NATIONAL QUALITY FORUM

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TO: CSAC

FR: Helen Burstin, MD, MPH, Senior Vice President, Performance Measures

DA: June 4, 2012

RE: **Appeal of All Cause Hospital-Wide Unplanned Readmission Measure**

A letter of appeal was submitted regarding **measure #1789: Hospital-wide all-cause unplanned readmission measure (HWR)** (Attachment A) endorsed in the *Patient Outcomes: All-Cause Readmission Expedited Review* project. The letter was submitted by a group of health systems, including Advocate Health Partners, Atlantic Health System, Cedars Sinai Medical Center, Hoag Hospital, Intermountain Healthcare, Johns Hopkins Health System, Medstar Health, and Virtua Health System. CMS/Yale has provided a response to the submitted appeal (Attachment B). The American College of Cardiology Foundation has also submitted a letter of support for the appeal (Attachment C). The appeal references a prior letter submitted during the Public and Member Comment Period by the American Hospital Association (AHA) that raised process concerns regarding the expedited review used to evaluate and approve this measure (Attachment D). The following materials are attached for your reference:

- *Attachment A*: Letter of appeal from Advocate Health Partners, Atlantic Health System, Cedars Sinai Medical Center, Hoag Hospital, Intermountain Healthcare, Johns Hopkins Health System, Medstar Health, and Virtua Health System (dated May 24, 2012)
- *Attachment B*: Response to letter of appeal from the measure developer (CMS/Yale) (dated May 30, 2012)
- *Attachment C*: Letter in support of the appeal from the American College of Cardiology (ACC) (dated May 22, 2012)
- *Attachment D*: Letter from American Hospital Association (AHA) referenced in the appeal letter (dated January 20, 2012)
- *Attachment E*: CSAC memorandum (dated March 2, 2012; amendment-dated March 9, 2012)
- *Attachment F*: Memorandum: Additional studies related to socioeconomic status for Measure 1789, Hospital-wide all-cause unplanned readmission measure (HWR) (dated April 2, 2012)
- *Attachment G*: Measure 1789 measure specifications

The NQF Consensus Development Process version 1.9 includes an appeal process and states that "*anyone may register a request for reconsideration of an endorsed*

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voluntary consensus standard by notifying the NQF in writing within 30 days of public notification that the voluntary consensus standard had been approved by the CSAC. For an appeal to be considered, the notification letter to the NQF must include information clearly demonstrating that the appellant has interests that are directly and materially affected by the NQF-endorsed voluntary consensus standard(s), and that the NQF decision has had (or will have) an adverse effect on those interests. Appeals will be reviewed by NQF staff and management, who may consult with the project's technical advisors, Steering Committee, and/or other sources, as appropriate, before a recommendation is provided to the CSAC and BoD. Following consultation with the CSAC, the BoD shall act on an appeal within seven calendar days of the CSAC's recommendation to BoD regarding the appeal. The result of this BoD action shall be promulgated in the same manner as the original decision. NQF will maintain a record of all appeals, as well as post them on the web site."

Subject of the Appeal

The appeal submitted on May 24, 2012, is largely grounded in process concerns and the definition of consensus. The appellants also reiterate concerns about the endorsement of NQF measure #1789 that was first outlined in a detailed letter from the AHA dated January 20, 2012. The appeal specifically questions "whether the NQF Consensus Development Process achieves consensus among affected stakeholders as intended, and reflects decision making in a high stakes environment that is, in our view, neither fair or balanced." The appellants also suggested that "a more robust forum for dialogue and consensus is necessary before this measure is adopted by the Centers for Medicare and Medicaid Services (CMS) for public reporting and payment decisions."

The CSAC is asked to:

1) Review the appeal letter, the AHA letter that it references and the measure developer response;
2) Review the questions raised regarding the endorsement process;
3) Make a recommendation to the Board of Directors on the appeal; and
4) Identify discussion items for the July in-person CSAC meeting regarding opportunities to improve the consensus process.

All-Cause Readmissions Expedited Review Project

In the readmissions project, multiple steps were taken to achieve consensus. The summary of the voting on the measure at each step in the consensus process is noted below.

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Consensus Step	1789: All Cause Hospital-Wide Unplanned Readmission (CMS/Yale)
Steering Committee Final Vote following Comment	Yes: 14; No: 5
Member Voting	% Councils approving > 50%: 57%; Average council approval: 67%
CSAC	Yes: 11; No: 2
Board of Directors	Yes: 21; No: 0

Steering Committee

A 21-member Steering Committee representing a range of stakeholder perspectives reviewed the submitted all-cause readmission measures. Measure #1789, Hospital-wide all-cause unplanned readmission measure (HWR) developed by CMS/Yale, was recommended by the Steering Committee after much discussion and review of additional analyses provided by the developer. During the Public and Member Commenting Period, NQF received 117 comments from 43 organizations and individuals on the measures that were recommended and not recommended for endorsement. The Steering Committee discussed the following themes from the comments: 1) justification of an expedited review; 2) socioeconomic (SES)/race variables in the risk-adjustment model; 3) usability concerns; 4) support for harmonization; and 5) inclusion/exclusion criteria. The discussion regarding justification of an expedited review was outside the purview of the Steering Committee and was subsequently handled by the CSAC and Board on February 13th and February 24th respectively.

After reviewing the comments, the Committee chose to re-vote on whether measure #1789 met the NQF criteria for endorsement. Following the re-vote (Yes-14, No-5), measure #1789 was recommended for NQF endorsement by the Committee with the following guidance:

> *In order to support fair and appropriate comparisons, hospital performance on this measure should be reported within like comparison groups.*

The Steering Committee expressed interest in further exploring community-level SES variables that could be used in a reliable and valid risk-adjustment model. The Committee also encouraged CMS and other potential users to improve the timeliness of reporting and other aspects of measure implementation to support measure usability. Additionally, there was strong support for harmonization for both hospital- and plan-level measurement by the first annual update.

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Membership Voting

The appeal letter states that "less than 20% of the more than 400 NQF member organizations voted on this measure and a disproportionate number of Health Professional and Provider Organization members voted "No", with the final total vote actually being less than 50% in favor of the measure."

Each NQF member organization may cast one vote in favor of or against approval of a Steering Committee's recommendations. A member organization may also abstain from voting on a particular consensus development project or measure. Since NQF must consider various stakeholder perspectives, the total voting count across all councils (in this case 64) is not utilized to assess consensus. Doing so would automatically put smaller councils, such as Consumers and Purchasers, at a distinct disadvantage in voting. Instead, the metric "Percentage of councils approving > 50%" is used to assess consensus across the full stakeholder community as it calculates the percent of councils that approved the measure by a simple majority. For this project members from 7 of the 8 councils participated in the voting (there were no votes from members of the supplier/industry council), and four out of seven councils supported the CMS/Yale measure (57%).

Measure #1789 Hospital-wide all-cause unplanned readmission measure (HWR) (CMS)

Measure Council	**Yes**	**No**	**Abstain**	**Total Votes**	**% Approval***
Consumer	6	0	0	6	100%
Health Plan	4	2	0	6	67%
Health Professional	4	7	0	11	36%
Provider Organizations	4	17	2	23	19%
Public/Community Health Agency	1	0	0	1	100%
Purchaser	7	0	0	7	100%
QMRI	4	5	1	10	44%
Supplier/Industry	0	0	0	0	
All Councils	30	31	3	64	49%
Percentage of councils approving (>50%)					**57%**
Average council percentage approval					67%

*equation: Yes/ (Total - Abstain)

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CSAC

On March 8th, the CSAC reviewed the NQF Member voting results (Attachment E) along with the recommendations and discussions of the Steering Committee. During their discussion they expressed concern over the lack of support for the measures in the health professional, provider, and QMRI councils. The CSAC also reviewed concerns raised by the AHA in their letter dated January 20, 2012. These comments raised three principal concerns: 1) the lack of adequate risk adjustment; 2) usability of the measure; and 3) process issues related to determining if an Expedited Review was appropriate.

The CSAC reviewed analysis provided by CMS/Yale to the Steering Committee on the performance of hospitals using measure #1789 by hospital proportion of Medicaid patients to evaluate the adequacy of the risk adjustment method. CSAC members considered requesting additional information from CMS/Yale on the performance rank of safety net hospitals. Ultimately, the CSAC concluded that additional analysis on the performance of safety net hospitals would not provide new insight beyond the analyses already provided to the Steering Committee. The CSAC also discussed the Steering Committee's recommendation to compare hospitals to like comparison groups. Members of the CSAC believed that stratification might be inappropriate, and noted that not only was there no evidence to support that hospitals would perform differently based on the proportion of low SES patients but also that reporting by like comparison groups would diminish the measure's usefulness as a tool for consumers.

Echoing the sentiments of the Steering Committee, the CSAC also encouraged CMS to improve the timeliness of reporting and other aspects of measure implementation to support measure usability. The CSAC voted to recommend Measure #1789 for endorsement.

Regarding issues surrounding the Expedited Review, the CSAC reviewed the proposed "all cause" readmission project against the criteria of the expedited policy on February 13th. Those criteria were:

1) The extent to which the measures under consideration have been sufficiently tested and/or in widespread use;
2) The scope of the project/measure set is relatively narrow; and
3) There is a time-sensitive legislative/regulatory mandate for measures.

There were no concerns with the first criterion since the submitted measures were fully tested by the time of submission. The CSAC had extensive discussion about the second criterion, which required that the "project/measure set be relatively narrow in scope." At the time of the decision to proceed with the expedited review, NQF interpreted this to mean that the project scope should be narrow and the potential

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number of measures under expedited review would be small. CSAC members suggested that "narrow in scope" might also refer to the complexity of the measures under consideration and/or the potential number of patients and providers who could be impacted by the measure. For the third criterion, the time-sensitive legislative/regulatory mandate, there was consensus among CSAC members that CMS would be considered the entity most appropriate to assess what mandates led them to request this review. However, NQF remains responsible to ensure that adequate information and justification are provided.

CSAC members were asked to indicate if they disagreed with the decision to approve this expedited review. CSAC members generally agreed that there was no evidence that would lead them to overturn the decision by the CSAC Chair and Vice Chair. One member of the CSAC abstained due to the complexity of the measure.

Board of Directors

The Board of Directors had two conference calls related to the all-cause readmission measures. In the first conference call on February 24, 2012, the Board reviewed the CSAC discussion on the appropriateness of the expedited review. The Board of Directors discussed the issues raised, and voted to uphold the expedited review for these measures. The Board agreed that further clarification on the criteria would be needed for future expedited reviews.

In a second conference call on April 9th, the Board discussed the CSAC recommendations related to the two measures in the project with a great deal of discussion focused on the CMS/Yale measure. The Board discussed many of the concerns previously raised throughout the endorsement process, including usability, adequate risk adjustment or SES, and justification for an expedited review. Ultimately, the Board voted to ratify measure #1789 (Yes-21, No-0) with guidance language that should accompany the measure. The guidance language was intended to reflect the multiple perspectives voiced during the Board discussion, which included the multifactorial nature of readmissions and the importance of hospital-community collaboration to reduce readmissions. The guidance language is as follows:

> *Multiple factors affect readmission rates and other measures including: the complexity of the medical condition and associated therapies; effectiveness of inpatient treatment and care transitions; patient understanding of and adherence to treatment plans; patient health literacy and language barriers; and the availability and quality of post-acute and community-based services, particularly for patients with low income. Readmission measurement should*

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reinforce national efforts to focus all stakeholders' attention and collaboration on this important issue.

Prior to the endorsement decision by the Board of Directors, supplemental analyses (Attachment F) were provided by Yale on the potential impact of the CMS hospital-wide readmission measure on safety net hospitals as this was the most frequently cited concern during the process. The supplemental analyses were shared with the CSAC and the Board of Directors.

Changes to the Expedited Review Process

A set of updated criteria for expedited review were presented to the Board of Directors on May 10, 2012. The updated criteria included more precise definitions, including a clear relationship to critical timelines for rulemaking; a specific requirement for measure testing; and relation to a gap area in the NQF portfolio. To respond to concerns related to the somewhat contracted nature of expedited reviews, the usual measure review periods, including a 30-day comment period, will be maintained for these potentially high stakes measures.

Appeal Discussion

The CSAC will need to review the all-cause readmissions project and the concerns/issues identified with the consensus process in the AHA letter and the appellants' letter, with a specific focus on the question of whether consensus was achieved in this project.

The appeal letter states that "less than 20% of the more than 400 NQF members voted on this measure and a disproportionate number of Health Professional and Provider Organization members voted "No", with the final total vote actually being less than 50% in favor of the measure."

As outlined above, NQF member council votes are determined by a simple majority of those casting votes within a council. The metric of the percent of councils approving > 50% is used to assess consensus across the full stakeholder community. Members from 7 of the 8 councils participated in the voting (there were no votes from members of the supplier/industry council), and four out of seven councils supported the CMS/Yale measure.

For this project, consensus was achieved at the Steering Committee, CSAC and Board levels. The membership vote (57% percentage of councils voting > 50%) also follows the standard for achieving consensus.

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NQF's Consensus Development Process (CDP) is grounded in the guidance from the National Technology Transfer and Advancement Act (NTTAA) and closely tracks the OMB Circular A-119. The five elements of a consensus development organization include:

- Openness
- Balance of interest
- Due process
- Appeals process
- Consensus

The OMB Circular defines consensus as "general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties, as long as all comments have been fairly considered, each objector is advised of the disposition of his or her objection(s) and the reasons why, and the consensus body members are given an opportunity to change their votes after reviewing the comments."[1]

The NQF CDP specifically requires that "the Steering Committee will be expected to achieve consensus (as defined in OMB Circular A-119), before advancing a document for further NQF action." Most disagreements regarding performance measures are resolved through the usual process of multi-stakeholder Steering Committee deliberations and the vigorous public and member comment period. The Steering Committee reviews all of the comments and shares their resolution of the comments prior to advancing a measure for Member voting. While it is not always possible to achieve widespread acceptance across the broad NQF community of stakeholders, significant splits in voting are rare and in general, there is usually broad agreement on the vast majority of consensus standards.

The NQF Restructuring Plan adopted by the Board of Directors in 2007 included the creation of the CSAC. The CSAC was given the responsibility for making endorsement decisions subject to final ratification by the Board of Directors. Prior to 2007, proposed consensus standards required approval by all four councils on the first round of voting or at least two councils on the second round of voting prior to consideration by the Board for final endorsement. Council approval was determined by a simple majority of those casting votes. The overwhelming majority of proposed consensus standards moved forward to the Board for consideration under the previous process.

[1] OMB Circular A-119 (1998)

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Since 2007, NQF member voting results are summarized for each of the eight councils for consideration by the CSAC in making endorsement decisions. Following public and member comment on the proposed restructuring plan, the Board approved a final plan in March 2007 that stated all candidate consensus standards would move forward to the CSAC after one round of voting, along with information on the concerns raised by the Members and the Steering Committee. The CSAC would have the option of calling for a second round of voting if it was unclear whether member concerns had been adequately addressed.

As noted above, consensus is defined as "general agreement, but not necessarily unanimity." Since the restructuring in 2007, NQF no longer has a threshold based on the number of councils approving a measure prior to moving forward an endorsement decision by the CSAC and Board. Furthermore, endorsement approvals by the CSAC are subject to final ratification by the Board of Directors.

The appellants question whether NQF should provide "a more robust forum for dialogue and consensus is necessary" prior to adoption by CMS. The question of the need for a second round of NQF member voting was discussed by CSAC at the March in-person meeting. The CSAC determined that additional information was unlikely to change voting perspectives. The question of further dialogue about measure selection prior to use in a specific program by CMS is within the purview of the NQF-convened Measures Application Partnership (MAP) as the CDP is intended to determine the appropriateness of a given measure against the measure evaluation criteria for endorsement but is not specific as to its use. Of note, the MAP Coordinating Committee approved this measure for Inpatient Quality Reporting (IQR) on January 6, 2012, pending the endorsement decision on the measure.

The appellants also point out publications by Joynt and Jha, and Berenson et al in the New England Journal of Medicine. The appellants suggest that these articles reinforce their concerns related to the usability of the measure under consideration. CMS/Yale prepared a response to address these concerns (Attachment B).

It appears the primary concern raised in the AHA letter, the appeal letter, and the letter of support, is how the measure endorsement decision relates to the possible uses of the measure for public reporting and payment. However, NQF endorsement considers only whether a measure is appropriate for one or more accountability applications. The MAP is charged with identifying which measures are suitable for particular accountability applications.

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Discussion Questions for CSAC:

1) Are there any process concerns raised in the AHA or appellants' letter that have not been adequately addressed by NQF?
2) As stated in the appellants' letter, did the CDP "achieve consensus among affected stakeholders as intended, and reflects decision making in a high stakes environment that is, in our view, neither fair or balanced?"
3) Would you support continued endorsement of the measure?
4) What else could NQF do to ensure that feedback on measure use, including potential unintended consequences of measurement, is gathered and reviewed in the consensus process (e.g., at annual updates)?
5) Identify discussion items for the July in-person CSAC meeting regarding opportunities to improve the consensus process.

