR.
- NQF 486/487, and an increase of the e-prescribing threshold to the Medicare Part D standard of 75%, will improve clinical quality through systems that can perform drug formulary checks, drug-drug interaction warnings, adverse drug reports, and medication reconciliation for patients being transferred between care-settings.

Additionally, HITN provided the following comments and measure recommendations:



Domain: Patient and Family Engagement

- Scope of data sources: Data collected from the patient outside of clinical settings (as part of a care plan) should be included in the patient summary as part of the uniformed structured form.

Sub-Domain: Self-Management/Activation

- Given Stage 1 requirements were dramatically low, the Meaningful Use Workgroup draft recommendation for Stage 3 should be accelerated to Stage 2 and all “Data [is] available in a uniformly structured form by 2015 (HITSC to define; e.g., use of CCD or CCR)” measures will help facilitate patient activation.

Sub-Domain: Community Resources Coordination/Connection

- Measuring availability of provider and resource directories and their use would reflect patient access to information on the availability of resources in their community.

Sub-Domain: Appropriate/Efficient Use of Facilities

- Add a measure of preventable emergency department visits.

Sub-Domain: Appropriate/Efficient Use of Diagnostic Tests

- Include inpatient (facility) and outpatient and ambulatory settings as office based diagnostic imaging has proliferated.

Sub-Domain: Appropriate/Efficient Use of Medications

- Add measures for polypharmacy, including documentation of patient communications regarding all medications taken, whether prescribed or not.

Measure Concept: Measures monitoring drug safety for patients who are on chronic medical therapy

- Include a measure for reporting patient outreach for medication therapy management and follow up to ensure compliance with a care plan.

Sub-Domain: Hospital Associated Events

- Suggest reporting on never events as defined in the Medicare program.
- Encourage extending measures of hospital acquired infections and conditions to physician office, outpatient hospital and ASCs where appropriate.



HealthInsight

Doug Hasbrouck

Note: See Word document attachment provided by HealthInsight, which includes rankings (scale of 1 to 3) and prioritization of measure concepts.



HealthInsight
attachment.docx

Kaiser Permanente

Lori Potter

Kaiser Permanente supports the general framework developed by the Quality Measures Workgroup and the direction of Meaningful Use Stages 2 and 3. There is some concern about the short-term feasibility to meet the objectives identified in the current set of measure concepts through the use of an EHR alone because some concepts will require the use of patient registries and surveys. Kaiser advocates for the inclusion of survey tools in MU Stages 2 and 3, in particular for those areas requiring patient self-report. Emerging technologies such as secure message, phone consults, and health information exchange should also be considered a legitimate source of data in addition to an EHR.

Kaiser is also concerned about the limited number of e-specified indicators or measures for the proposed concepts and the length of time it takes to develop them. As a result, Stage 2 should focus on accepted and evidence-informed process measures and leave evidence-based outcome measures for Stage 3. Not only is it important that all quality measures be valid, reliable, and based on evidence, all current Meaningful Use measures should be re-written to be e-specified. Recommended existing measures can be leveraged from NCQA (HEDIS), CMS (Medicare Outcomes Survey), AHRQ (CAHPS and HCAHPS), and The Joint Commission. A menu or portfolio of measures should also be made available so eligible professionals/hospitals can address local needs. This would follow the approach that was implemented under Stage 1 measures.

Regarding implementation efforts, eligible professionals/hospitals should not be penalized for having an initial high baseline. Minimum thresholds should be established with a relative improvement approach. Stage 2 and 3 quality measures must take into account the different care delivery models that exist nationwide.

Additional considerations and measure-specific recommendations are included below.

Domain: Clinical Appropriateness

- There are very few universally-accepted measures of efficiency and any that are incorporated into Meaningful Use must be evidence-informed and empirically tested.

Domain: Patient and Family Engagement



- Concern about the lack of e-specified measures and inability to reliably calculate measures in this domain from an EHR. It will be important to leverage web-based tools and surveys for this domain in Stages 2 and 3.

Domain: Care Coordination

- Adherence measures or care management plan success measures may require extended look-back periods.
- These outcome measures should be adopted during Stage 3.

Domain: Patient Safety

- Include the following inpatient measures for Stage 2:
 - Assessing the risk for and prevention of HAPUs
 - Rate of falls

Domain: Population and Public Health

- Measures should be based on a minimum threshold so those with high baselines are not unfairly disadvantaged.
- Most of these measure concepts will rely on a functioning HIE and therefore are more appropriate for Stage 3.

Domain: Other

- Recommend moving many of the concepts included to the *Patient Safety* domain.
- Measures seem to monitor the robustness of the system (or EHR errors), rather than patient outcomes.

McKesson Provider Technologies

Ann Richardson Berkey

McKesson noted the following recommendations related to the incorporation of quality measures into Stages 2 and 3:

- Establish a pilot program to test the validity of new quality measures and use the results of these programs to determine whether the tools, data standards, and protocols are in place to support the introduction of these new quality measures as Stage 2 or Stage 3 objectives.
- Consider an incremental approach to the development of quality measurement to ensure that existing EHRs can incorporate new quality measures.
 - NQF's Health Information Technology Expert Panel (HITEP) recognized in their second report that clinical information required for quality measurement is currently not adequately captured in EHRs. As McKesson is learning in Stage 1, providers are changing their workflow to meet vendor coding specifications that are still under development.
 - Support of new data elements from Stage 1 has required either additional integration time or has resulted in suboptimal workflows (e.g., intra-arterial medication administrations are typically handled within a cardiology information system, not within the EHR functions required for Stage 1). However, in order for providers to comply with



the current Meaningful Use quality measure, it is necessary to implement the measure data collection within the EHR.

- Establish a standard definition for a “care plan”, standardize data collection and harmonize measures across data platforms.
 - Without a national definition, measures used to reconcile a care plan may be inconsistent. There are also challenges with the use of measures that require other standardized data collection. For example, currently there are multiple risk assessment tools in use to screen for fall risks, but there is no single uniform standard.
 - Standards are also lacking in two critical areas with respect to the longitudinal measurement, including difficulties in 1) attributing the measure results to any one provider without a standard and definition of a primary care provider and 2) tracking patients across multiple providers without a national patient identifier.
- Provide a phased-in process for the testing and implementation of new tools that will allow the retirement of manually abstracted measures as new automated measures are adopted.
 - The Stage 1 measures require changes to existing clinical content and workflow, EHR deployment and incremental interface requirements. These changes require extensive training, along with modifications in culture and behavior. Adequate lead time will allow manually abstracted measures to be retired as new automated measures are adopted.

National Committee for Quality Assurance

Margaret O’Kane

The Stage 2 and 3 measures represent a thorough and constructive roadmap of measure development and are consistent with both the National Priorities Partnership Framework for health quality and the five Meaningful Use pillars. To make it desirable for stakeholders to consider extending Stage 1, vendors and certification entities need the opportunity to prepare for smooth incorporation of Stage 2 requirements.

Proposed measures should be prioritized based on how soon each will be feasible to develop and implement. This should take into account the time and expertise for measure development and the capacity of EHRs to support them. For example:

- Measures already used in large EHR installations that can be rapidly standardized and tested with data already in most EHRs should get immediate attention.
- Measures in development or prototype in more advanced practice settings, such as organizations with long-standing advanced electronic data systems, require some further refinement but could then follow the first group in terms of standardization and testing to allow wider adoption.
- Measure concepts where no existing measures and/or standardized data fields are in current use would require substantial time and effort. For example, standardized data entry conventions would need to be identified— in some cases prompting clinicians to record data they now do not, new coded data fields and/or advanced natural language processing.