NQF Appeal Request Measure 1789

The undersigned organizations (all NQF Members) wish to appeal the final decision of the NQF Board of Directors to ratify Measure 1789, Hospital-wide all cause readmission measure approved on April 24, 2012. We have several serious concerns about the endorsement of this measure as outlined in the detailed letter to Janet Corrigan, NQF CEO, from the American Hospital Association (AHA) of January 20, 2012. In the interest of brevity, we agree fully with all of AHA's concerns as voiced in this letter.

In addition, the summary of the NQF membership vote on this measure is displayed in the table below.

Measure #1789 Hospital-wide all-cause unplanned readmission measure (HWR) (CMS)

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	6	0	0	6	100%
Health Plan	4	2	0	6	67%
Health Professional	4	7	0	11	36%
Provider Organizations	4	17	2	23	19%
Public/Community Health Agency	1	0	0	1	100%
Purchaser	7	0	0	7	100%
QMRI	4	5	1	10	44%
Supplier/Industry	0	0	0	0	
All Councils	30	31	3	64	49%
Percentage of councils approving (>50%)					**57%**
Average council percentage approval					67%

*equation: Yes/ (Total - Abstain)

It is noted that less than 20% of the more than 400 NQF members voted on this measure and a disproportionate number of Health Professional and Provider Organization members voted "No", with the final total vote actually being less than 50% in favor of the measure.

These findings call into question serious concerns about whether the NQF Consensus Development Process achieves consensus among affected stakeholders as intended, and reflects decision making in a high stakes environment that is, in our view, neither fair or balanced.

While we have not fully polled the rest of the NQF membership on this issue, we believe that we represent the vast majority of members in both the Health Professional and Provider Councils, which also constitute close to 50% of NQF's overall membership.

We believe that a more robust forum for dialogue and consensus is necessary before this measure is adopted by the Centers for Medicare and Medicaid (CMS) for public reporting and payment decisions. We also wish to point out additional information recently published in the

New England Journal of Medicine by Joynt and Jha,[1] and Berenson, et al[2], which further reinforce our concerns about the usability of these types of performance measures by CMS.

We remain in support of NQF's mission to improve the quality of care nationwide, but believe that there is strong need to revisit this decision, especially with more NQF members involved.

Sincerely,

Advocate Health Partners

Atlantic Health System

Cedars Sinai Medical Center

Hoag Hospital

Intermountain Healthcare

Johns Hopkins Health System

Medstar Health

Virtua Health System

[1] Joynt KE, Jha AK. Thirty-day readmissions-Truth and consequences. NEJM 2012; 366 (15): 1366-1369.
[2] Berenson RA, Paulus RA, Kalman NS. Medicare's readmissions-reduction program-A positive alternative. NEJM 2012; 366 (15): 1364-1366.

DEPARTMENT OF HEALTH & HUMAN SERVICES
Centers for Medicare & Medicaid Services
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May 30, 2012

Alexis Forman Morgan, MPH
Senior Project Manager, Performance Measures
National Quality forum
Washington, DC 20005

Re: Response to Readmissions Measure #1789 Appeal

Dear Ms. Morgan:

Thank you for your e-mail requesting our response to the appeal of NQF endorsement of Measure 1789, Hospital-Wide All-Cause 30 Readmission Measure. You asked us to address specifically the usability concern raised. This was based on two perspective opinion pieces in the New England Journal of Medicine.

We do not believe that the authors present any new evidence. Rather, they offer opinions on the general merits of 30-day readmission measures for hospital accountability and on the Medicare Readmission Reduction Program enacted as part of the Affordable Care Act. Their views were presented and vetted at various points in the endorsement process of the measures. We do not believe a restating of previously considered views should be the basis of an appeal.

With regard to the basic concept of 30-day readmission measures for hospital quality and accountability, the NQF has endorsed such measures on numerous occasions. These include the CMS 30-day readmission measures for AMI, HF, Pneumonia, Hip/Knee replacement, and PCI, as well as, the health-plan level readmission measure developed by the NCQA. The argument being made on appeal runs counter to the policy represented by the endorsement of these NQF measures.

As for the Medicare Readmission Reduction Program, the concerns raised are about the statute enacted by Congress, and are not pertinent to the endorsement of the Hospital-Wide Readmission measure. We do not believe that the NQF review process is the appropriate venue for discussion of alternative hospital payment strategies. CMS proposed to adopt the Hospital-Wide Readmission measure in the FY2013 proposed IPPS rule for public reporting for the Inpatient Quality Reporting program (not for payment purposes). We note that the NQF Measure Applications Partnership (MAP) has supported use of this measure for the Quality Reporting program.

We would also like to respond to some of the specific points raised in the Joynt/Jha commentary.

1) The authors argue that 30-day readmission is not a good quality metric, asserting that few readmissions are preventable, that much of what affects the rates is out of hospitals' control, and that higher readmission rates may reflect good quality rather than poorer quality care.
CMS believes that 30-day risk-standardized readmission rates are a critically important quality metric. The public reporting of readmission rates illuminates an important and common adverse event for patients.

CMS does not agree that reducing rates is outside of hospitals' control. Hospitals can affect readmission risk through the care they deliver and through their leadership in communities. Many initiatives around the country have demonstrated that a patient-centered focus on the transition of care from the inpatient to outpatient setting can lead to decreased readmission rates for patients. Hospital-led interventions are already successfully reducing the risk of readmission.[1-18]

We note, however, that these efforts are in various stages around the country, and we do not expect to see the full benefit of these activities for some time. Prior to public reporting there was little attention or visibility of this outcome. Hence, the graph presented in the article showing no change in acute myocardial infarction, pneumonia, and heart failure readmission rates from 2002-2009 should be expected, since national public reporting for these measures did not begin until 2009.

The authors assert that higher readmission rates may reflect better care. We disagree. We do not expect hospitals with lower mortality and better safety records to have higher readmission rates. We know from the results of the three publicly reported measures that many hospitals do well on both CMS's mortality and readmission measures.

2) The authors assert that it would be better to drive improvements in care coordination through more targeted hospital metrics that, for example, hold hospitals accountable for medication reconciliation at discharge.

We fully agree that process measures are an important component of quality improvement and can play a role in improving care transitions. Nonetheless, as recently demonstrated by Hansen et al, no single process in isolation influences hospital readmission, which is a complex and multi-factorial outcome.[19] Successful interventions to reduce readmissions have required multifaceted approaches. Consequently it is important to hold hospitals accountable for the ultimate outcome in order to drive comprehensive improvements in transitional care.

While measures targeting specific processes have a role in quality improvement, what ultimately matters is the extent to which efforts to improve processes affect patient outcomes. CMS is choosing to measure the outcome of readmission directly, given its importance to patients and the health care system. Patients who receive better care during their hospital stays and during the transition to a non-acute setting will likely have improved outcomes such as survival, functional ability, and quality of life as well as reduced readmissions.

3) Finally, the authors assert that hospital investments in readmission are diverting resources from other more important quality activities such as improving patient safety.

Both improving patient safety and reducing readmissions are important goals, and they are not competing efforts. Hospitals can achieve lower readmission rates in part through improving

patient safety. Numerous studies demonstrate a relationship between patient safety and readmissions.[20-26] Thus, interventions to reduce readmission require a focus on patient safety – ensuring best inpatient care, avoiding complications, reconciling medications to prevent adverse drug events, and adequately preparing patients for discharge.

We would like to close our response by addressing the concern with the Hospital-Wide Readmission measure's "usability" expressed by the authors of the appeals letter. Their letter cites two commentaries (NEJM, April 2012) as raising new concerns about the usability of 30-day readmission measures. NQF defines usability as the "extent to which intended audiences (e.g., consumers, purchasers, providers, and policymakers) can understand the results of the measure and find them useful for decision-making." The Hospital-Wide Readmission measure will capture a broad range of readmissions and provide important and valid information to these multiple stakeholders. Not all readmissions are preventable, and the goal is not zero readmissions. But even a small reduction in hospital-wide readmission rates nationally will translate into many patients avoiding the risks and costs of repeat hospitalization. We believe hospitals are well-positioned to lead our readmission reduction efforts. The commentaries do not provide any compelling information to the contrary.

Sincerely yours,

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Enclosure: References

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May 22, 2012

Timothy Ferris, MD, MPH, Chair
Consensus Standards Approval Committee (CSAC)
National Quality Forum
1030 15th St, NW
Suite 800
Washington, D.C. 20005

Via e-mail: tferris@partners.org;
cc: hburstin@qualityforum.org; hbossley@qualityforum.org

Dear Dr. Ferris:

I am writing to express the American College of Cardiology Foundation's support for the appeal of the endorsement of the Hospital-wide All-cause Unplanned Readmissions measure (HWR) (NQF measure 1789) requested by Atlantic Health System and others. We strongly believe that this measure is not ready to be used for public reporting and are very concerned that the expedited nature of the review process was inadequate for a measure of such complexity and for which the stakes are so high. We ask that you reconsider the decision to endorse it.

The number of preventable readmissions has actually been dropping and is likely less than that stated in the final report. More recent estimates from Canadian researchers find it is likely less than twenty percent of overall urgent readmissions.* This will vary by disease state, but certainly preventable readmissions represent only a minority of readmissions. Recent research at the Veteran's Administration also indicates that readmission rates are not correlated with other measures of quality. In addition, Cleveland Clinic researchers evaluated Hospital Compare data and found that for hospitals with an above average readmission rates there was a negative correlation between readmission and mortality (i.e., those with the best mortality had the worst readmission rates). While in the past quality of care may have played an important factor in the readmission rate, we believe it is now overwhelmed by the other factors, including patient severity of illness, aggressiveness of care and preference for location of care) and the quality signal is weak at best.

In addition, we have serious concerns about the NQF consensus process which, in this instance does not appear to have resulted in true consensus. Less than 20% of the NQF membership voted on this measure with the majority of Health Professional and Provider Council members voting against it and the overall vote showing less than 50% in favor.

Given the high stakes in publicly reporting this information and the tremendous complexity surrounding causes of readmissions, we believe it is critically important that NQF ensure that adequate consensus is achieved. We are very concerned that the expedited nature of this review process may have inhibited member input during the comment and voting periods and we would urge NQF to revisit its decision to endorse it.

We would be happy to discuss this with you at any time.

Sincerely,

William A. Zoghbi, MD
President, American College of Cardiology

*van Walraven C, Jennings A, Taljaard M, Dhalla I, English S, Mulpuru S, Blecker S, Forster AJ. Incidence of potentially avoidable urgent readmissions and their relation to all-cause urgent readmissions. CMAJ. 2011 Oct 4;183(14):E1067-72.

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January 20, 2012

National Quality Forum
1020 15 Street, N.W.
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Washington, DC 20005

RE: Expedited Review of All Condition, All Cause Readmissions Measures

Dear Dr. Corrigan:

On behalf of our nearly 5,000 member hospitals, health systems and other organizations, , the American Hospital Association (AHA) appreciates this opportunity to comment on the all-condition readmission measures currently under Expedited Review. These measures are potentially important to a wide variety of health care stakeholders. Consumers are being encouraged to use these measures to assess hospitals' ability to successfully treat patients and prevent complications that would bring them back to the hospital. Payers, including Medicare, may choose to use them for payment incentives or to tier networks of providers. Providers are expected to use them to monitor their ability to appropriately transition patients to the next level of care.

The readmission measures are intended to draw attention to readmissions that could and should have been prevented through appropriate action on the part of the health plan (in the case of the National Committee for Quality Assurance measures) or the hospital (in the case of the Centers for Medicare & Medicaid Services (CMS)/Yale measure). This is an incredibly complex and challenging task because not all readmissions could or should have been prevented, as the Steering Committee discussed. Readmissions are caused by a host of factors and involve the actions of not only hospitals but other care providers, and of the patients and their families, payers and policymakers.

Clearly, hospitals have a responsibility for taking appropriate actions to ensure patients do not need to be readmitted when those admissions are preventable. Hospitals understand their responsibility for addressing these issues and are eager to have a good measure, or set of measures, that appropriately assesses how well they are doing in preventing those readmissions they can. But if the measures do not include adequate exclusions or risk adjustments that recognize the fact that some readmissions are planned and appropriate and others are the result of something outside the scope of what a hospital or a health plan can manage, then the measures create confusion, limit hospitals' ability to identify real opportunities for improvement and prompt others to unfairly judge the performance of hospitals.

Because the causes of readmissions are complex and public policy makers and payers are eager to put National Quality Forum (NQF) endorsed measures to use quickly, it is critically important that the measures advanced through the NQF process have a thorough and fair review. NQF has put in place processes to ensure that happens through the Consensus Development Process – a process that has been in use for several years and that includes specific timeframes for input of stakeholders into the work of the Steering Committee and for voting – is meant to ensure this review takes place.

The Expedited Review

Anticipating that there may be occasions on which there is an urgent need for a measure to meet a legislated or regulatory mandate, the NQF board adopted a policy by which an expedited review could be authorized. This is the first project for which an expedited review has been undertaken and, understandably, we are all learning how it works and identifying opportunities for clarification. Nonetheless, the AHA is disappointed that the necessary authorization for the expedited review that is called for in the board-adopted policy was apparently not obtained to initiate this project and that NQF did not investigate whether there was, in fact, a legislative or regulatory mandate that necessitated the expedited review in accordance with the stated criteria. **We do believe that this request did not, in fact, meet the NQF's criteria for an expedited review for the reasons articulated below.**

Further, we observe that the expedited review process had a dilatory effect on the work of the Steering Committee. The process prevented Steering Committee members from having a full and open discussion of whether the measures met all of the NQF endorsement criteria, precluded the measure developer from providing as full and thoughtful a set of responses as it might have wished to address many of the issues the Steering Committee raised, and impinged on the Steering Committee's ability to undertake a full and substantive review of the analyses the measure developer was able to produce during the course of the Steering Committee meeting or in the week that followed. In turn, the materials provided in the report for review by NQF members and the public are less clear and meaningful than they should be to enable us to fully understand and comment on the content of the report and discussions.

In the end, the public and NQF members are being asked to comment on measures that the Steering Committee believes have substantial flaws, as indicated by the less than unanimous vote to recommend these measures be brought forward. That recommendation was made only on the presumption that further changes will be made to the measures over the next year, and that even more substantial changes are expected within the next three years.

An expedited review, by design, curtails the time allotted for the Steering Committee to review measures, for the public and members to comment, for NQF members to vote, and for the Consensus Standard Approval Committee (CSAC) to process the measures and make its decision. These shortened timeframes abridge everyone's ability to effectively participate in the multi-stakeholder discussion and consensus process that is the fundamental reason for the NQF's existence. As a member of the NQF from its inception, the AHA believes in the importance of the multi-stakeholder consensus process and values the opportunity to participate in it. We believe that the opportunity for all interested stakeholders to fully participate in the review of the proposed measures and the Steering Committee's decisions, and to thoughtfully exercise our right to comment and vote on the measures, should not be abbreviated except in those rare instances when there is a clear and compelling need.

The NQF board appears to have been similarly concerned that Steering Committee, member and public input not be curtailed without sufficient justification. The board tasked the multi-stakeholder decision-making body, the CSAC, with making the determination that the criteria for expedited review had been met. Because the CSAC is multi-stakeholder, it brings a wide variety of perspectives to such a critical decision, including the perspectives of individuals from all of the different NQF councils. Further, the NQF board laid out three criteria, all of which must be met, to justify the expedited review. These are detailed in the NQF's September 23, 2010 board-adopted policy as follows:

1. The extent to which the measures under consideration have been sufficiently tested and/or in widespread use;
2. Whether the scope of the project/measure set is relatively narrow; and
3. Time-sensitive legislative/regulatory mandate for the measures.

We searched for the CSAC minutes or a transcript documenting the discussions of why the CSAC believed this request met the stated criteria, but we learned from staff that the CSAC as a whole never discussed the appropriateness of this request *vis a vis* the articulated criteria and that no set of minutes or transcript exists to review. Further, there is no documentation in the Steering Committee report concerning the rationale for having granted an expedited review or how CMS's request was judged to meet the board-established criteria. We are puzzled about how one would effectively judge measures against the first two criteria, but we are clear that the third criterion has not been met.

Extent to which the measures have been sufficiently tested and/or are in widespread use. Of the three measures submitted for this review, one has been in broad use (the NCQA plan level measure). For the other two (the CMS/Yale measure and the United measure) a judgment had to be made that they had been "sufficiently tested." There are no details in the board-adopted policy that would enable the developers or anyone else to readily understand what is meant by "sufficiently tested." Additionally, there is nothing included in the draft report that would allow us to understand what factors were considered in making the judgment that these measures had been tested and were ready to move forward. We think it is valuable for individuals other than the measure developer to have had the opportunity to test the measure's performance and be able to discuss its strengths and weaknesses before it is proffered for endorsement as a national standard. We believe that testing by someone other than the developer should be required for a measure to be considered "sufficiently tested," but we recognize that others may have a variety of views on what constitutes sufficient testing. At this juncture, we simply urge that the **NQF board consider providing additional detail on what it means by "sufficiently tested" to bring greater clarity to the decisions on what qualifies for expedited review.** Further, we think it is appropriate that a description of how the measures being brought forward meet this criterion should be included in the CSAC minutes of the approval of the expedited review and in the report of the Steering Committee so that all interested stakeholders can fully understand why their opportunity to participate in the process, to comment and to vote has been curtailed.