North Carolina Bio-Preparedness Collaborative

David Potenziani

The quality measures are primarily focused on individual health, and can be complemented by measures of community health and protection. Recommendations for such measures include:

- Timely reporting of infectious diseases and reportable conditions (to protect all patients from communicable diseases)
- Timely reporting of lab results (to assess the appropriate use of tests, to protect the population from communicable diseases)
- Reporting of the number and nature of hospital/clinic acquired infections (particularly important as community-acquired staph is on the rise)

Pharmacy e-HIT Collaborative

Shelly Spiro

Note: See PDF file attachment provided by Pharmacy e-HIT Collaborative, which highlights how the Pharmacist/Pharmacy Provider EHR Functional Profile (PP-EHR) can be used for the various measure concepts, and it highlights the role for the pharmacist in using this PP-EHR.



Pharmacy e-HIT
Collaborative attachn

Planned Parenthood Federation of America

Laurie Rubiner

In regards to the Effective Preventative Services sub-domain, a family planning measure concept should be considered. The following measure is recommended for family planning:

- Percentage of sexually active clients at risk for unintended pregnancy screened, at least once annually, for use of a contraceptive method at last intercourse and method satisfaction

PPFA comments on the health impact for women and children of healthy spacing and timing of pregnancy and the recognition of the importance of family planning and contraception in the Healthy People 2020 Initiative. The inclusion of a family planning measure as a measure of meaningful use of EHR would help ensuring that patients are being appropriately screened for risk of unintended pregnancy and receiving the services they need to plan for pregnancy.



State of Oregon Health Information Technology Oversight Council

Rochelle Graff

Note: See Word document attachment provided by the State of Oregon HIT Oversight Council for a list of their measure recommendations.



State of Oregon
attachment.docx

VersaForm Systems Corp

Joe Landau

The existing Stage 1 measures were difficult to implement. Many measures are stated several times, and sometimes the several statements conflict, leaving it unclear which statement is to be preferred. The language, which avoids parentheses and uses indentation to indicate grouping, is unclear. Standard mathematical usage would be better. The instructions for the final computation—how to get the numerator and denominator, and how to handle the exclusions—are poor. Finally, some of the measures assume that the physician's EHR system will have information that it is in fact very unlikely to have. The measures should be tested by having several programmers who have no connection with the quality measures community implement them and record their comments.



Summary of Comments as per Blogs Received

Organizations and Individuals for which summaries follow	
American Academy of Ophthalmology	Elvina Treuil
California Maternal Care Quality Collaborative	Eric Eisenstein
Catholic Healthcare	George
Childbirth Connection	Judith Lindsey
GE Healthcare IT	Kimberly Kelley
National Center for Cognitive Informatics & Decision Making	Martha J Wunsch
National Coalition for Cancer Survivorship	Michael A Goldfarb
National Health IT Collaborative for the Underserved	Nancy
Society of Behavioral Medicine	Nina Homan
UnitedHealth Group	Shannah Koss
Adrene Cohen	Stephen Axelrod
Beth Friedman	Stephen Beller
Bob the Senior Care Concierge	Trisha
Douglas Duncan	

American Academy of Ophthalmology

William L. Rich, III

The quality measures available in Stage 1 did not address the needs of all ophthalmology subspecialists; expanding the list for Stages 2 and 3 to incorporate more eye care measures would allow for a more robust measure set.

Recommendations on new measures concepts cannot be made until evaluation of Stage 1 has been conducted. Measure development is a costly and timely process, and needs to be evidence based and tested to be deemed relevant by the affected stakeholders. Arbitrary measures have the potential to cost the system money by requiring physicians to perform tasks that may not improve patient care and have no evidence that would demonstrate improved outcomes. There is no sound basis in making physicians report for the sake of reporting to meet “meaningful use” and to report on measures that have no relevance to the disease they are treating. ONC must develop specific benchmarks and standards in regards to what is deemed an applicable and germane quality measure to be incorporated into Meaningful Use.

The following quality measures should be incorporated into Stage 2 and 3 Meaningful Use:

- Age-Related Macular Degeneration (AMD): Dilated Macular Examination
- Diabetes Mellitus: Dilated Eye Exam in Diabetic Patient



The primary purpose of evaluation and management of macular degeneration is to minimize or reverse loss of vision and to maximize the vision-related quality of life related to AMD. A documented complete macular examination is a necessary prerequisite to determine the presence and severity of AMD. Several trials demonstrate the ability of timely treatment to reduce the rate and severity of vision loss from diabetes. Accurate documentation of the presence and severity of both peripherally diabetic retinopathy and macular edema are necessary examination prerequisites. The performance and documentation of key examination parameters are necessary for timely treatment to prevent blindness due to diabetes.

California Maternal Quality Care Collaborative

Elliott Main

Two areas should be covered in the proposed framework: 1) post-operative complications such as wound infections, bleeding and pain are not captured in hospital data sets and require a linkage of office records. This is particularly important in the case outpatient surgeries. Hospital based and even system-based QI efforts currently suffer without these; and (2) when a mother comes to the delivery site to give birth, a prenatal record is typically not available and critical information is lacking.

Catholic Healthcare

Marge Lewandowski

Stage 2 and Stage 3 should focus on the quality aspect of measures rather than the capability to abstract and submit. Health outcome measures should build on existing measures allowing for continued development and refinement of healthcare IT while also minimizing the burden on healthcare environments. Each environment of care has reporting requirements and final outcome measures should complement existing measures. For example, hospital acquired conditions such as nosocomial ulcers, ventilator-associated pneumonia and surgical site infections all provide potential measures. Additionally, data definitions should match the existing measure if currently in use.

Patient healthcare literacy issues need to be addressed before substantial improvements in patient engagement can be made. Measures in this area could focus on availability of tools and strategies that support improvements in health literacy. If measures specific to self-management skills are implemented, the Workgroup should consider the reliability and completeness of measures as self-management measures often rely on patient self-reporting.

The Workgroup needs to be conscientious about those concepts which do not apply across various settings. For example, chronic disease management is an important aspect of patient self-management; yet preventative care for chronic conditions is more fully within the realm of clinic practices. While it is understandable to look for measures that fit across a multitude of care environments, it is more imperative to initiate measures that are value-added to the care of the patient within each specific environment.



Childbirth Connection

Carol Sakala

Childbirth Connection applauds the Workgroup for including within the *Patient and Family Engagement* domain the crucial concept of patient health outcomes. Outcome measures are essential for assessing effects of care, providing feedback, enabling consumers to make wise choices, and fostering value-based purchasing. The volume and costs of maternity care justify inclusion of maternity-specific measures.

The following measures were recommended:

- A composite measure of postpartum maternal morbidity/maternal outcome at the end of the full episode of maternity care for inclusion in Meaningful Use Stage 3. The proposed measure would:
 - Address the crucial question of health outcomes for a major segment of the health care system.
 - Bring to light for the various stakeholders currently hidden outcomes of the full episode of maternity care, and enable them to use this information for quality improvement, consumer choice, value-based purchasing, and other purposes.
 - Provide a measure that is urgently needed to increase the effectiveness of delivery and payment innovations such as care coordination and woman- and family-centered maternity care homes, bundled maternity care payment systems, and accountable care organizations.
 - Achieve effective EHR integration across caregivers and care settings.
- Condition-specific measures for childbearing women and newborns.

GE Healthcare IT

Mark Segal

The EHR Association and individual vendors have identified the critical need for final certification and Meaningful Use criteria 18 months before their required use, given the need for development time, testing, certification, provider implementation, and provider training. The requirements associated with new quality measures parallel those for new Meaningful Use objectives and measures. Individual quality measures can require material changes in various aspects of EHRs, including data models and user interfaces. They can also require extensive changes to provider workflows and data interfaces. Timely finalization and release of Stage 2 quality measures is as critical as timely release of Meaningful Use and certification criteria.

The Workgroup should focus on mature measures that have been developed and fully reviewed by applicable quality measures organizations, especially NQF, and that have validated specifications for use in EHR-based reporting.

It will not be feasible or appropriate to implement measures covering all sub-domains and concepts for either Eligible Professionals or Hospitals and suggest that the Workgroup develop a prioritization process that considers such criteria as maturity of the measure, demonstrated validity and reliability, validated EHR specification, anticipated value of implementation (i.e., ROI), and incremental and total (for all selected measures) burden on providers. For Eligible



Professionals, it will continue to be critical to develop measures that are applicable to a range of specific specialties and also to maintain a realistic and non-burdensome number of quality measures for any individual EP.