Narrow scope of project/measures. Similarly, we believe more information is needed so that all may have a common understanding of what the board meant when it said the "scope of the project/ measures set is relatively narrow." To most hospitals, looking at readmissions for

virtually all of the patients admitted to the hospital is not a "narrow" undertaking. It requires consideration of and decisions on a wide variety of conditions that may or may not be included in the list of exclusions or rolled into the risk adjustment factors, and other such decisions – literally hundreds of decisions about the construct of the measures that lead to different results depending on what decision is made. We thought that a measure that potentially touches on every patient admitted to a hospital would be considered broad, but we understand that others may have different perspectives and **urge the NQF board to provide a better articulation of what it means by "relatively narrow" to ensure the policy is implemented as the board intended.**

A time-sensitive or regulatory mandate. It is clear that the measures included in this project do not meet the time-sensitive requirement**.** Documents from the early part of this project, such as the Call for Measures, indicate that CMS requested the expedited review to use the measure in complying with Sections 3025 and 3026 of the *Patient Protection and Affordable Care Act* (ACA). Section 3025 establishes a readmission penalty for Medicare payments and Section 3026 creates a Care Transition assistance program. Section 3026 provides funding for community based organizations that are working in partnership with hospitals to assist in reducing readmissions, but it does not call for the creation of new measures. Instead, it requires the use of measures adopted by the Secretary under Section 3025. For purposes of this discussion, Section 3025 is the relevant section.

Section 3025 of the law instructs the Secretary to initiate the readmissions penalty program beginning in fiscal year (FY) 2013 using condition- or procedure-specific readmission measures. Specifically, it instructs the Secretary to begin with the acute myocardial infarction (AMI), heart failure and pneumonia readmission measures that have been endorsed by NQF. Beginning in FY 2015, the Secretary is instructed to expand the readmission measures to the four conditions identified by Medicare Payment Advisory Commission (MedPAC) as important, which are chronic obstructive pulmonary disease, coronary artery bypass grafts, percutaneous transluminal coronary angioplasty and other vascular conditions. The Secretary also may expand the list of conditions on which she is measuring to include readmissions for additional conditions or procedures she deems to be important. **All of the language of the provision calls for condition-specific or procedure-specific readmission measures; there is no language indicating that an all-condition readmission measure is desired or appropriate for this policy**. Further, the Secretary is instructed that the measures shall take into account "through risk adjustment or other methods" exclusions for readmissions that are unrelated to the prior discharge. **At the Steering Committee meeting, Yale expressly acknowledged that its measure did not take into account unrelated readmissions.** For all of these reasons, this measure does not meet the requirements of Section 3025 and, thus, this cannot be the justification for an expedited review, as I noted at the Steering Committee meeting.

Dr. Helen Burstin subsequently notified me that CMS's justification for an expedited review was not Section 3025, but instead was Section 10303 of the Affordable Care Act; it is this section that is cited in the report as providing the justification. Section 10303 directs the Secretary to develop and periodically update provider-level outcome measures for hospitals, physicians and other providers she determines to be appropriate. The outcome measures are to address "acute and chronic diseases including, to the extent feasible, the five most prevalent and resource-intensive acute and chronic medical conditions…" There is nothing in this section that speaks to a need or desire for an all-condition measure. There is nothing in this section that directs the use

of these measures in any program or indicates any time sensitivity with regard to their adoption in a program. The only time constraints articulated in law are for the development of the measures and their periodic update. We are not suggesting that the department should develop the required measures and let them lie fallow. However, **Section 10303 provides no justification for the expedited review by NQF of these measures because there is no time-sensitive legislative mandate for the endorsement or use of the measures and there is no indication that Congress sought development of generic, all-condition readmission measures.** Instead, it very clearly anticipated condition- or procedure-specific readmission measures.

The lack of time for reviewing these critically important measures is not merely an inconvenience. As previously articulated, the time pressure for reviewing these measures impinged on the work of the Steering Committee and is making it much more challenging for NQF members and other stakeholders to provide meaningful input, particularly since this report is out for review at the same time as other critical documents, such as the perinatal measures report and the Measure Applications Partnership report. We believe it is within the authority of the CSAC to review the justification for an expedited review in this matter, and if the CSAC agrees with us that an expedited review was not appropriate because the criteria for expedited review were not met and the process for obtaining authorization for expedited review was not followed, then we suggest there may be several steps that could be taken to provide some relief:

- The CSAC could consult with the chairs and members of the Steering Committee to determine if it would be beneficial to bring the group back together for another meeting for a fuller discussion of the issues raised during the first in-person meeting. The Steering Committee's discussions could be further informed by the comments that have been received during this truncated review process.
- Members and the public should be granted additional time for review and comment on these measures. If the Steering Committee is to be reconvened and might, as a result, alter any of the original decisions and recommendations, we urge that there be a second public comment period that commences with the reissuance of the Steering Committee's revised recommendations. If the Steering Committee is not reconvened, we urge that the current comment period be extended another 30 days and that NQF widely publicize the new opportunity for review and comment, organize member calls whereby members can discuss the document and their areas of concern and agreement, and make available information from the measure developers that clarifies and explains the materials that are currently appended to the report.
- Finally, we urge that the CSAC make the normal timeframe available for voting on this report.

Characteristics of the Measures

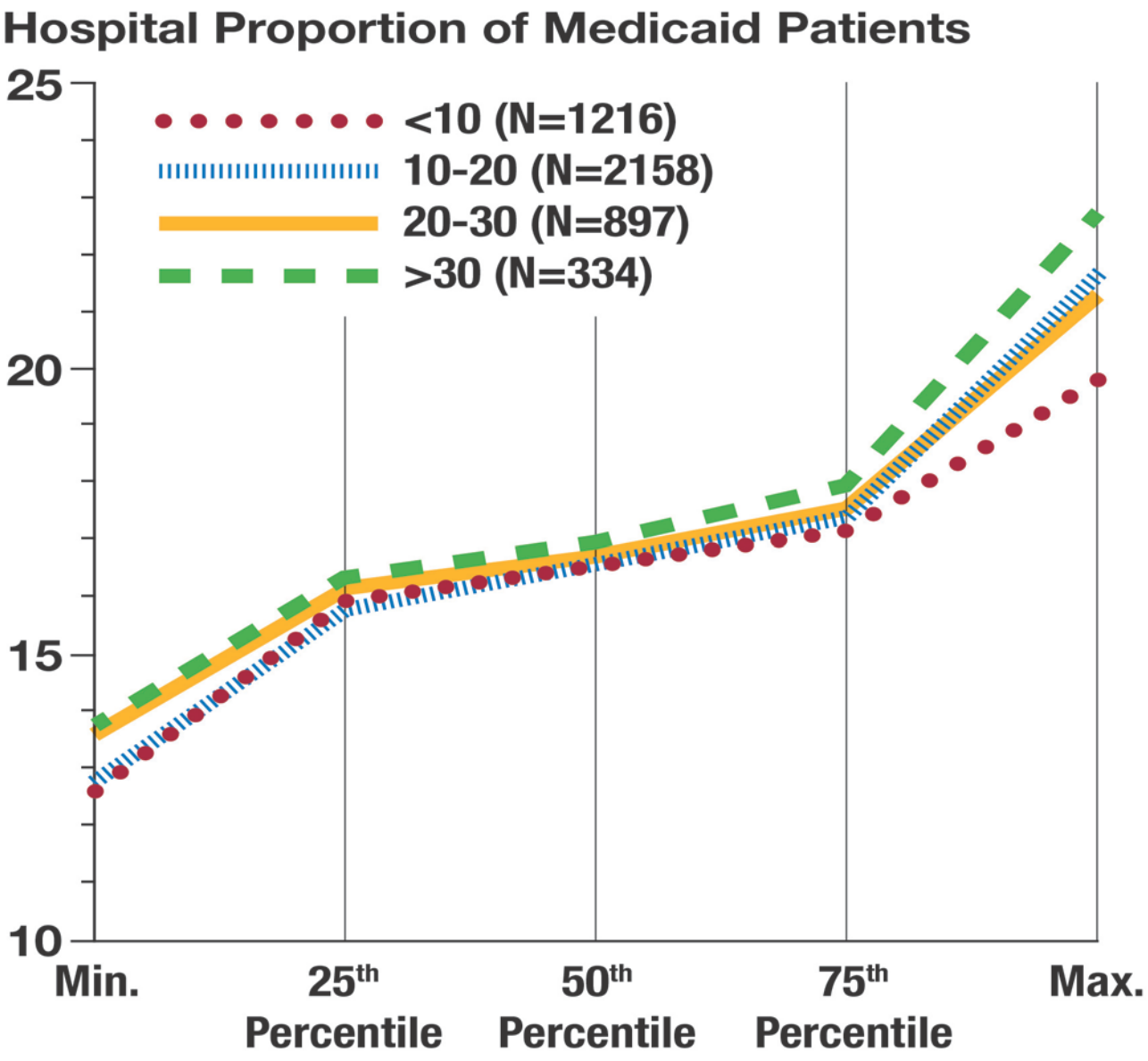
During the course of the in-person meeting, there was considerable discussion about the scientific acceptability of the measures, with a number of critical questions being raised regarding the data sources, the risk adjustment calculation, the integrity of the data reported for small volume hospitals, and other critical questions. In light of the short timeframe available for this review, we have not had the opportunity to identify and convene members with expertise in

this area who could provide further insight and extend the committee's insights into many of these questions. Thus, there are only two areas on which we are able to offer comments at this juncture:

1) the importance of including socioeconomic factors in the risk adjustment methodology; and
2) the usability of the measures.

Socioeconomic factors. On the first day of its in-person meeting, the committee had a lively discussion regarding the inclusion of socioeconomic factors in the CMS/Yale measure. There is, in fact, a growing list of publication describing both the relationship between low socioeconomic status and readmission rates. As the Steering Committee discussed, this adjustment for socioeconomic factors reflects the fact that poor communities have substantial health care and other infrastructure deficits, and while hospitals can and should do all within their power to care for and assist the patients in these impoverished communities, they cannot overcome all of the problems in a community. For example, some communities have greater challenges with regard to access to appropriate foods such as fresh fruits and vegetables, fish or chicken, and low sodium ingredients for meals. Other communities have few pharmacies, primary care providers, mental or substance abuse treatment facilities, and physical therapy or other rehabilitation facilities. They may lack good public transportation systems to enable patients to get back and forth to medical treatments and a variety of other needed services that are useful to patients recovering from hospitalizations.

The measure developer apparently asserted that there was no need to adjust for socioeconomic factors because some of the hospitals serving a very high proportion of Medicaid patients (a proxy for low socioeconomic status) had lower rates of readmissions than some of the hospitals serving a very low proportion of Medicaid patients and shared a tabular form of the data in the chart on the next page. While the developer's statement is about the ability of some hospitals to succeed despite the challenges of serving an impoverished community is true, it is not sufficient justification for failing to adjust for the impact of socioeconomic status. Some hospitals serving a very sick population of patients also are able to achieve a lower rate of readmissions than those hospitals serving a less acutely ill set of patients, but no one suggests that justifies the elimination of the adjustment for differences in the acuity of illness. Instead they realize that the high-performing hospital with a high level of patient acuity is likely worth studying and emulating because it has figured out how to succeed despite obstacles. The hard work of those hospitals against the odds is recognized and appropriately lauded, not ignored.



Similarly, those hospitals serving under-resourced communities have a much more challenging time preventing unnecessary readmissions. It is unclear why the measure developer thought because some have succeeded despite this challenge that they should ignore the fact that the lack of health care infrastructure and other resources had presented a significant challenge to the hospital achieving a low level of readmissions. Failing to adjust for socioeconomic factors negates a very clear pattern of performance demonstrated not only by the data presented by the developer itself as shown above but confirmed by numerous studies now available in the literature and summarized in the AHA's *Trendwatch*, which is appended.

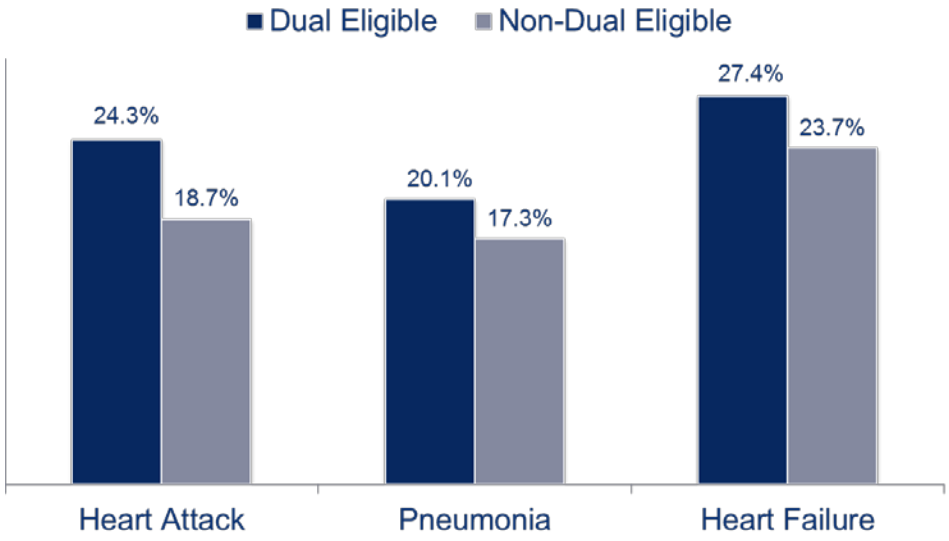
The developer also expressed some reluctance to adjust for socioeconomic factors under the mistaken belief that, by adjusting for them, the inference would be that it is accepable for poorer patients to have lower quality care. This argument is no more true than the argument that the age adjustment the developer has included in the measure is meant to suggest that it is permissible for older patients to receive poorer quality care than younger patients. The adjustment for age

and for socioeconomic factors is simply meant to acknowledge that there are portions of the readmission puzzle that are outside the control of the hospital. They clearly contribute to the likelihood that a patient will be readmitted, yet are not a factor for which the hospital should be held responsible. By not adjusting for socioeconomic factors, the achievements of the high-performing hospitals serving impoverished communities will be undervalued.

The AHA and Association of American Medical Colleges (AAMC) recently contracted with KNG to further analyze patient characteristics that influence the proportion of patients who are readmitted. The KNG study used the proportion of dual eligible patients as a proxy for low socioeconomic status of the community; this proxy may be an even better measures of socioeconomic status when looking at readmissions for the Medicare patient population, as the CMS/Yale measure will likely do for the foreseeable future, since it specifically looks at the proportion of Medicare patients who are in poverty and eligible for Medicaid as well. The KNG data also show a clear relationship between low income and readmissions.

Readmission Rates are Higher for Dual Eligibles (2009)

30-Day Readmission Rates for Dual and Non-dual Eligible Beneficiaries



Source: KNG Analysis of 2009 100% Medicare inpatient file and FY2011 Hospital IPPS final rule impact file.

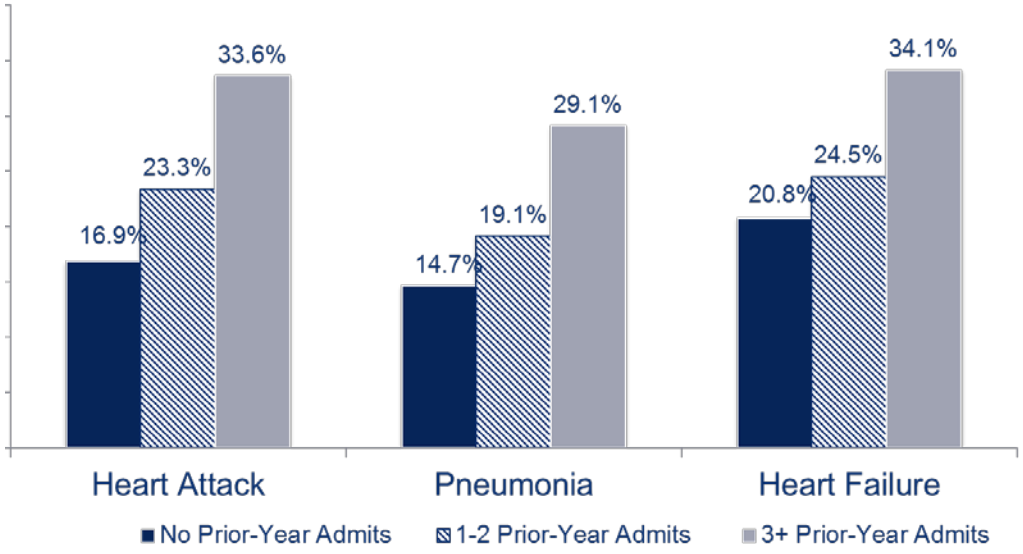
AAMC

Adequacy of the risk adjustment. The AHA/ AAMC-commissioned analysis also shows a relationship between illness acuity and readmissions that extends beyond the current risk adjustment and raises questions about the adequacy of the risk adjustment used in the CMS/Yale measure. KNG noted a significant relationship between the number of previous admissions a patient had during the course of a year and the number of readmissions. The number of previous admissions within a year speaks clearly to the overall health of the individual, with those experiencing three or more admissions likely to be frailer or have more underlying health issues that make it challenging to keep the patient out of the hospital. Teaching hospitals and safety-net

hospitals that specialize in caring for patients who are extremely complex and beyond the capacity of a typical community hospital are likely to be particularly disadvantaged by this insufficiency in the current risk adjustment methods. **We urge the Steering Committee to task CMS to look carefully at how to use prior hospitalizations or improved clinical information to further risk adjust for the health status of patients.**

Readmission Rates are Higher for Patients with Frequent Admits in Prior Year (2009)

30-Day Readmission Rates by Number of Prior-Year Hospital Admissions



Source: KNG Analysis of 2009 100% Medicare inpatient file and FY2011 Hospital IPPS final rule impact file.