It is also essential to harmonize as much as possible the quality measures used in various federal, state, and private sector programs, especially, PQRI, RHQDAPU, ACOs, value-based payment, and Meaningful Use.

National Center for Cognitive Informatics & Decision Making

Keith Butler

Quality of care measures should help focus health IT to function much more effectively as a tool to implement management policies, such as continuous quality improvement of care processes. It is important that the measures have included process assessment and are defined in terms that are agnostic as to the technology to achieve them.

Stage 2 and 3 measures need a more comprehensive notion of process improvement that assesses the “as-is” tasks of workflows and compares them to improved workflows of higher quality. The workflows, roles, organizational structures and decisions that, together, represent a quality care process are highly interdependent. For this reason, process and decision-making measures should not be limited by specific aims (e.g. reduce infection) but rather should also cover the process and decision making that impact the aim. For example, the first measure is to assess patient participation. While this is increasingly important, the measure leaves unanswered the question of how this participation will become integral to the workflow of related tasks of care professionals. To assess this “value stream,” measures need to be understood in relation to one another in the processes of clinical care.

Another dimension of an evidence-based value stream will depend on developers, who must be able to design health IT to meet measure requirements. In conventional approaches to health IT design, the focus is on features, not indirect quality effects. How will developers get useful guidance at design-time for the impact an application will have on measures? Without this guidance, the results will be hit or miss. Some of the measures suggest data sources that can be made available at design-time (e.g., established decision strategies and workflows that more closely adhere to protocol or plan). Other user performance data sources could include best practices for health IT usability and interface design, lab simulations with teams of users, cause and effect analysis, cognitive performance models, and in the longer term successful case-studies.

National Coalition for Cancer Survivorship

Thomas Sellers

NCCS recommends the following measures:

- A measure of patient receipt of a cancer care plan at several critical junctures across the continuum of cancer care: at the point of diagnosis and decision-making regarding initial treatment, at any time when there is a significant change in condition or treatment, and at the end of treatment and beginning of survivorship.



- The American Society of Clinical Oncology (ASCO), through its Quality Oncology Practice Initiative, has developed a measure for development of cancer care plans.
 - The measure is health IT-sensitive because a care plan can be easily built into EHR systems; demonstrates preventable burden, especially by reducing the burden of long-term and lasting side effects of treatment in survivors; assesses health risk status and outcomes in patients from the moment of diagnosis and throughout survivorship; and is longitudinal because it supports the assessment of patient-focused episodes of care. The measure is also parsimonious in two ways: 1) an essential feature of the cancer care plan is its facilitation of the coordination of care; by setting out a plan of care, the cancer care plan applies across multiple providers and care settings and also addresses co-morbidities that may affect cancer patients; and 2) achieves the goals of the measure concepts related to patient preferences and shared decision-making, effective care planning, care transitions, and appropriate and timely follow-up.
- A cancer condition-specific measure that assesses communication with cancer survivors about healthy lifestyle behaviors, with a focus on smoking cessation and body mass index.

National Health IT Collaborative for the Underserved

Ruth Perot

In Stages 2 and 3, the Workgroup should collect data that helps address health equity. At present, there is only one measure that specifically addresses health equity. However, each of the measure concepts offers an opportunity to collect and report data using Stage 1 demographic variables at a minimum. It would be important to know how minorities and other priority populations fare in Stages 2 and 3 with respect to each domain.

Generally, the measure concepts are clinically based and only a few (12 out of 40) make reference in the concept definition to health IT, suggesting how the measure might integrate or implicate health IT. The absence of an explanation of health IT's specific relationship to the measure concepts requires the reviewer to make assumptions about the intended use of health IT in these contexts. As such, efforts to illustrate meaningful use are diluted without such clarity. In several cases, the EHR, PHR, a registry or other type of health IT tool or application potentially could be used as a data source, or to monitor and track information, or to support data collection activities; however, such use is not stated. More specific considerations for measure concept refinement include:

Measure Concepts (3): Measures of patient activation, including skills, knowledge, and self-efficacy; Measures of patient self-management; Measures of shared decision making or decision quality that address a combination of patient knowledge and incorporation of patient preferences

- There is a need to concretize the phrase: "led in the 'right direction' through the provision of tangible support for patient self-management, shared decision-making and the observance of patient preferences.
- Potential measures could address the availability of culturally and linguistically-appropriate materials and services (e.g., interpretation) geared to the literacy level of patients.



Measure Concept: Assessment of ambulatory care sensitive preventable admissions

- As this concept may also be influenced by a patient's access to primary care, a medical home or insurance, it is not clear how other potentially confounding factors will be addressed. It is also not clear how health IT is to be implicated in this measure.

Measure Concepts (3): Assessment of appropriate medication treatments, including overuse and/or underuse; Measure of medication use linked to adherence outcomes; Measure of appropriate use of cardioprotective medications-aspirin, ACE inhibitors, and statins-in individuals at high risk of experiencing heart attacks and strokes

- The appropriate/efficient use of medications may be influenced by provider instructions to the patient and/or patient knowledge and understanding of how much medication (dosage) to take at a given time (frequency) over a specified period of time (duration). Such information could be tracked by various components of the EHR, PHR or other health IT tool.
- The availability of culturally and linguistically appropriate services and materials has relevance and could serve as an appropriate measure of effectiveness.

Society of Behavioral Medicine

Karen Emmons

The Workgroup should consider adding measure concepts associated with physical activity, eating patterns, depression/anxiety, quality of life, stress/distress, health literacy/numeracy, patient goals, and patient priorities and preferences.

When formulating recommendations on measures for Stage 2 and 3, the Workgroup should also focus on capturing standardized sets of measures and coherent sets of metrics. The Society of Behavioral Medicine recently proposed the development of a standardized, practical toolkit for measuring behavioral and psychosocial patient report variables that can be routinely included and confidentially protected in the electronic health records. Patients and researchers would be best served if summary measures, such as the quality-adjusted life year or health-adjusted life expectancy were included instead of global measures in the Patient Health Outcome sub-domain.

UnitedHealth Group

Sam Ho

UnitedHealth Group noted appreciation of the efficiency measures as they hold the potential to foster appropriate cost containment while at the same time improving care quality. Efficiency measures in conjunction with a robust set of quality measures, will promote cost reduction by promoting care coordination, reducing hospital readmissions and enhancing patient safety efforts.

Note: See Word document attachment (developed by Booz Allen based on blog comments) for UnitedHealth Group's measure recommendations.



UnitedHealth Group
measure recommend:

Adrene Cohen

The measures of restraint use, and pressure ulcers would be a great help for many reporting requirements.

The measure of use of blood/ blood products and transfusion reactions could be added to the *Clinical Appropriateness* domain or *Patient Safety* domain to better understand use and outcome. To assist with care planning, a scale to address the aging population and collect data on cognition should be added.

Beth Friedman

Any type of reporting requirement – federal or otherwise – must be easy to implement for healthcare providers. Making providers spend money or hire additional staff simply to meet measure requirements defeats the purpose. The Workgroup should endorse the use of data extraction tools applied to dictated and transcribed reports as an easy, quick, proven way to fulfill reporting requirements. Physicians know how to dictate and there is a plethora of cost-effective, secure transcription services that exist. Also, speech and voice recognition can be applied to hasten the process. Mining the discrete, structured data we need from these reports would go a long way in making sure quality care is being given, accelerating EHR adoption and fulfilling MU quality reporting measures – without adding any high-dollar costs to the process.

Bob the Senior Care Concierge

The Workgroup should reference existing data structures (e.g., the military system). Additionally, Medcin (used by the Department of Defense) is an example of a system that has developed a codified nomenclature that includes over 250,000 clinical data elements encompassing symptoms, history, physical examination, tests, diagnoses and therapy. This clinical vocabulary contains over 26 years of research and development as well as the capability to cross map to leading codification systems such as SNOMED, CPT, ICD, GSM and LOINC. Every possible point of care scenario, including Assisted Living Centers, Adult Family Home and Nursing Homes, Home Care facilities should be considered in possible data mining.