AAMC

Usability

We note that members of the Steering Committee gave both the CMS-Yale measure and the NCQA measure unusually low scores for usability, and we join with the Steering Committee members in noting that there are many, many challenges to using these measures to either inform the public or drive improvement. The consumer and purchaser representatives often comment that the existing condition-specific readmission measures create a large category of hospitals that are deemed to be no different in performance from the average, and hospitals find it confusing when they cannot replicate the readmission rate calculated for them. Many factors contribute to this inability to replicate the readmission rate. One of them is the same reason that makes it hard for consumers and purchasers to distinguish among hospitals, and that is the methodology essentially substitutes the national average for the hospital's own rate except to the extent there is enough data to allow one to say that the hospital's specific rate is different from the national norm in a statistically reliable way. This means that, for most hospitals, their readmission rate is not wholly their own, but is rather a blend of their own performance and the national average. For smaller hospitals, the calculated rate is predominantly the national average. As hospitals get larger, the rate becomes more their own and less of the national average.

Additionally, as was noted in the Steering Committee meeting, these data are far from current. The data displayed on *Hospital Compare* for heart attack, heart failure and pneumonia readmissions at the moment are from July 2007 to June 2010, making the most recent data included in these calculations more than four and a half years to one and a half years old. As we understand it, the CMS/Yale readmission measure under review by this Steering Committee would likely only be displayed for a one-year period, not three like the current measures, which would mean the data at the time of display would be 18 to 30 months old. Data this old are challenging when one is trying to engage professionals in quality improvement efforts, tracking the changes one has put in place to see if they have had the desired effect or not, or trying to investigate any particular patient's case to see where there were opportunities for improvement.

We agree with the Steering Committee's votes indicating that the measures have, at best, limited usefulness in informing improvement or patient decision-making and would urge the committee to reconsider whether it is worth recommending a measure that it knows is not very useful.

In summary, we ask that the NQF reassess whether an expedited review was justified and, if it agrees that this project should not have been granted an expedited review, to take steps to minimize the impact that the expedited review had on the ability of the Steering Committee and interested stakeholders to participate in the project. Further, we ask that the Steering Committee reconsider the scientific acceptability of the measures and their usability and determine whether these measures are, in fact, worthy of NQF endorsement. If you have questions, please feel free to contact me at (202) 626-2337 or nfoster@aha.org.

Sincerely,

Nancy E. Foster
Vice President, Quality & Patient Safety

NATIONAL QUALITY FORUM

TO: Consensus Standards Approval Committee

FR: Taroon Amin, MA, MPH
Alexis Forman Morgan, MPH

RE: Patient Outcomes: All-Cause Readmissions Expedited Review Voting Results

DA: March 2, 2012; amended March 9, 2012

Note: For the purposes of this CSAC discussion on appeals, the voting results from the original memo were modified and replaced with the voting results from the amendment that was sent to CSAC on March 9, 2012

CSAC ACTION REQUIRED
Pursuant to the Consensus Development Process (CDP), the CSAC may consider approval of two candidate consensus standards as specified in the "voting draft" of *Patient Outcomes: All-Cause Readmissions Expedited Review 2011* at the March 7-8 in-person meeting. This memo includes a summary of the project, recommended measures, and themes identified from and responses to the public and member comments.

This project followed the National Quality Forum's (NQF's) version 1.9 of the CDP as an expedited review. Member voting on these recommended measures ended on March 1, 2012.

Readmissions Expedited Review Measures Recommended for Endorsement:
1789: Hospital-wide all-cause unplanned readmission measure (HWR) (CMS)
1768: Plan all-cause readmissions (NCQA)

Accompanying this memo are the following documents:

1. **Readmissions Expedited Review Draft Report.** The draft report has been updated to reflect the changes made following Steering Committee discussion of public and member comments. The complete draft report and supplemental materials are available on the project page.
2. **Comment table for Readmissions Expedited Review Draft Report**. Staff has identified themes within the comments received. This table lists 117 comments received and the NQF/Steering Committee responses.

BACKGROUND
This expedited review endorsement maintenance project evaluated measures for public reporting/accountability and quality improvement that specifically address cross-cutting (not condition-specific) all-cause readmissions to hospitals. Additionally, as part of this process, all-cause hospital readmission-related consensus standards that were endorsed by NQF before June 2009 were evaluated under the maintenance process. The endorsement maintenance process provides an opportunity to harmonize measure specifications and ensures that the endorsed measure represents the best in class.

NQF EXPEDITED CONSENSUS DEVELOPMENT PROCESS

As a part of NQF's Consensus Development Process (CDP), this project has involved the active participation of representatives from across the spectrum of healthcare stakeholders and is being guided by a multi-stakeholder Steering Committee.

The NQF Board of Directors approved formal policy on the expedited review process in the fall of 2010. Expedited reviews assist the Department of Health and Human Services (HHS) meet deadlines set by legislative mandates. Three criteria must be met prior to consideration by the Consensus Standards Approval Committee (CSAC) for an expedited review:

1. Measures under consideration have been sufficiently tested and/or in widespread use;
2. The scope of the project/measure set is relatively narrow; and
3. There is a time-sensitive legislative/regulatory mandate for measures.

For this project, HHS requested an expedited review of readmission measures to meet its statutory requirements under the Patient Protection and Affordable Care Act (PPACA) Section 10303. Section 10303(f) 'Development of Outcome Measures' mandates the Secretary shall develop 10 acute and chronic-disease, provider-level (specifically including hospitals and physicians) outcome measures by March 2012.

CMS requested an expedited review to ensure its decisions regarding the selection of measures to meet the 10 measure requirement would be informed by the NQF evaluation and endorsement decision. CMS also wishes to include the Hospital Wide Readmission Measure in the Hospital Inpatient Quality Reporting (IQR) Program using the 2012 IPPS/LTCH rulemaking cycle for FY 2013, so that public reporting of the measure can occur can occur as early as 2013. CMS specifically included this measure on the pre-rulemaking list for the Hospital IQR, which was made available to the public on December 1, 2011, in order to be able to do so.

DRAFT REPORT

The Readmissions Expedited Review Draft Report presents the results of the evaluation of 3 measures considered under the National Quality Forum's CDP. Two are recommended for endorsement as voluntary consensus standards suitable for accountability and performance improvement and one was not recommended. The measures were evaluated against the 2011 version of the measure evaluation criteria.

Measure Title	Recommendation
1789: Hospital-wide all-cause unplanned readmission measure (HWR)	Recommended for endorsement
1768: Plan all-cause readmissions	Recommended for endorsement
0329: Risk-adjusted 30-day all-cause readmission rate	Not recommended for endorsement; the measure failed the scientific acceptability of measure properties criteria due to risk

	adjustment concerns.

COMMENTS AND THEIR DISPOSITION

NQF received 117 comments from 43 organizations and individuals pertaining to the general draft report and to each of the 3 submitted measures.

A table of complete comments submitted during the comment period, with the responses to each comment and the actions taken by the Steering Committee and measure developers, is posted to the Readmissions Expedited Review project page under the Member Voting section.

Comment Themes and Committee Responses
Comments about specific measure specifications were forwarded to the developers, who were invited to respond.

At its review of all comments, the Steering Committee had the benefit of developer responses. Committee members focused their discussion on measures or topic areas with the most significant and recurring issues. Due to the number of comments received surrounding the issues of socioeconomic/race variables in the risk-adjustment model and usability, the Committee agreed to re-vote on whether Measures #1789 (CMS) and #1768 (NCQA) met the NQF criteria for endorsement. Following the revote, both Measures #1789 and #1768 were recommended by the Committee for NQF endorsement.

General Comments: Major Themes/Issues

1. Justification of an expedited review
2. Socioeconomic (SES)/ Race variables in the risk-adjustment model
3. Usability concerns
4. Support for harmonization
5. Inclusion/exclusion criteria

Theme 1- Justification of an expedited review
Description: Comments submitted expressed concern over the expedited nature of this project. Specifically, commenters noted that the complexity of measures submitted and the shortened timeline limited a thorough and complete evaluation by the Steering Committee. Others questioned the legislative requirement for the measures submitted in this project.

NQF Staff Response: Decisions regarding what measures qualify for expedited review are the responsibility of the Consensus Standards Approval Committee (CSAC). The comments were referred to the CSAC for review and discussion on their February 13, 2012 conference call. CSAC members generally agreed that there was no evidence that would lead them to overturn the decision to expedite the readmission project. The Board will consider this issue on February 24, 2012.

Theme 2- Socioeconomic (SES)/Race variables in the risk-adjustment model

Description: Commenters agreed that SES variables should not be included in process measures; however, they recommended the inclusion of SES/race variables in the CMS/Yale hospital readmission model. Commenters argued that literature supports the relationship between a patient's SES and their likelihood to be at risk for a readmission. However, some believed that measures should be stratified to avoid masking differences related to disparities in care.

Committee Response: Many members of the Committee agreed that the socio-economic status of patients can drive the likelihood of a readmission. This relationship is driven, in part by differences in the hospital quality; but also the availability of community support to patients. Thus, many Committee members agreed that readmissions are not simply a measure of hospital quality but also community health quality. The hospital is dependent on resources available in the community, such as effective transitional care and other community level factors, including distance to the hospital. However, the use of SES at the individual patient level in a risk adjustment model would hide differences in hospital performance. Further, SES is an extremely difficult construct to measure in a reliable and valid way using administrative data. Committee members strongly encouraged measure developers consider testing community-level SES variables (rather than patient-level SES variables) that can be used in risk-adjustment models that are reliable and valid.

After reviewing the comments submitted surrounding SES, the Committee decided to re-vote on whether the CMS/Yale measure (#1789) met the NQF criteria for endorsement. Following the re-vote, Measure #1789 was recommended for NQF endorsement with the following recommendation:

- In order to support fair and appropriate comparisons, hospital performance on this measure should be reported within like comparison groups (e.g., disproportionate share hospitals).

Theme 3- Usability concerns

Description: Commenters expressed concern over the usability of the measures submitted to this project. Specifically, they noted the difficulty with replicating the measure for quality improvement purposes, limited information on the admitting hospital if it is not the index hospital, and the timeliness of measure results to support rapid-cycle improvements.

Committee Response: The Committee discussed concerns related to the usability noting limitations in use for quality improvement. Specifically for the CMS/Yale measure, Committee members agreed that the measure may not be able to support quality improvement within hospitals since it would be difficult to recreate the measure results without data from the readmitting hospital if it is not the same as the index hospital. The Committee also noted the limitation in rapid-cycle improvement due to the turnaround time for measure. These issues were broadly reflected in the low usability ratings for the CMS/Yale measure. While these are not limitations in the measure design, but rather measure implementation; the Committee strongly encourages CMS and other potential users to continue enhancing data platforms, timeliness of reporting and other aspects of measure implementation.

After reviewing the comments submitted surrounding the usability concerns, the Committee decided to re-vote on whether the CMS/Yale measure (#1789) met the NQF criteria for

endorsement. Following the re-vote, Measure #1789 was recommended for NQF endorsement with the following recommendation:

- In order to support performance improvement and accountability, feedback to hospitals should be timely and provide information on all readmissions.

Theme 4- Support for harmonization
Description: Commenters strongly supported the Committee's recommendations for harmonization for all-cause hospital readmissions at the facility and health plan levels. Measures at various levels should be aligned in terms of their definition of a readmission, inclusion/exclusion criteria, and approach to risk adjustment. When two measures with the same measure focus and population are designed differently, they often send conflicting signals on how to improve care for patients.

Committee Response: The Committee agreed that the two recommended measures are related and not competing because the levels of analysis are different (NCQA-plan level and CMS/Yale-hospital level). As such, Members of the Committee agreed that providers and health plans face significant challenges and frustration when they receive discordant signals from reports based upon differing measurement methodologies. The Committee expressed a strong desire that the NCQA and CMS/Yale measures should be harmonized for both hospital and plan level measurement within a reasonable timeframe.

Theme 5- Inclusion/exclusion criteria
Description: Commenters provided various remarks related to the inclusion/exclusion criteria of the measures. Many agreed that the measures should include all patients, not limited to those with commercial health insurance or Medicare. Others argued that the 30-day time window is not appropriate to measure hospital performance, but rather a 15-day time window is more appropriate. One commenter believed that CMS should allow hospitals to comment on which of their facilities to include and exclude since hospital-level data may include oncology services. Another commenter argued that the exclusion criteria should allow for exclusion of patients who do not have post-discharge follow-up available.

Committee Response: The Committee agreed that the measure should include all patients, not limited by insurance coverage. However, the Committee recognized the data limitations in measuring readmission for patients who are uninsured. For the CMS/Yale measure, PPS-exempt cancer hospitals and patients undergoing medical treatment of cancer are excluded. The Committee agreed that a 30-day time window, rather than a 15-day time window is appropriate for this application. Finally, the Committee also encouraged the development of a proxy for the lack of community-level supports available to hospitals. Both developers agreed that they would consider community-level risk-adjustment variables in future updates.

VOTING RESULTS
Note: For the purposes of this CSAC discussion on appeals, the voting results from the original memo were modified and replaced with the voting results from the amendment that was sent to CSAC on March 9, 2012

All recommended measures did not meet approval. Measure 1789 (CMS/Yale) received an approval of 49%, with 57% (4 out of 7 councils) approving the measure.

Measure 1768 (NCQA) received an approval of 56%, with 57% (4 out of 7 councils) approving the measure. Representatives of 64 member organizations voted; no votes were received from the Supplier/Industry Council. No members who voted provided comments. Results for each measure are provided below. (Links are provided to the full measure summary evaluation tables.)