Douglas Duncan

The EMR tool has the potential to improve patient care and doctor efficiency. However, the Meaningful Use agenda is the wrong process to use to encourage doctors to incorporate the EMR into their practices. First doctors need a chance to learn how to use an EMR to take care of their patients and streamline their workflows. Once they learn how to use their particular EMR, doctors can figure out how to apply it to their practices and at the same time preserve “the human side of the doctor-patient relationship.” Once doctors buy into the value of the EMR, it



would be appropriate to ask for quality measures to be gradually incorporated into their workflows. Requiring doctors who don't even have an EMR to go through the process of selecting one, learning how to use it, and fulfilling the demands for data (that the government and other entities want to mine) disrupts their workflows of patient care.

Little consideration is given to the impact the Meaningful Use project has on most physicians' practices in terms of both workflows and costs. With an excessive amount of data required, much of which is not pertinent for every physician, there is a danger of interfering with individual doctor's ability to provide care for their patients. The demand for data input by doctors or the increased cost of adding staff to input the data required for measuring quality and "value" has a tremendous impact on doctors' practices and is not appropriate for most practicing physicians. The list of data items is very labor intensive and appropriate for researchers whose job it is to gather and record the data from their research lab. Unless data entry generates revenue equivalent to revenue from treating patients, the extra time or staff for data entry becomes very costly and an imposition produced by "leveraging" IT structure. Reported measures may look better not because of better care but because of better and more clever reporting skills.

The criteria (demands, requirements, etc.) for Meaningful Use need to be limited, concise, relevant and tailored to each specialty. There can be some limited criteria that apply to all providers. Measures and requirements for Meaningful Use for a family practitioner should not be the same as a surgical subspecialist who provides episodic care.

Elvina Treuil

Health risk needs to focus on prevention rather than reaction and treatment. It is understood that it is much more profitable for the system to react, and that is the focus of health care and what providers are trained and rewarded for. Quality should entail helping patients care for their good health – not just treating illness.

Eric Eisenstein

ONC explicitly connected methods for improving cognitive processes and care workflow with the meaningful use of EMR systems through its funding of the National Center for Cognitive Informatics & Decision Making. However, the proposed quality measures do not address these important interactions. Workflow should be an important consideration for understanding the link between the impact health IT has on healthcare practice and quality of care measures that define those impacts. Particularly important is their distinction between evidence-based and features-based approaches to health IT; their recognition that workflows, roles, organization structures and decisions are interdependent; and their conceptualization of a value stream that accrues from the sociotechnical system that utilizes a particular health IT. These are all important elements that need to be recognized in quality of care measures.

George

The Workgroup should devise a proposed set of actual measures and then solicit comments. Additionally, context and meaningful background is needed when requesting public comment.



Judith Lindsey

It is unclear as to what these clinical quality measures are intended to accomplish.

Kimberly Kelley

Patient access to EHRs and the ability to publish and/or request corrections of records should be included as a measure. Patients must have access to their records and must have the ability to request and/or make corrections.

Martha J Wunsch

In order to stem the increasing problem of prescription medication diversion, and subsequent problems such as overdose deaths, physicians and patients have to be accountable for medications and their management. Physicians are responsible for education of the patient about medication management, monitoring for the appropriate use of medications, particularly controlled substances, and for screening to identify the patient most at risk for prescription mismanagement or diversion. Patients, and their families, should be encouraged to ask questions and understand the importance of taking medications exactly as prescribed. They are ultimately responsible for taking medication as directed and protecting medications from diversion.

Allowing patients access to their records without interpretation of the physician is concerning because many things written in a chart are easily misinterpreted. There is a need to confirm whether the 45 Federal Confidentiality Requirements for patients whose records include psychiatric and substance abuse information are incorporated; these requirements were designed to protect patients with sensitive information in their charts at the highest level, incorporated.

Michael A Goldfarb

Only measures that are actionable should be used. The most important measure is missing and should be included: mortality root cause analysis. In surgery, technical errors are the most common but process errors must also be included. Analysis of surgical bleeding complications can change technical outcomes, and analysis of delays in surgery is key to reducing mortality. Medication errors in surgical patients are of minimal frequency compared to other complications. The object of outcome analysis is to define those measures that should have a preventable pathway going forward.

Nancy

Consider including measurement of pressure ulcers. The elderly are frequently discharged from hospitals with pressure ulcers because the caregivers there are focused on the immediate problem and do not perform an appropriate assessment of risk for skin breakdown and/or initiate preventative pressure relief measures at admission.



The Workgroup should consider requirements already in place before adding new data collection requirements. Home Care and Skilled Nursing facilities are already staggering under data collection including Minimum Data Set (SNF) and Outcome and Assessment Information Set, which generate Outcome Based Quality Improvement Measures and Process Outcome Measures.

Nina Homan

Domain: Patient and Family Engagement

- Consider an expanded role for pharmacy professionals, given the frequency of patient and/or caregiver interactions when prescriptions are ordered, filled and picked up by patients and or caregivers.

Sub-Domain: Appropriate/Efficient use of Medications

- Consider the role of over the counter (OTC) items in treatment and management of chronic and early preventative care (e.g., smoking cessation medications). OTC medication use can play a key role in identifying patients earlier and possibly at a more engagable stage in the disease process.

Measure Concept: Measures of an Advance Care Plan as a product of shared decision making

- Suggest measuring/tracking specific actions that lead to achievement of specific care plan goals.

Sub-Domain: Appropriate and Timely Follow-Up

- Consider the following related to medication therapy management: Specific prescription medication stopped as a result of elevated lab values such as lipid lowering agents stopped following elevated liver function tests – or new prescriptions generated as a result of appropriate lab work.

Measure Concept: Measures monitoring drug safety for patients who are on chronic medical therapy

- Consider additional activities such as geriatric mental status assessments following new drug therapies, compliance with appropriate monitoring for other narrow therapeutic range medications over and above warfarin.

Sub-Domain: Effective Preventative Services

- Include appropriate vaccine and immunization activity (e.g., annual flu, appropriate shingles, pneumonia, childhood immunizations and necessary boosters).

Sub-Domain: Health Equity

- Include measures related to appropriate vaccinations and immunizations, rate of medication reconciliation and other basic care guidelines by key age segment.



Shannah Koss

Domain: Patient and Family Engagement

- Include measures that address health literacy and information access and link to some of the 2020 goals.
- The measures should speak to helping patients with navigation of their full EHR including information that may reside with providers that are not part of HIE.
- The measures continue to measure the same thing across providers for overlapping patients thus in many respects double & triple count success and incentivize duplicative activities; some of these metrics could be determining that certain actions on behalf of a given patient had been done by one of the patients providers and not necessarily each provider.

Stephen L Axelrod

Healthcare delivery can be impacted by utilizing technologies that promote health maintenance in the home. Remote vital sign and biometric data collection from the bedside can prevent much costlier interventions. Additionally, measures of medication adherence and medication monitoring are recommended. There should be a goal for a targeted medication adherence in the home, which is a cost-effective approach to improving documented outcomes, lowering healthcare costs and improving the patient's experience.

Stephen Beller

The measures of the Patient Health Outcomes sub-domain should yield valid, reliable data from everyday clinical practice that researchers will find useful in building ever-evolving, evidence-based knowledge depicting the most cost-effective care options (treatments, procedures, medications, patient education, etc.) based on patient diagnoses and other relevant factors such as demographics, genetics, and the mind-body connection.

Trisha

Patients need access to their health records, the ability to request a change to their records, and providers should make changes as appropriate. However, making any changes to the patient's record should be the responsibility of the provider (or their staff) so that 1) they are aware of the information that is changing, and 2) the alteration of data is controlled for all patients at a central location.