Measure #1789 Hospital-wide all-cause unplanned readmission measure (HWR) (CMS)

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	6	0	0	6	100%
Health Plan	4	2	0	6	67%
Health Professional	4	7	0	11	36%
Provider Organizations	4	17	2	23	19%
Public/Community Health Agency	1	0	0	1	100%
Purchaser	7	0	0	7	100%
QMRI	4	5	1	10	44%
Supplier/Industry	0	0	0	0	
All Councils	**30**	**31**	**3**	**64**	**49%**
Percentage of councils approving (>50%)					57%
Average council percentage approval					67%

*equation: Yes/ (Total - Abstain)

Measure #1768 Plan all-cause readmissions (NCQA)

Measure Council	Yes	No	Abstain	Total Votes	% Approval*
Consumer	6	0	0	6	100%
Health Plan	6	0	0	6	100%
Health Professional	4	6	1	11	40%
Provider Organizations	4	14	5	23	22%
Public/Community Health Agency	1	0	0	1	100%
Purchaser	7	0	0	7	100%
QMRI	4	5	1	10	44%
Supplier/Industry	0	0	0	0	
All Councils	**32**	**25**	**7**	**64**	**56%**
Percentage of councils approving (>50%)					57%
Average council percentage approval					72%

*equation: Yes/ (Total - Abstain)

Measure Evaluation Summary Tables

LEGEND: Y = Yes; N = No; H = High; M = Moderate; L = Low; I = Insufficient

1789 Hospital-wide call-cause unplanned readmissions measure (HWR)
Measure Submission and Evaluation Form Description: This measure estimates the hospital-level, risk-standardized rate of unplanned, all-cause readmission after admission for any eligible condition within 30 days of hospital discharge (RSRR) for patients aged 18 and older. The measure reports a single summary RSRR, derived from the volume-weighted results of five different models, one for each of the following specialty cohorts (groups of discharge condition categories or procedure categories): surgery/gynecology, general medicine, cardiorespiratory, cardiovascular, and neurology, each of which will be described in greater detail below. The measure also indicates the hospital standardized risk ratios (SRR) for each of these five specialty cohorts. We developed the measure for patients 65 years and older using Medicare fee-for-service (FFS) claims and subsequently tested and specified the measure for patients aged 18 years and older using all-payer data. We used the California Patient Discharge Data (CPDD), a large database of patient hospital admissions, for our all-payer data. Numerator Statement: (Note: This outcome measure does not have a traditional numerator and denominator like a core process measure (e.g., percentage of adult patients with diabetes aged 18-75 years receiving one or more hemoglobin A1c tests per year); thus, we use this field to define the measure outcome.) The outcome for this measure is unplanned all-cause 30-day readmission. We defined a readmission as an inpatient admission to any acute care facility which occurs within 30 days of the discharge date of an eligible index admission. All readmissions are counted as outcomes except those that are considered planned. Denominator Statement: This claims-based measure can be used in either of two patient cohorts: (1) admissions to acute care facilities for patients aged 65 years or older or (2) admissions to acute care facilities for patients aged 18 years or older. We have tested the measure in both age groups. Exclusions: We exclude from the measure all admissions for which full data are not available or for which 30-day readmission by itself cannot reasonably be considered a signal of quality of care. Exclusions: 1. Admissions for patients without 30 days of post-discharge data Rationale: This is necessary in order to identify the outcome (readmission) in the dataset. 2. Admissions for patients lacking a complete enrollment history for the 12 months prior to admission Rationale: This is necessary to capture historical data for risk adjustment. 3. Admissions for patients discharged against medical advice (AMA) Rationale: Hospital had limited opportunity to implement high quality care. 4. Admissions for patients to a PPS-exempt cancer hospital Rationale: These hospitals care for a unique population of patients that is challenging to compare to other hospitals. 5. Admissions for patients with medical treatment of cancer (See Table 3 in Section 2a1.9) Rationale: These admissions have a very different mortality and readmission profile than the rest of the Medicare population, and outcomes for these admissions do not correlate well with outcomes for other admissions. (Patients with cancer who are admitted for other diagnoses or for surgical treatment of their cancer remain in the measure). 6. Admissions for primary psychiatric disease (see Table 4 in Section 2a1.9) Rationale: Patients admitted for psychiatric treatment are typically cared for in separate psychiatric or rehabilitation centers which are not comparable to acute care hospitals. 7. Admissions for “rehabilitation care; fitting of prostheses and adjustment devices” Rationale: These admissions are not for acute care or to acute care hospitals. Additionally, in the all-payer testing, we excluded obstetric admissions because the measure was developed among patients aged 65 years or older (approximately 500,000). Adjustment/Stratification: Hierarchical logistic regression models are used to model the log-odds of readmission within 30 days of discharge, as a function of patient-level demographic and clinical characteristics and a random hospital-level intercept. This model specification accounts for within-hospital correlation of the observed outcomes and models the assumption that underlying differences in quality among the health care facilities being evaluated lead to systematic differences in outcomes. In brief, the approach simultaneously models two levels (patient and hospital) to account for the variance in patient outcomes within and between hospitals [1]. At the patient level, each model adjusts the log-odds of readmission within 30-days of discharge for age and selected clinical covariates. The second level models the hospital-specific intercepts as following a normal distribution. The hospital intercept represents the underlying hospital specific risk of readmission, after accounting for patient risk. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals. We use a fixed, common set of variables in all our models for simplicity and ease of data collection and analysis. However, we estimate a

1789 Hospital-wide call-cause unplanned readmissions measure (HWR)
hierarchical logistic regression model for each specialty cohort separately, and the coefficients associated with each variable may vary across specialty cohorts. To group ICD-9-CM codes into comorbid risk variables, we use CMS Condition Category (CMS-CCs) groups, the grouper used in previous CMS risk-standardized outcomes measures [2]. See Table 5 for the final list of comorbid risk variables. The models also include a condition-specific indicator for all condition categories with sufficient volume (defined as those with more than 1,000 admissions nationally each year for Medicare FFS data) as well as a single indicator for conditions with insufficient volume in each model. See Table 5, of the Measure Submission and Evaluation Worksheetfor the final list of comorbid risk variables. Stratification: Not Applicable Level of Analysis: Facility Type of Measure: Outcome Data Source: Administrative claims Measure Steward: Centers for Medicare & Medicaid Services (CMS)
1. Importance to Measure and Report: Y-18; N-1
Subcriteria rating prior to in-person meeting: (1a. High Impact: 1b. Performance Gap, 1c. Evidence) 1a. Impact: H-17; M-2; L-0; I-0 1b. Performance Gap: H-15; M-4; L-0; I-0 1c. Evidence: Not applicable; outcome measure Rationale: While evaluating the measures' importance to measure and report, the Committee agreed that the subcriteria was met and provided the following rationale: • All readmission/care transitions goals have been identified in the National Quality Strategy under Patient Safety and Care Coordination and are further elaborated upon in the Partnership for Patients. • As a stand-alone issue, readmissions is important to measure due to (1) high economic burden and (2) a complex relationship between the different elements of utilization, health status, transitions of care, and care coordination. • An all-cause readmission measure would provide an opportunity to improve hospital accountability and performance. • While discussing the evidence for the measure focus, there were concerns as to whether this measure was a health outcome or if hospital readmissions are an appropriate proxy for health outcomes. • The Committee, particularly consumer representatives, agreed that readmissions are health outcomes because it is a proxy for deterioration in health status.
2. Scientific Acceptability of Measure Properties: Y-13; N-6
Subcriteria rating prior to in-person meeting: (2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity) 2a. Reliability: H-10; M-8; L-1; I-0 2b. Validity: H-7; M-12; L-1; I-1 Rationale: While evaluating the measures' scientific acceptability, the Committee agreed that the subcriteria was met and identified 3 major issues: 1) Use of Hierarchical logistic regression model (HLM) 2) Hospital volume 3) Adjusting for socioeconomic status Use of Hierarchical logistic regression model (HLM) • Several Committee members expressed a wide range of concerns about the use of HLM due to its treatment of smaller volume hospitals, heavily relying on the assumption that the model does not make as much of an inference from patients within a small volume hospital, effectively pulling a smaller volume hospital towards more average estimates. • The use of HLM attempts to level the playing field by adjusting for patient comorbidities and differences in services a hospital provides. • The developer also stated that due to the fact that this is an all-cause measure, they did not have a large number of hospitals with small volumes, as may be seen in a condition-specific measure. With an all-cause measure, every hospital will have at least 'several hundred' observations. • Small volume hospital readmission rates are calculated with less precision than larger hospitals. Hospital volume • Several Committee members felt that the decision to exclude hospital volume ignores the literature that explains that smaller volume hospitals generally have higher readmission rates. • The Committee also expressed concern that the measure results may not be a true representation of a hospital readmission. This

1789 Hospital-wide call-cause unplanned readmissions measure (HWR)

could pose an issue, when public reporting websites (i.e. Hospital Compare) use the results to educate consumers.

- Using this type of risk-adjustment in this setting may introduce bias for a small volume hospital performing well. Hospitals with low volume may appear as average, effectively removing an incentive to improve quality.
- The developers argued that they could have included volume in the model to improve the predicative power; however, it does not seem appropriate to allow quality expectations to vary based on hospital volume.
- At the request of the Committee, the CMS/Yale team presented additional information to address the question of hospital volume and quality performance. For large and small volume hospitals they demonstrated that there is no pull to the mean, a major concern expressed by the Committee.

Adjusting for socioeconomic status

- The measure was not adjusted for socio-economic status (SES).
- The Committee felt strongly those patient variables such as health literacy, access to care, dual eligibility, homelessness, domestic violence, and access to childcare drive patient's access to follow-up care.
- Committee members also expressed concern that to exclude SES might lead to an increase in cherry picking among hospitals.
- The developer pointed out that the measure was not adjusted for SES for several reasons:
    - In examining the data across hospitals with a different proportion of Medicaid patients, there was a wide range of performance on the measure due to quality of care and resource availability.
    - There is no reliable and acceptable proxy for SES using administrative data.
    - The developers did not want to adjust away differences in SES, but rather highlight the disparities seen across hospitals.
- Supplemental information was provided demonstrating that among hospitals with the highest proportion of Medicaid patients, 25 percent of them performed better than the average hospital with very few Medicaid patients.
- Calibration curves showed the CMS/Yale model was able to predict risk for aggregate groups of patients well (i.e. how well the model is able to predict a low risk patient's low risk).

Additional items

- *The exclusion of patients with a primary diagnosis of a psychiatric condition*. The developer excluded patients readmitted for primary psychiatric conditions for 3 reasons: (1) the number of patients falling into this category was a 'small number' not evenly distributed across hospitals, (2) smaller volume hospitals do not code these readmissions in a consistent manner, and (3) this patient population is usually treated in rehabilitation facilities or specialized psychiatric hospitals. One Committee member argued that many psychiatric patients are treated in single units, within acute care hospitals and should be included in this measure, because exclusion has implications for the readmission rates of patients with comorbid psychiatric disorders. The developer clarified that the exclusion is for Psychiatric patients readmitted with a primary psychiatric diagnosis only, and that patients with comorbid secondary psychiatric diagnosis that are admitted for other medical conditions are still included.
- *The use of the 5 specialty cohorts.* The developers noted that in order to account for variation and service mix across hospitals, the best risk adjustment and model performance came when using the 5 cohorts. Limiting the measure to 5 cohorts also gave the measure better utility for the hospital because the measure is able to provide detailed data on each service line.
- *The surgery/gynecology cluster does not include obstetrics*. Given the limited time during the call for measures, and because the measure was initially built upon a 65+ population the developers did not include obstetrics; however they will work to update the measure.
- The model only accounts for the receiving hospitals' performance, not the transferring hospital performance. This was a particular concern for transfers from a community-based facility to a larger hospital known more for specialty care.
- An additional recommendation to add reporting stratification by SES guidance was voted down (Y-8; N-11).

3. Usability: H-1; M-8; L-11; I-0

Subcriteria rating prior to in-person meeting:

(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*

3a. Public Reporting: H-6; M-5; L-5; I-3

3b. QI: H-5; M-6; L-6; I-2

Rationale: While evaluating the measures' usability, the Committee found the usability to be low and identified 3 major issues:

1) Measurement issues regarding the model approach
2) Consumer use of the measure
3) Time lag

1789 Hospital-wide call-cause unplanned readmissions measure (HWR)

Measurement issues regarding the shrinkage model

- The Committee felt that smaller volume hospitals would not receive useful information to improve quality.
- Committee members expressed concerns that smaller volume hospitals would look better than larger hospitals because their means would be pulled to an overall national average. As such, the data generated may not be meaningful for public reporting.

Consumer Use of the Measure

- Addressing the issue of consumer use, the CMS/Yale group pointed out that the rate of readmission at which the public can call something 'good' vs. 'bad' is a policy decision by CMS. CMS currently uses a 95 percent confidence interval and large confidence intervals are a genuine representation of hospital performance. Committee members felt that a wide confidence interval makes the measure less useful for consumers.
- The Committee felt that to make this measure understandable and meaningful would require more education for consumers on readmissions, specifically that reduction of readmission rates is not rationing of care but rather improved quality
- The developer reiterated that their measure was built for two purposes: (1) public reporting in order to adequately compare different types of hospitals; and (2) for quality improvement by allowing hospitals to benchmark themselves against other hospitals to identify areas in which quality improvement is necessary, and catalyze activity.

Time lag

- The Committee was concerned that for the purposes of quality improvement, the lag in data collection and reporting (approximately 12 to 18 months) would be inadequate.
- The time lag would limit the ability to apply rapid cycle improvement events.

4. Feasibility: H-14; M-5 ; L-0 ; I-0

Subcriteria rating prior to in-person meeting:

(4a. Data generated during care; 4b. Electronic sources; 4c. Susceptibility to inaccuracies/ unintended consequences identified; 4d. Data collection can be implemented)

4a. Byproduct of Care Processes: H-14; M-5; L-0; I-0

4b. Electronic data sources: H-13; M-5; L-1; I-3

4c. Susceptability to inaccuracies, consequences: H-7; M-9; L-1; I-2

4d. Data collection strategy: H-11; M-6; L-0; I-2

Rationale:

- Members discussed ability of hospitals to receive information about readmissions to other hospitals and its effect on the measure implementation.

Steering Committee Vote: Meets Criteria for Endorsement: Y-14 ; N-5

Following harmonization discussion, the measure was recommended for endorsement

Rationale:

- This measure addresses a high impact area.
- This measure can be used at the hospital level.

Public and Member Comments

- Inclusion of SES/race variables in the model
- Stratification to avoid differences related to disparities in care
- Difficulty replicating the measure for quality improvement purposes

Socioeconomic (SES)/Race variables in the risk adjustment model

Committee Response: Many members of the Committee agreed that the socio-economic status of patients can drive the likelihood of a readmission. This relationship is driven, in part by differences in the hospital quality; but also the availability of community support to patients. Thus, many Committee members agreed that readmissions are not simply a measure of hospital quality but also community health quality. The hospital is dependent on resources available in the community, such as effective transitional care and other community level factors, including distance to the hospital. However, the use of SES at the individual patient level in a risk adjustment model would hide differences in performance. Further, SES is an extremely difficult construct to measure in a reliable and valid way using administrative data. After reviewing the comments submitted surrounding SES, the Committee decided to re-vote on whether the CMS/Yale measure (#1789) met the NQF criteria for endorsement. Following the re-vote, Measure #1789 was recommended for NQF endorsement with the following recommendation: in order to support fair and appropriate comparisons, hospital performance on this

1789 Hospital-wide call-cause unplanned readmissions measure (HWR)

measure should be reported within like comparison groups (e.g., disproportionate share hospitals).

CMS/Yale Developer Response: We recognize the concerns of this commentator and others that socioeconomic status confers increased risk for readmissions beyond the control of the hospital. We have considered this problem in depth and have come to the following conclusions:
1) To the extent that SES increases readmission risk by increasing severity of illness, we account for this increased risk in our readmission models. Indeed, our analyses show that the expected readmission risk per patient estimated by the model based on patient comorbidities and an average hospital intercept term is higher on average for patients treated in hospitals that treat a higher proportion of Medicaid patients than for those treated in hospitals that treat a lower proportion of Medicaid patients. Thus, our measure already substantially incorporates increased risk of low SES patients by adjusting for patient comorbidities.
2) Adding additional risk adjustment to the readmission model for low SES status both hides disparities and would potentially eliminate incentives for hospitals to invest time and resources that may be necessary to support all patients, including those of low SES, in the post-discharge period. Including some form of SES as a risk variable in the readmission model implies that it is both expected and acceptable for low SES patients to have higher readmission rates for any given level of illness. Since this measure is intended to reduce the readmission risk for all patients and is fundamentally a patient-centered outcome measure, we have elected to set one standard of care for all patients. All patients should expect to receive the same standard of care regardless of their demographic background.
3) Adjusting for SES also assumes that all of the increased risk of low SES patients is outside the control of the hospital. We do not agree. The increased risk of readmission associated with low SES comprises multiple dimensions and factors, some of which (e.g., reduced literacy) are within the control of the hospital to mitigate. The fact that one quarter of hospitals that treat the highest proportion of Medicaid patients (>30% of all hospital admissions Medicaid) have lower RSRRs than half of the hospitals with fewer than 10% Medicaid admissions is evidence that hospitals caring for low SES patients are not necessarily disadvantaged by our measure. Better quality of care is achievable regardless of the proportion of low SES patients in the hospital.
4) We recognize that many of the interventions that may improve outcomes for low SES patients are located in communities rather than inpatient settings, and we recognize that many commentators believe that these interventions are outside the scope of acute care facilities. However, we believe that this measure can help to incentivize hospitals to work together with community-based organizations to improve care for patients (both low and high SES) post-discharge. We believe that coordination and integration of care is a fundamental component of high quality care that is part of the acute care hospital mission.
5) Finally, CMS notes that there are CMS programs that provide technical and financial support that may assist hospitals in improving performance on readmission measures. In addition, CMS has indicated that it will monitor whether a pending payment program that uses other readmission measures, the Hospital Readmissions Reduction Program, will have a disparate impact on hospitals that care for large numbers of low SES patients.

Usability concerns
Committee Response: The Committee discussed concerns related to the usability noting limitations in use for quality improvement. Specifically for the CMS/Yale measure, Committee members agreed that the measure may not be able to support quality improvement within hospitals since it would be difficult to recreate the measure results without data from the readmitting hospital if it is not the same as the index hospital. The Committee also noted the limitation in rapid-cycle improvement due to the turnaround time for measure. These issues were broadly reflected in the low usability ratings for the CMS/Yale measure. While these are not limitations in the measure design, but rather measure implementation; the Committee strongly encourages CMS and other potential users to continue enhancing data platforms, timeliness of reporting and other aspects of measure implementation. After reviewing the comments submitted surrounding the usability concerns, the Committee decided to re-vote on whether the CMS/Yale measure (#1789) met the NQF criteria for endorsement. Following the re-vote, Measure #1789 was recommended for NQF endorsement with the following recommendation in addition to the recommendation above concerning SES: in order to support performance improvement and accountability, feedback to hospitals should be timely and provide information on all readmissions.

CMS/Yale Developer Response: This measure is designed to enable risk-standardized comparisons of hospital performance against national norms in order to help patients and hospitals identify areas of weakness and benchmark to peers. For this purpose, it is essential to include adequate volume for comparison (at least one year of data) and to compare to contemporary performance of other institutions. By contrast, this measure is not intended for rapid cycle improvement within a hospital, for which risk-standardized rates are neither appropriate nor necessary.

1768 Plan all-cause readmissions
Measure Submission and Evaluation Form Description: For members 18 years of age and older, the number of acute inpatient stays during the measurement year that were followed by an acute readmission for any diagnosis within 30 days and the predicted probability of an acute readmission. Data are reported in the following categories: 1. Count of Index Hospital Stays (IHS) (denominator) 2. Count of 30-Day Readmissions (numerator) 3. Average Adjusted Probability of Readmission 4. Observed Readmission (Numerator/Denominator) 5. Total Variance Note: For commercial, only members 18–64 years of age are collected and reported; for Medicare, only members 18 and older are collected, and only members 65 and older are reported. Numerator Statement: At least one acute readmission for any diagnosis within 30 days of the Index Discharge Date. Denominator Statement: For commercial health plans, ages 18-64 as of the Index Discharge Date. For Medicare and Special Needs Plans, ages 18 and older as of the Index Discharge Date. Exclusions: Exclude hospital stays where the Index Admission Date is the same as the Index Discharge Date and any inpatient stay with a discharge date in the 30 days prior to the Index Admission Date. Adjustment/Stratification: Indirect standardization, using logistic regression Uses the CC and HCC models to identify comorbidities and attaches weights to each statistically significant comorbidity by product line and age grouping. We estimated a stepwise logistic regression. The binary dependent variable was coded 1 for index hospital stays that had a subsequent readmission within 30 days, and 0 otherwise. The independent variables in the models were: - age-gender cohort: Commercial: male 18-44, female 18-44, male 45-54, female 45-54, male 55-64 (reference group), female 55-64. In year 1, the model for Medicare used: Medicare 18 and older: male 18-44, female 18-44, male 45-54, female 45-54, male 55-64, female 55-64. male 65-74 (reference group), female 65-74, male 75-84, female 75-84, male 85+, female 85+. In year 2, the model for Medicare will use: male 65-74 (reference group), female 65-74, male 75-84, female 75-84, male 85+, female 85+. - Major surgery: 1=index hospital stay was for major surgery (see code list in algorithm); 0, otherwise. - Discharge Clinical Condition (CC) from the HCC classification system: 1=index hospital stay was for the CC; 0, otherwise. Note: each index hospital stay is coded into exactly one CC and is based only on the primary diagnosis. - Comorbid Hierarchical Clinical Condition (HCC): 1=index hospital stay had the associated comorbidity (HCC) indicated through any diagnosis on a face to face claim/encounter for the 12 months prior to the index hospital stay discharge date; 0, otherwise. Stratification by risk category/subgroup. The measure includes a table that stratifies the five reporting data elements by age and gender. The five elements are: 1. Count of Index Stays 2. Count of 30-Day Readmissions 3. Average Adjusted Probability 4. Observed Readmission (Numerator/Denominator) 5. Total Variance The age stratifications are: Commercial: 18-44, 45-54, 55-64, Total Medicare: 65-74, 75-84, 85+., Total The measure is also stratified by gender. Values are reported for each stratification. Level of Analysis: Health Plan Type of Measure: Outcome Data Source: Administrative claims Measure Steward: National Committee of Quality Assurance

1768 Plan all-cause readmissions

STEERING COMMITTEE MEETING 12/5-6/2011

1. Importance to Measure and Report: Y-18; N-0

Subcriteria rating prior to in-person meeting:
(1a. High Impact: 1b. Performance Gap, 1c. Evidence)
1a. Impact: H-13; M-5; L-1; I-0 1b. Performance Gap: H-5; M-8; L-2; I-2
1c. Evidence: Not applicable; outcome measure

Rationale: While evaluating the measures' importance to measure and report, the Committee agreed that the subcriteria was met and provided the following rationale:

- This particular measure creates a standard metric for quality monitoring and accountability of the health plan, leaving it to the health plan to work with its network of hospitals, providers, medical homes, and other entities to implement quality improvement strategies to improve readmissions.
- This health plan based measure can be a complement to a hospital-based measure.
- Readmissions are important to measure due to (1) high economic burden and (2) a complex relationship between the different elements of utilization, health status, transitions of care, and care coordination.
- This all-cause readmission measure would provide an opportunity to improve hospital and health plan accountability and performance.

2. Scientific Acceptability of Measure Properties: Y-12; N-7

Subcriteria rating prior to in-person meeting:
(2a. Reliability – precise specifications, testing; 2b. Validity – testing, threats to validity)
2a. Reliability: H-4; M-9; L3-; I-3 2b. Validity: H-3; M-10; L-5; I-1

Rationale: While evaluating the measures' scientific acceptability, the Committee agreed that the subcriteria was met, and identified 3 major issues:
1) Use of Health Plan level data
2) Risk Adjustment
3) Adjusting for Socioeconomic Status

Use of Health Plan level data

- In this measure, the data collected are at the health plan level. This measure focus shifts from the hospital as the unit of accountability, to a more population based approach.
- There are no current plans to develop this measure for use at a hospital level.
- The data are collected at the health plan level. The plans take NCQA specifications and implement them either themselves or through their software vendors that perform various calculations on the number of hospitalizations, transfers, etc.
- The Committee expressed concern that underperforming hospitals would not be seen in the plan level data. Plans seeking to reduce readmissions can work with hospitals and provide selective contracting or other value based payment arrangements.

Risk Adjustment

- This measure uses indirect standardization through a logistic model.
- The data are not nested since patients are extremely cross classified. Data are clustered across multiple hospitals and across multiple health plans.
- The measure accounts for a service mix of patients in a given setting by adjusting for patient attributes such as demographic information, age, comorbid conditions, and index condition.
- This measure uses CC's from the CMS HCC system.
- The Committee expressed concern regarding selection bias between health plans, and hospitals being unfairly penalized due to variability in the patients that they treat.
- This measure has modified the risk adjustment model to have separate risk adjusters and weights for the Medicare under 65 and the Medicare 65 and older population.
- The developer presented calibration curves demonstrating that the expected versus actual risk deciles plots had adequate discriminate ability. Actual differences between expected and actual risk were less than 1 percent in each decile.

Adjusting for Socioeconomic Status

- This measure does not adjust for socioeconomic status (SES). The developers feel there is not a suitable proxy for SES within a

1768 Plan all-cause readmissions

community, as the health plans do not report that information. NCQA feels that health plan comparisons are done on a local scale, and they have no reason to believe there is an SES difference between health plans. The Committee challenged this assumption.

- NCQA argued that the measure takes SES into account to a certain degree through measurement of each health plan product line; Commercial and Medicare.

Additional Items

- Behavioral health and planned admissions are included in this measure.

3. Usability: H-5; M-4; L-9; I-1

Subcriteria rating prior to in-person meeting:
(*Meaningful, understandable, and useful to the intended audiences for 3a. Public Reporting/Accountability and 3b. Quality Improvement)*
3a. Public Reporting: H-7; M-5; L-6; I-1
3b. QI: H-6; M-6; L-5; I-2

Rationale: While evaluating the measures' usability, the Committee found the usability to be low and identified the following issues:
The health plan is in a greater position to deal with the coordination issues between primary care and the care team (i.e. nurse care manager, etc.) and to follow up with the patient (i.e. about making follow up appointment, adhering to medication regiments, or other access issues).

- Coordination of care can be done by the payer within a given market.
- Useful to the health plan in setting up quality improvement methods that would affect individual institutions that are contracted with that plan.
- Consumer representatives on the Committee felt that this measure was extremely useful for purchasers and consumers, especially upon implementation of health insurance exchanges.
- There is added utility to having a health plan perspective in combination with and in complement to a hospital-based measure.

4. Feasibility: H-14; M-5; L-0; I-0

Subcriteria rating prior to in-person meeting:
(4a. Clinical data generated during care delivery; 4b. Electronic sources; 4c.Susceptibility to inaccuracies/ unintended consequences identified 4d. Data collection strategy can be implemented)
4a. Byproduct of Care Processes: H-11; M-7; L-1; I-0
4b. Electronic data sources: H-10; M-6; L-2; I-1
4c. Susceptibility to inaccuracies, consequences: H-4; M-9; L-5; I-1
4d. Data collection strategy: H-7; M-9; L-3; I-0

Rationale:

- Initial testing and development of this measure began in 2009, using commercial and Medicare Advantage plan based data from 2008 and 2009. NCQA has also collected first year measurement from Medicare Advantage commercial health plans. Those data are already in use at CMS.
- Data and evidence have been collected for one year
- The measure is already in implementation among several health plans.
- CMS is already in the process of using the measure within the STAR system for use in both health plan choice and incentive processes.

Steering Committee Vote: Meets Criteria for Endorsement : Y-13; N-6
Following harmonization discussion, the measure was recommended for endorsement.
Rationale:

- This measure demonstrated a high impact area.
- This measure can be used at the plan level.
- This measure is useful for consumers.

Public and Member Comment

- Inclusion of SES/race variables in the model
- Inclusion of a readmission as an index admission

Socioeconomic (SES)/Race variables in the risk adjustment model
Committee Response: Many members of the Committee agreed that the socio-economic status of patients can drive the likelihood of a readmission. This relationship is driven, in part by differences in the hospital quality; but also the availability of community support to

1768 Plan all-cause readmissions
patients. However, since this measure is at the health plan level, inclusion of SES variable was not as prominent of a concern. *NCQA Developer Response:* When considering the inclusion of SES in the model, NCQA's expert panels cited the following limitations/barriers: a) Health plans do not currently have a reliable way to identify and report information on SES; b) Attributing SES to each health plan is complicated and prone to measurement error; additionally, SES may vary widely across a health plan, undermining the impact of a generic risk adjustment method; and c) Adding SES may risk adjust away important differences in populations and can imply that different levels of performance are acceptable for populations with differing SES. Readmission as an index admission *Committee Response:* The Committee agrees that readmissions should be considered index events. The Committee also agrees that index events for unplanned non-maternity readmissions should not be included because identifying planned maternity readmissions would be difficult using administrative data. *NCQA Developer Response*: Over the next year, NCQA will test counting readmissions as index events on the overall model integrity.

MEMORANDUM

To: Helen Burstin, National Quality Forum

From: Leora Horwitz, MD, YNHHSC/CORE

Through: Lein Han, CMS

Subject: Additional studies related to socioeconomic status for Measure 1789, Hospital-wide all-cause unplanned readmission measure (HWR)

Date: April 2, 2012

Pursuant to a request from Helen Burstin at the National Quality Forum, the HWR development team has conducted additional analyses of the impact of socioeconomic status (SES) on hospital risk-standardized readmission rates.

This memorandum includes:

- An executive summary of the findings
- Definitions of socioeconomic status used in these analyses
- Analyses of risk-standardized readmission rates for hospitals with many low SES patients compared to others
- An analysis of risk-standardized readmission rates for hospitals with many low SES patients compared to others, excluding Medicaid patients

Socioeconomic Status Analyses for Hospital-wide Readmission Measure

EXECUTIVE SUMMARY

- Concern has been raised that hospitals serving vulnerable patient populations may be disproportionately and unfairly identified as poor performers by the hospital-wide readmission measure (HWR), if readmissions for these patients are largely beyond the control of the hospital or community.

- We examined the performance of hospitals based on proportion of low SES patients they serve, using four different measures of SES.

    - Hospitals with high proportion of low SES patients (low SES hospitals) have slightly higher risk-standardized readmission rates (RSRR) than other hospitals using a variety of definitions
    - The largest differences are found between hospitals with >30% Medicaid patients compared to hospitals with <10% Medicaid patients
    - Comparing these two extremes, the absolute difference in median RSRRs is 0.4% and the absolute difference in mean RSRR is 0.7%
    - For all other definitions of low SES hospitals, the absolute difference between group medians and means is **less than 0.3%**

- We also examined how hospitals with >30% Medicaid patients perform in caring for their patients who are **not** low SES to determine whether differences in performance persist even when low SES patients are removed from the measure.

    - Low SES hospitals have slightly higher RSRRs than other hospitals **even for patients without low SES**. That is, differences remain even when patients with low SES, as defined by Medicaid eligibility, are removed from the measure.

- The difference in RSRRs between low SES hospitals and others thus is not explained by their disproportionate share of low SES patients, but is likely attributable in part to other factors, including hospital quality.

BACKGROUND

Concern has been raised that hospitals serving vulnerable patient populations may be disproportionately and unfairly characterized as poor performing hospitals by the hospital-wide readmission measure (HWR), if readmissions for these patients are largely beyond the control of the hospital or community.

This document provides additional analyses of the relationship between socioeconomic status (SES) and hospital performance.

Throughout the document, we refer to hospitals serving large numbers of vulnerable patients as “low SES hospitals.”

Hospital-level SES definition

In order to examine the effect of low SES on hospital performance, we need to define low SES hospitals. There is no single accepted definition of this type of hospital. Consequently we have examined four alternate definitions in these analyses:

Proportion of Medicaid patients

We define a low SES hospital as one whose patient population is at least 30% Medicaid-insured according to the 2008 American Hospital Association survey. We compare these hospitals to three other groups: <10% Medicaid, 10 to <20% Medicaid and 20 to <30% Medicaid. Altogether, 331 hospitals (7.3%) have more than 30% Medicaid patients.

Safety net status

We define a safety net hospital as a public hospital, or as a private hospital with a Medicaid caseload greater than one standard deviation above its state's mean hospital Medicaid caseload. Altogether 1,412 hospitals (31.1%) are classified as safety net.

Disproportionate-share

The Medicare Disproportionate Share (DSH) payment adjustment is intended to compensate hospitals for the higher operating costs they incur in treating a large share of low-income patients. Hospitals whose DSH patient percentage exceeds 15 percent are eligible for a DSH payment adjustment based on a statutory formula.

For this analysis we define a DSH hospital as any hospital with a DSH patient percentage greater than 15 percent. Altogether 2,691 (57.3%) of hospitals are categorized as DSH hospitals.

Public hospital

We define a public hospital as one that reports public ownership in the American Hospital Association survey from 2008. Altogether 1,084 (23.9%) of hospitals are classified as public hospitals.

Summary: We define low SES hospitals four different ways in these analyses.

PERFORMANCE OF LOW SES HOSPITALS

Using each of the four definitions above, we examined the performance of low SES hospitals compared to others, comparing the mean, median, and range of risk standardized readmission rates (RSRRs) between low SES and other hospitals.

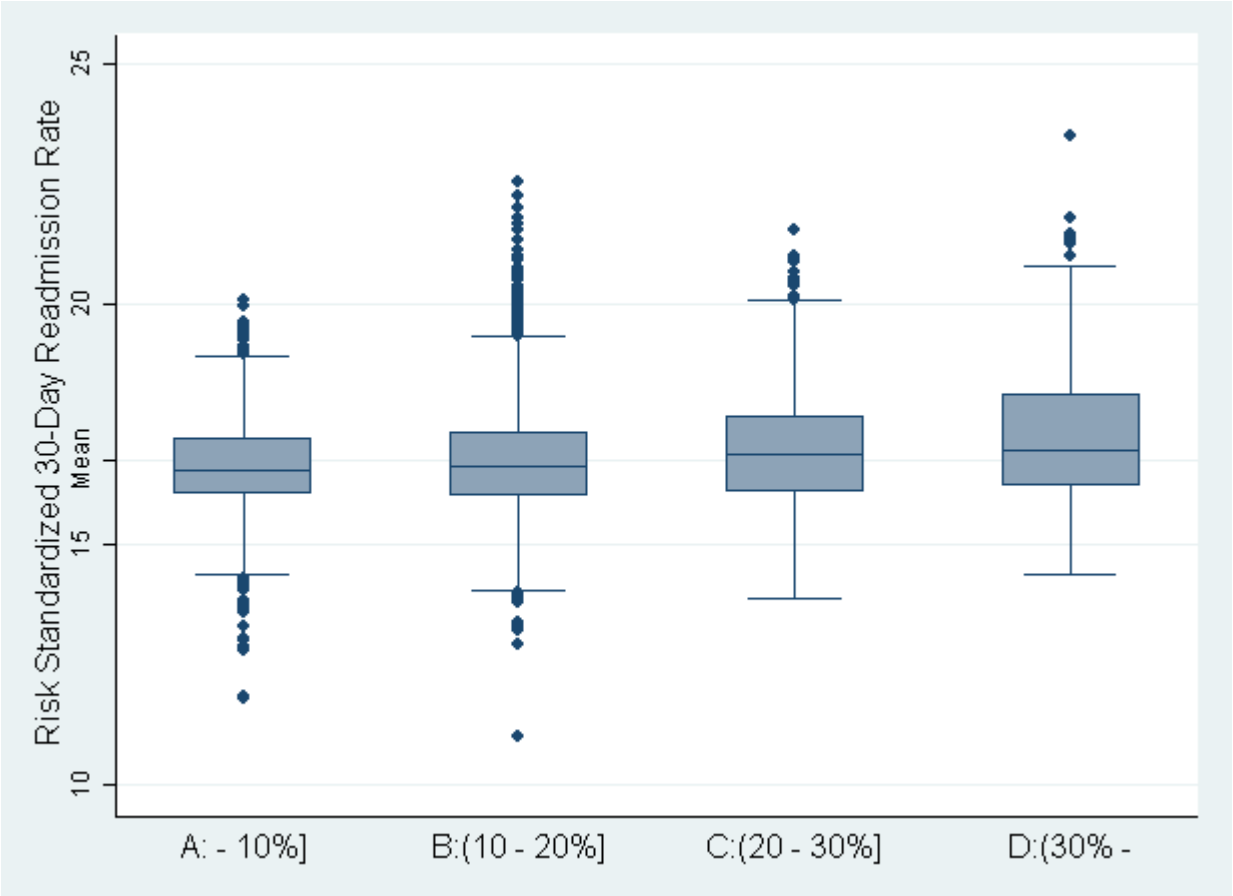
Proportion of Medicaid patients

Table 1: Mean, median and range of RSRR, by proportion of Medicaid patients

Proportion of Medicaid patients	Hospitals	Risk-standardized readmission rate (RSRR)					
		Mean (SD)	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
<10%	1,199	16.61 (1.03)	11.78	16.04	**16.56**	17.20	20.07
10 to <20%	2,132	16.75 (1.19)	11.01	16.02	**16.63**	17.35	22.55
20-<30%	881	16.94 (1.28)	13.88	16.07	**16.88**	17.67	21.56
30%+	331	17.27 (1.48)	14.39	16.22	**16.96**	18.11	23.50

- Hospitals with 30% or more Medicaid admissions had median RSRR of 16.96 compared with a median RSRR of 16.56 for hospitals with fewer than 10% Medicaid admissions.

Figure 1: Box-and-whisker plot of RSRR, by proportion of Medicaid patients



- A box-and-whisker plot graphically displays the distribution of a variable. The line in the shaded box represents the median value. The shaded box, bounded by the upper (75th) and lower (25th) quartiles, represents the interquartile range (IQR). Fifty percent of hospitals fall within this box. The lines, or "whiskers," extending from either end of the box are equal to 1.5 times the IQR (the 75th percentile minus the 25th percentile). All data points beyond the whiskers are considered outliers. These outliers are represented by individual dots.

- Here we see that the majority of hospitals, regardless of Medicaid proportion, fall into the same range of performance. There are no low readmission outliers in the low SES hospital group.

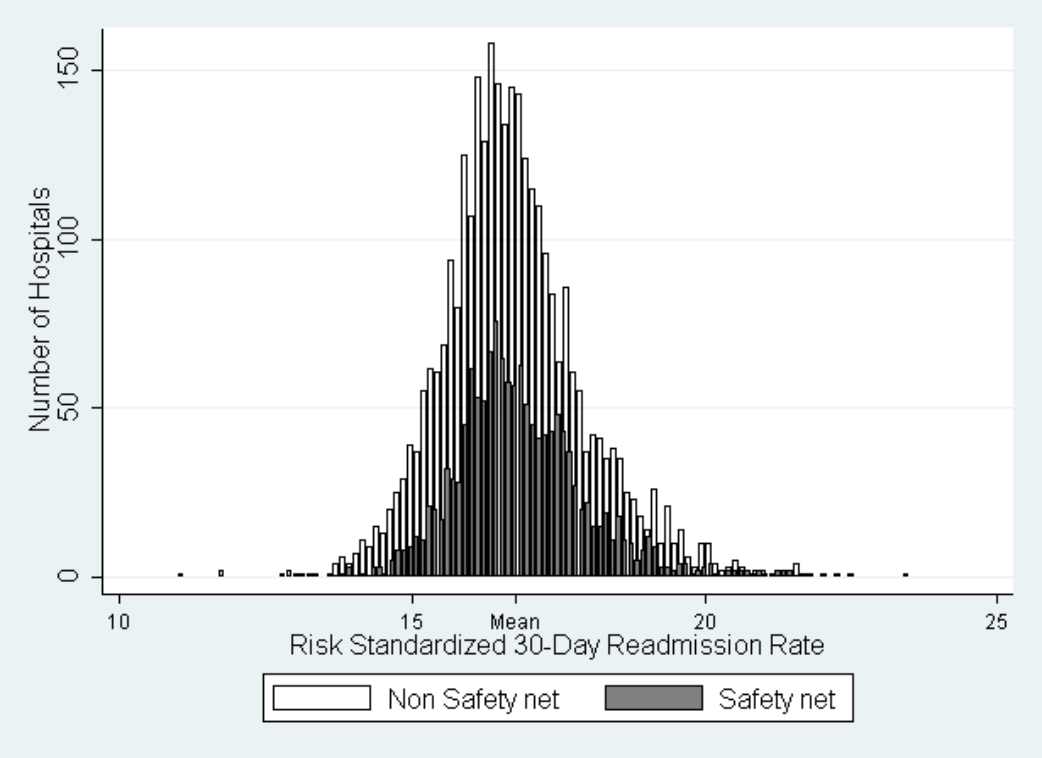
Safety net hospitals

Table 2: Mean, median and range of RSRR, by safety net status

Safety net hospital	Hospitals	Risk-standardized readmission rate (RSRR)					
		Mean (SD)	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
No	3,131	16.74 (1.22)	11.01	15.98	**16.63**	17.38	22.55
Yes	1,412	16.89 (1.16)	13.06	16.16	**16.75**	17.49	23.50

- Safety net hospitals had a median RSRR of 16.75 compared to 16.63 for non-safety net hospitals.

Figure 2: Histogram of RSRR, by safety net status



- This figure illustrates the distribution of performance for safety net and non-safety net hospitals. If safety net hospitals had consistently worse performance than non-safety net hospitals, we would expect the safety net histogram to be shifted to the right. However, we see that the two histograms essentially overlap.

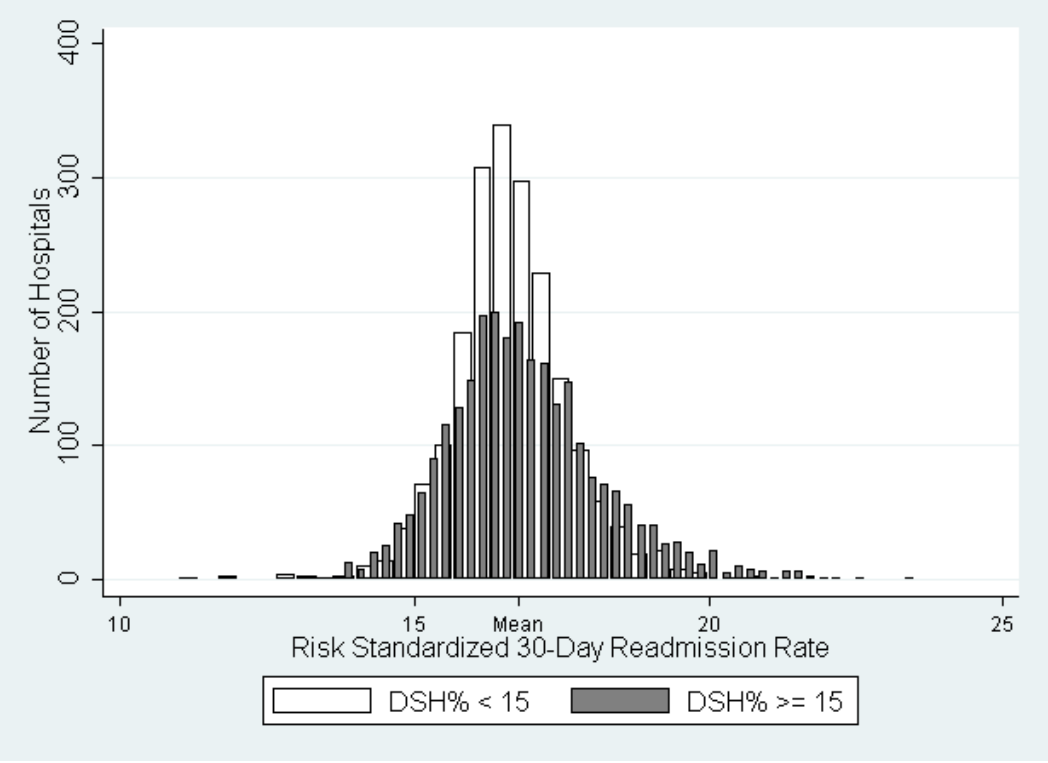
Disproportionate share hospitals

Table 3: Mean, median and range of RSRR, by DSH status

DSH	Hospitals	Risk-standardized readmission rate (RSRR)					
		Mean (SD)	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
No	2,005	16.64 (0.97)	11.01	16.08	**16.59**	17.16	20.99
Yes	2,691	16.90 (1.33)	13.19	16.02	**16.76**	17.64	23.50

- DSH hospitals had a median RSRR of 16.76 compared to 16.59 for non-DSH hospitals.

Figure 3: Histogram of RSRR, by DSH status



- This figure illustrates the distribution of performance between DSH and non-DSH hospitals. As for the safety net hospitals, we see that the two histograms essentially overlap with slight increase in high outliers in the DSH group.

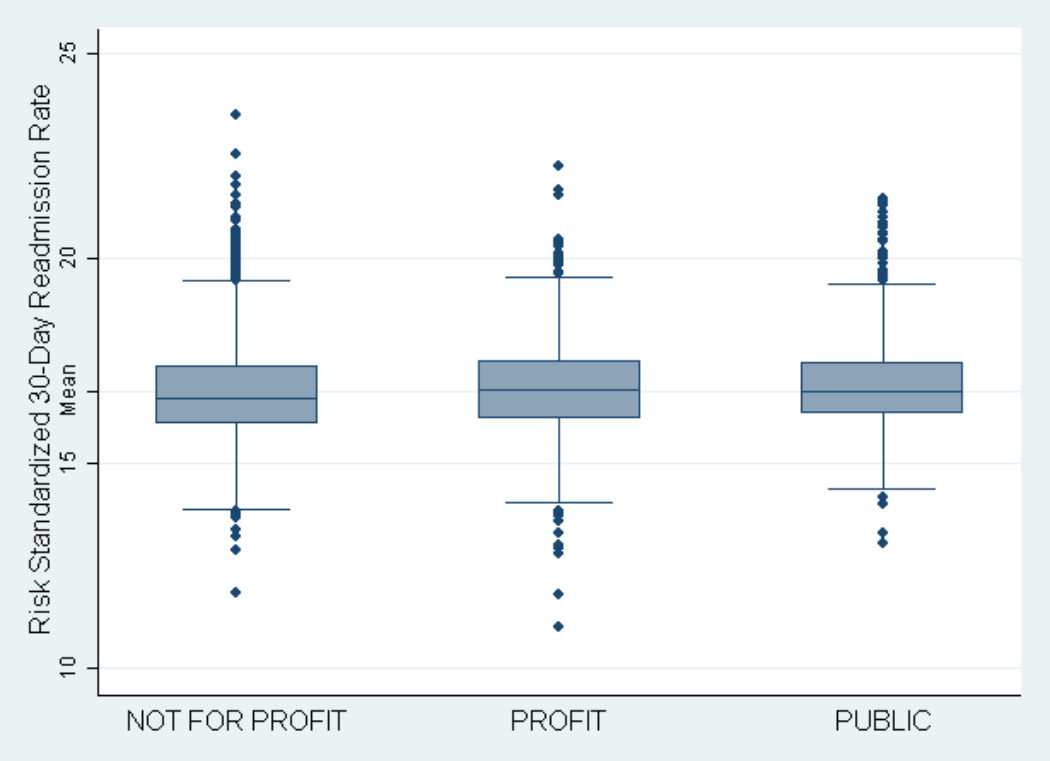
Public hospitals

Table 4: Mean, median and range of RSRR, by ownership status

Ownership	Hospitals	Risk-standardized readmission rate (RSRR)					
		Mean (SD)	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
Private, for profit	762	16.85 (1.28)	11.01	16.09	**16.81**	17.50	22.26
Private, not for profit	2,697	16.73 (1.23)	11.81	15.96	**16.59**	17.36	23.50
Public	1,084	16.88 (1.08)	13.06	16.19	**16.75**	17.48	21.48

- Public hospitals had a median RSRR of 16.75 compared to 16.59 for private, non-profit hospitals, and 16.81 for private, for-profit hospitals.

Figure 4: Box-and-whisker plot of RSRR, by ownership status



- The performance of public hospitals overlaps almost exactly with performance of not for profit and for-profit hospitals

Overall summary:

- Low SES hospitals have slightly higher RSRRs than other hospitals using a variety of definitions, although public hospitals outperform for-profit hospitals.
- The largest differences are found between the hospitals with the largest fraction of Medicaid patients (7.3% of hospitals) and those with the smallest fraction of Medicaid patients (26.4% of hospitals).
- Comparing these extremes, the absolute difference in median RSRRs is 0.4% and the absolute difference in mean RSRRs is 0.7%.
- For all other definitions of low SES, the difference between group means and medians is less than 0.3%.
- There is substantial overlap between groups using any of the 4 definitions, as illustrated in the figures.

ASSESSSING HOSPITAL PERFORMANCE WITHOUT LOW SES PATIENTS

In the previous analyses we showed very little difference in performance between low SES hospitals and others using the definition of low SES hospital as a safety net, DSH or public hospital.

Comparing the 331 hospitals with the largest fraction of low SES patients to the 1,199 hospitals with the smallest fraction of low SES patients, we saw slightly bigger differences in RSRRs, although differences were still small on an absolute basis.

To understand these differences better, we examined hospital RSRRs excluding their low SES patients. For the purposes of this analysis, we categorized patients with Medicaid coverage as low SES patients. That is, we examined how hospitals with the highest proportion of Medicaid patients performed for their patients *without* Medicaid by eliminating all patients with Medicaid coverage from the measure calculation.

- If low SES hospitals had similar performance to other hospitals once Medicaid patients were removed from the measure, we would conclude that their slightly higher overall readmission rate was attributable to their disproportionate share of Medicaid patients.

- However, if these hospitals still had worse performance than other hospitals even for patients *without* low SES, we would conclude that their overall performance was not driven by the SES of their patient population, but was likely due in part to other factors, including differences in hospital quality.

Performance of low SES hospitals *without* Medicaid patients

Table 5: Mean, median and range of RSRR, by proportion of Medicaid patients, Medicare patients only

Proportion of Medicaid patients	Hospitals	Risk-standardized readmission rate, Medicare only					
		Mean (SD)	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
<10%	1,199	15.70 (0.85)	11.49	15.25	**15.67**	16.17	18.92
10 to <20%	2,132	15.77 (0.93)	10.48	15.23	**15.69**	16.23	19.84
20-<30%	881	15.88 (0.97)	13.01	15.31	**15.86**	16.43	19.97
30%+	331	16.09 (1.07)	13.77	15.38	**15.88**	16.53	20.61

- After excluding all Medicaid patients from the measure, hospitals with the highest proportion (30%+) of Medicaid patients still had higher mean, median, and range of performance when compared with hospitals with the smallest proportion of Medicaid patients.

Summary: Small differences in RSRRs persist even when Medicaid patients are excluded from the measure.

NATIONAL QUALITY FORUM

MEASURE SPECIFICATIONS

	1789 Hospital-wide all-cause unplanned readmission measure (HWR)
Steward	Centers for Medicare & Medicaid Services | 500 Security Blvd., Mail Stop S3-02-01 | Baltimore | Maryland, 21244
Description	This measure estimates the hospital-level, risk-standardized rate of unplanned, all-cause readmission after admission for any eligible condition within 30 days of hospital discharge (RSRR) for patients aged 18 and older. The measure reports a single summary RSRR, derived from the volume-weighted results of five different models, one for each of the following specialty cohorts (groups of discharge condition categories or procedure categories): surgery/gynecology, general medicine, cardiorespiratory, cardiovascular, and neurology, each of which will be described in greater detail below. The measure also indicates the hospital standardized risk ratios (SRR) for each of these five specialty cohorts. We developed the measure for patients 65 years and older using Medicare fee-for-service (FFS) claims and subsequently tested and specified the measure for patients aged 18 years and older using all-payer data. We used the California Patient Discharge Data (CPDD), a large database of patient hospital admissions, for our all-payer data.
Type	Outcome
Data Source	Administrative claims
Level	Facility
Setting	Hospital/Acute Care Facility
Numerator Statement	(Note: This outcome measure does not have a traditional numerator and denominator like a core process measure (e.g., percentage of adult patients with diabetes aged 18-75 years receiving one or more hemoglobin A1c tests per year); thus, we use this field to define the measure outcome.) The outcome for this measure is unplanned all-cause 30-day readmission. We defined a readmission as an inpatient admission to any acute care facility which occurs within 30 days of the discharge date of an eligible index admission. All readmissions are counted as outcomes except those that are considered planned.
Numerator Details	**Time Window:** The time window for readmission is within 30 days from the date of discharge of the index admission. The outcome for this measure is unplanned all-cause readmission within 30 days of discharge date of an eligible index admission. Because planned readmissions are not a signal of quality of care, the measure does not count planned readmissions in the outcome. The measure uses an algorithm to identify "planned readmissions" in claims data that will not count as readmissions in the measure. The algorithm is based on two main principles: 1- "Planned" readmissions are those in which one of a pre-specified list of procedures took place (which will be described in detail below), or those for maintenance chemotherapy, organ transplant, or rehabilitation. 2- Admissions for acute illness or for complications of care are not "planned." Even a typically planned procedure performed during an admission for an acute illness would not likely have been planned. We can identify readmissions as acute or non-acute by considering the principal discharge condition. The algorithm developed to identify planned readmissions uses procedure codes and discharge diagnosis categories for each readmission. The HWR measure defines planned readmissions as any readmission that was either: A non-acute readmission in which one of 35 typically planned procedures occurs; or A readmission for maintenance chemotherapy, organ transplant, or rehabilitation All other readmissions are considered unplanned and are counted as readmissions in the measure. The following examples illustrate this approach: Example 1:

	1789 Hospital-wide all-cause unplanned readmission measure (HWR)

	A readmission with a discharge condition category of biliary tract disease that included a cholecystectomy would be considered planned.
	
	A readmission with a discharge condition category of septicemia that included a cholecystectomy would be considered unplanned.
	
	A readmission with a discharge condition category of "complications of surgical procedures or medical care" would be considered unplanned.
	
	List of planned procedures (Table 1)
	Planned procedures are identified using AHRQ Clinical Classification System (CCS) procedure category list (Table 1). Readmissions in which any of these procedures are performed are considered planned if the discharge condition category is not acute or a complication of care (i.e., not listed in Table 2).
	
	Table 1: Procedure categories considered planned
	
	AHRQ Procedure CCS//Description//Readmissions with no excluding diagnosis ("planned" readmissions): Number, Percent of total planned readmissions in the 2008 Medicare Provider Analysis and Review (MedPAR) dataset used for measure development
	
	45//Percutaneous transluminal coronary angioplasty (PTCA)//12,038, 13.83%
	//Rehabilitation (Condition CCS 254)//9,973, 11.46%
	84//Cholecystectomy and common duct exploration//7,191, 8.26%
	157//Amputation of lower extremity//6,649, 7.64%
	44//Coronary artery bypass graft (CABG)//6,290, 7.23%
	78//Colorectal resection//4,719, 5.42%
	51//Endarterectomy; vessel of head and neck//4,558, 5.24%
	113//Transurethral resection of prostate (TURP)//3,752, 4.31%
	99//Other OR gastrointestinal therapeutic procedures//3,475, 3.99%
	48//Insertion; revision; replacement; removal of cardiac pacemaker or cardioverter/defibrillator//2,541, 2.92%
	//Maintenance chemotherapy (condition CCS 45)//2,312, 2.66%
	211//Therapeutic radiology for cancer treatment//2,183, 2.51%
	3//Laminectomy; excision intervertebral disc//2,065, 2.37%
	43//Heart valve procedures//2,061, 2.37%
	152//Arthroplasty knee//1,989, 2.28%
	158//Spinal fusion//1,963, 2.25%
	55//Peripheral vascular bypass//1,902, 2.18%
	52//Aortic resection; replacement or anastomosis//1,529, 1.76%
	36//Lobectomy or pneumonectomy//1,492, 1.71%
	153//Hip replacement; total and partial//1,333, 1.53%
	60//Embolectomy and endarterectomy of lower limbs//1,263, 1.45%
	85//Inguinal and femoral hernia repair//981, 1.13%
	104//Nephrectomy; partial or complete//921, 1.06%
	1//Incision and excision of CNS//804, 0.92%
	124//Hysterectomy; abdominal and vaginal//524, 0.60%
	167//Mastectomy//474, 0.54%
	10//Thyroidectomy; partial or complete//353, 0.41%
	114//Open prostatectomy//338, 0.39%
	74//Gastrectomy; partial and total//278, 0.32%
	119//Oophorectomy; unilateral and bilateral//273, 0.31%
	154//Arthroplasty other than hip or knee//229, 0.26%
	//Radical laryngectomy, revision of tracheostomy, scarification of pleura (ICD-9 codes 30.4, 31.74, 34.6)//216, 0.25%
	166//Lumpectomy; quadrantectomy of breast//117, 0.13%
	64//Bone marrow transplant//100, 0.11%
	105//Kidney transplant//70, 0.08%

	1789 Hospital-wide all-cause unplanned readmission measure (HWR)

	176//Other organ transplantation//69, 0.08%
	//Electroshock therapy (ICD-9 codes 94.26, 94.27)//30, 0.03%
	
	List of discharge condition categories that are acute or complications of care (Table 2)
	Admissions in which a planned procedure was performed are only considered "planned" if the patient was not admitted for an acute illness or complication of care. Table 2 contains the list of 27 discharge condition categories considered either acute or complications of care.
	
	Table 2: Discharge condition categories considered acute or complications of care
	
	AHRQ CCS//Description //Number of 30-day readmissions with this condition and one of the planned procedures in the 2008 MedPAR dataset used for measure development.
	
	237//Complication of device; implant or graft//11,689
	106//Cardiac dysrhythmias//10,267
	//Fracture (CC 207, 225, 226, 227, 229, 230, 231, 232)//6,307
	100//Acute myocardial infarction//5,643
	238//Complications of surgical procedures or medical care//5,438
	108//Congestive heart failure; nonhypertensive//5,119
	2//Septicemia (except in labor)//3,372
	146//Diverticulosis and diverticulitis//2,434
	105//Conduction disorders//2,130
	109//Acute cerebrovascular disease//1,886
	145//Intestinal obstruction without hernia//1,341
	233//Intracranial injury//1,271
	116//Aortic and peripheral arterial embolism or thrombosis//1,115
	122//Pneumonia (except that caused by TB or sexually transmitted disease)//710
	131//Respiratory failure; insufficiency; arrest (adult)//678
	157//Acute and unspecified renal failure//645
	201//Infective arthritis and osteomyelitis (except that caused by TB or sexually transmitted disease)//608
	153//Gastrointestinal hemorrhage//566
	130//Pleurisy; pneumothorax; pulmonary collapse//510
	97//Peri-; endo-; and myocarditis; cardiomyopathy//484
	127//Chronic obstructive pulmonary disease and bronchiectasis//462
	55//Fluid and electrolyte disorders//424
	159//Urinary tract infections//410
	245//Syncope//353
	139//Gastroduodenal ulcer (except hemorrhage)//133
	160//Calculus of urinary tract//98
	112//Transient cerebral ischemia//88
	//All condition categories//64,181

Denominator Statement	This claims-based measure can be used in either of two patient cohorts: (1) admissions to acute care facilities for patients aged 65 years or older or (2) admissions to acute care facilities for patients aged 18 years or older. We have tested the measure in both age groups.
Denominator Details	**Time Window:** One year. The ICD-9 diagnosis and procedure codes of the index admission are aggregated into clinically coherent groups of conditions/procedures (condition categories or procedure categories) by using the Agency for Healthcare Research and Quality (AHRQ) Clinical Classifications System (CCS). Next, these discharge condition/procedure categories are organized into five mutually exclusive specialty cohorts defined by care team: surgery/gynecology, cardiorespiratory, cardiovascular neurology, and medicine. Rationale: Conditions typically cared for by the same team of clinicians are expected to experience similar

	1789 Hospital-wide all-cause unplanned readmission measure (HWR)
	added (or reduced) levels of readmission risk. The surgery/gynecology cohort includes admissions likely cared for by surgical or gynecological teams. These admissions are identified using AHRQ procedure categories. The cardiorespiratory cohort includes several condition categories with very high readmission rates such as pneumonia, chronic obstructive pulmonary disease, and heart failure. These admissions are combined into a single cohort because they are often clinically indistinguishable and patients are often simultaneously treated for several of these diagnoses. The cardiovascular cohort includes condition categories such as acute myocardial infarction that in large hospitals might be cared for by a separate cardiac or cardiovascular team. The neurology cohort includes neurologic condition categories such as stroke that in large hospitals might be cared for by a separate neurology team. The medicine cohort includes all non-surgical patients who were not assigned to any of the other cohorts. See attachments (Technical Report, Section 2.4.5, Table 8, and All-Payer memo, Tables 2-6). In order to define the eligible admissions, we first aggregated the ICD-9 codes of the index admission into clinically coherent conditions by using the Agency for Healthcare Research and Quality's Clinical Classifications Software (CCS). There are a total of 285 mutually exclusive AHRQ condition categories, most of which are single, homogenous diseases such as pneumonia or acute myocardial infarction. Some are aggregates of conditions, such as "other bacterial infections." Mental health and substance abuse categories are included. In addition, AHRQ provides 231 mutually exclusive procedure categories to group procedures a patient might have had during hospitalization. Admissions are eligible for inclusion in the measure if: a. Patient is aged 18 years or older Rationale: Pediatric patients have substantially different illnesses, comorbidities and outcomes compared to an adult population. b. Patient is alive upon discharge Rationale: Patients who die during the initial hospitalization cannot be readmitted. c. Patient is not transferred to another acute care hospital upon discharge Rationale: In an episode of care in which patient is transferred among hospitals, responsibility for the readmission is assigned to the final discharging hospital. Therefore these intermediate admissions within a single episode of care are not eligible for inclusion. Note that a readmission within 30 days will also be eligible as an index admission, if it meets all other eligibility criteria. This allows our measure to capture repeated readmissions for the same patient, whether at the same hospital or another.
Exclusions	We exclude from the measure all admissions for which full data are not available or for which 30-day readmission by itself cannot reasonably be considered a signal of quality of care. Exclusions: 1. Admissions for patients without 30 days of post-discharge enrollment in FFS Medicare Rationale: This is necessary in order to identify the outcome (readmission) in the dataset. 2. Admissions for patients not continuously enrolled in FFS Medicare for the 12 months prior to the index admission Rationale: This is necessary to capture historical data for risk adjustment. 3. Admissions for patients discharged against medical advice (AMA) Rationale: Hospital had limited opportunity to implement high quality care. 4. Admissions for patients to a PPS-exempt cancer hospital Rationale: These hospitals care for a unique population of patients that is challenging to compare to other hospitals. 5. Admissions for patients with medical treatment of cancer (See Table 3 in Section 2a1.9) Rationale: These admissions have a very different mortality and readmission profile than the rest of the Medicare population, and outcomes for these admissions do not correlate well with outcomes for other admissions. (Patients with cancer who are admitted for other diagnoses or for surgical treatment of their cancer

	1789 Hospital-wide all-cause unplanned readmission measure (HWR)
	remain in the measure). 6. Admissions for primary psychiatric disease (see Table 4 in Section 2a1.9) Rationale: Patients admitted for psychiatric treatment are typically cared for in separate psychiatric or rehabilitation centers which are not comparable to acute care hospitals. 7. Admissions for "rehabilitation care; fitting of prostheses and adjustment devices" Rationale: These admissions are not for acute care or to acute care hospitals.
Exclusion Details	We exclude from the measure all admissions for which full data are not available or for which 30-day readmission by itself cannot reasonably be considered a signal of quality of care. Exclusions: 1. Admissions for patients without 30 days of post-discharge data Rationale: This is necessary in order to identify the outcome (readmission) in the dataset. 2. Admissions for patients lacking a complete enrollment history for the 12 months prior to admission Rationale: This is necessary to capture historical data for risk adjustment. 3. Admissions for patients discharged against medical advice (AMA) Rationale: Hospital had limited opportunity to implement high quality care. 4. Admissions for patients to a PPS-exempt cancer hospital Rationale: These hospitals care for a unique population of patients that is challenging to compare to other hospitals. 5. Admissions for patients with medical treatment of cancer (See Table 3 in Section 2a1.9) Rationale: These admissions have a very different mortality and readmission profile than the rest of the Medicare population, and outcomes for these admissions do not correlate well with outcomes for other admissions. (Patients with cancer who are admitted for other diagnoses or for surgical treatment of their cancer remain in the measure). 6. Admissions for primary psychiatric disease (see Table 4 in Section 2a1.9) Rationale: Patients admitted for psychiatric treatment are typically cared for in separate psychiatric or rehabilitation centers which are not comparable to acute care hospitals. 7. Admissions for "rehabilitation care; fitting of prostheses and adjustment devices" Rationale: These admissions are not for acute care or to acute care hospitals. Additionally, in the all-payer testing, we excluded obstetric admissions because the measure was developed among patients aged 65 years or older (approximately 500,000). 23//Other non-epithelial cancer of skin//593 26//Cancer of cervix//586 28//Cancer of other female genital organs//326 34//Cancer of other urinary organs//301 37//Hodgkin`s disease//236 22//Melanomas of skin//212 31//Cancer of other male genital organs//34 30//Cancer of testis//4 //Total//182,213 Table 4: Psychiatric discharge condition categories excluded from the measure AHRQ CCS//Description//Number of Admissions 657//Mood disorders//7,874 659//Schizophrenia and other psychotic disorders//7,849 651//Anxiety disorders//3,153 670//Miscellaneous disorders//1,315 654//Developmental disorders//594

	1789 Hospital-wide all-cause unplanned readmission measure (HWR)
	650//Adjustment disorders//399 658//Personality disorders//127 652//Attention-deficit, conduct, and disruptive behavior disorders//119 656//Impulse control disorders, NEC//27 655//Disorders usually diagnosed in infancy, childhood, or adolescence//16 662//Suicide and intentional self-inflicted injury//10 //Total//21,483
Risk Adjustment	Hierarchical logistic regression models are used to model the log-odds of readmission within 30 days of discharge, as a function of patient-level demographic and clinical characteristics and a random hospital-level intercept. This model specification accounts for within-hospital correlation of the observed outcomes and models the assumption that underlying differences in quality among the health care facilities being evaluated lead to systematic differences in outcomes. In brief, the approach simultaneously models two levels (patient and hospital) to account for the variance in patient outcomes within and between hospitals [1]. At the patient level, each model adjusts the log-odds of readmission within 30-days of discharge for age and selected clinical covariates. The second level models the hospital-specific intercepts as following a normal distribution. The hospital intercept represents the underlying hospital specific risk of readmission, after accounting for patient risk. If there were no differences among hospitals, then after adjusting for patient risk, the hospital intercepts should be identical across all hospitals. We use a fixed, common set of variables in all our models for simplicity and ease of data collection and analysis. However, we estimate a hierarchical logistic regression model for each specialty cohort separately, and the coefficients associated with each variable may vary across specialty cohorts. To group ICD-9-CM codes into comorbid risk variables, we use CMS Condition Category (CMS-CCs) groups, the grouper used in previous CMS risk-standardized outcomes measures [2]. See Table 5 for the final list of comorbid risk variables. The models also include a condition-specific indicator for all condition categories with sufficient volume (defined as those with more than 1,000 admissions nationally each year for Medicare FFS data) as well as a single indicator for conditions with insufficient volume in each model. See Table 5, of the Measure Submission and Evaluation Worksheetfor the final list of comorbid risk variables.
Stratification	N/A
Type Score	Other A standardized risk ratio (SRR) for each hospital and each cohort is estimated using a separate hierarchical logistic regression model for that cohort. The five SRRs, weighted by volume, are then combined into a single score which is the risk-standardized hospital-wide readmission ratio. To improve interpretation, this ratio is then multiplied by the overall national raw readmission rate for all index admissions in all cohorts to produce the risk-standardized hospital-wide readmission rate (RSSR).
Algorithm	Models for each specialty cohort are specified and estimated, using a separate hierarchical logistic regression model for that cohort. Each model is then used to calculate a standardized risk ratio (SRR) for each hospital which contributes index admissions to that model. These SRRs, weighted by volume, are then pooled for each hospital to create a composite hospital-wide SRR. For each specialty cohort within a hospital, the numerator of the SRR ("predicted") is the number of readmissions for patients within the specialty cohort within 30 days predicted on the basis of the hospital's performance with its observed case mix, and the denominator ("expected") is the number of readmissions expected for patients within the specialty cohort on the basis of the nation's performance with that hospital's case mix. This approach is analogous to a ratio of "observed" to "expected" used in other types of statistical analyses. It conceptually allows for a comparison of a particular hospital's performance given its case-mix to an average hospital's performance with the same case-mix. Thus, an SRR less than 1 indicates lower-than-expected readmission or better quality and an SRR greater than 1 indicates higher-than-expected readmission or worse quality. These SRRs are then pooled for each hospital to create a composite hospital-wide SRR. This pooled SRR is the geometric mean of the specialty cohort SRRs, weighted by the number of admissions in the specialty cohort, and the pooled SRR is then multiplied by the overall crude readmission rate to produce the risk standardized readmission rate (RSRR) for reporting. Please see attachment (Technical Report, Section 2.6) for more details on the calculation algorithm.