System Performance Measurement Programs

During its pre-rulemaking process, MAP reviews one program that assesses care at the system level, the Medicare Shared Savings Program (MSSP). This section covers the key issues raised during the pre-rulemaking process for MSSP, and reviews MAP's recommendations for the program.

Key Issues

In addition to reviewing MSSP as part of its pre-rulemaking process, MAP provides input to HHS on other system-level programs outside the pre-rulemaking cycle, including the Medicaid Adult Core Measure Set and the Quality Rating System for Qualified Health Plans in federal Health Insurance Marketplaces. One of MAP's goals is to promote alignment across all programs and units of analysis. MAP generally supports measures for MSSP that are used in other system-level programs (e.g., Medicare Advantage 5-Star Quality Rating System) and measures of population health. Ideally, the same measure could be used across all system-level programs. Additionally, MAP recommends that system-level program measure sets align with measures used for setting-specific performance measurement programs, as harmonized measures can enhance focus on care delivery goals and reduce data collection burden.

Medicare Shared Savings Program Measure Set

MAP's previous assessment of the MSSP measure set found it to be comprehensive, addressing cross-cutting measurement priorities such as patient experience as well as high-impact conditions and key quality outcomes. Additionally, observing that the measure set places heavy emphasis on ambulatory care, MAP recommended that it could be enhanced with the addition of acute and post-acute care measures, and measures relevant to patients with multiple chronic conditions. Although the set has many positive attributes, MAP advises movement towards more outcome measures, or composites of related process measures, in the near future.

MAP reviewed 15 measures under consideration and supported the inclusion of one measure, NQF #0576 Follow-up after Hospitalization for Mental Illness, as MAP had previously recommended including this measure to align with the Medicare Advantage 5-Star Quality Rating System. Additionally, MAP conditionally supported one measure, Optimal Asthma Care–Control Component, noting that the full composite should be used in the program once it receives NQF-endorsement. This outcome measure supports coordination of care for a prevalent, high-burden, and costly chronic condition, and alignment with other programs as MAP conditionally supported this measure for use in clinician programs.

MAP reviewed and conditionally supported several measures that are collected through the Clinician-Group CAHPS (CG-CAHPS) survey—Courteous & Helpful Office Staff, Supplemental Item Care Coordination, Between Visit Communication, Educating Patient about Medication Adherence, and Supplemental Item Stewardship of Patient Resources. Medicare ACOs are already required to administer the CG-CAHPS survey, and MAP supports including the individual performance of measures derived from CG-CAHPS in the ACO quality score linked to payment, provided the individual performance measure is reliable and valid. MAP stipulated that the new and supplemental measures collected through CAHPS

should be submitted for and receive NQF endorsement. MAP supported another CAHPS Survey, Patient Experience with Surgical Care Based on the Surgical Care Survey CAHPS (S-CAHPS), as it is an NQF-endorsed patient-reported outcome measure that addresses the gap in acute care measures in the program set. MAP discussed the potential survey burden imposed on patients, as multiple Medicare programs require CAHPS surveys. MAP recommends that HHS review the sampling methodology for all CAHPS surveys to ensure that patients are not receiving multiple requests to complete similar surveys.

Finally, MAP conditionally supported two additional survey measures, the SF-36 and the Patient Activation Measure, noting that these tools address critically important patient-reported outcomes (PROs). However, the data from these tools would need to be tested as a performance measure. Additionally, the group noted that other tools should be considered, such as the VR-36, VR-12, and PROMIS tool should also be considered as

MAP did not support the remaining measures under consideration as they address specific conditions, recommending instead that ACOs continue to gain experience with the finalized measure set before expanding to additional condition-specific measures. Accordingly, MAP did not support two osteoporosis measures that MAP had previously recommended for inclusion to promote alignment with the Medicare Advantage 5-Star program. MAP supports future inclusion of these measures in MSSP once ACOs are able to overcome implementation issues with the currently finalized measure set.

While MAP views the MSSP measure as close to an ideal set, it could be enhanced with other patient-reported outcome measures in the areas of depression remission, functional status, smoking, and medically complex patients (e.g., chronically ill or those with multiple chronic conditions), as well as a measure of health risks with follow-up interventions. MAP previously discussed cost as a measure gap and the value of including additional cost measures as MSSP is designed to generate cost savings. Ultimately, MAP was split on the inclusion of additional cost measures. Members in support of additional cost measures noted that consumers need cost information to supplement quality data for this program; however, the current MSSP cost calculation only includes Medicare services, thus a complete picture of total Medicare and private payer costs is not possible at this time. MAP members who did not support additional cost measures did not want to increase the reporting burden for ACOs and suggested that the existing ACO cost calculations be made publicly available for consumers.

Clinician Performance Measurement Programs

MAP reviewed measures in finalized program measure sets and measures under consideration for four clinician programs. The Physician Quality Reporting System (PQRS) and the Medicare and Medicaid EHR Incentive Program for Eligible Professionals (Meaningful Use) are reporting programs that provide performance information for Physician Compare and the Value-Based Payment Modifier (VBPM). Accordingly, all finalized measures and measures under consideration for PQRS and MSSP are also under consideration for Physician Compare and VBPM. As these programs are inextricably linked, MAP integrates its review of all four programs, considering the following:

- If measures should be used for clinician reporting (i.e., should be included in PQRS)
- If measures are e-specified or leverage HIT capabilities (i.e., should be included in Meaningful Use)
- If measures should be publicly reported (i.e., should be included in Physician Compare)
- If measures should be used for payment incentives and penalties (i.e., should be included in VBPM)

This section covers the key issues and reviews MAP's recommendations for clinician performance measurement programs.

Key Issues

In reviewing the clinician performance measurement programs, MAP utilized its Guiding Principles for Applying Measures to Clinician Programs (see Appendix X) in addition to the MAP Measure Selection Criteria. The MAP Clinician Workgroup considered if its Guiding Principles should be revised based on the review of measures; however, the workgroup determined that the guiding principles still reflect MAP's recommendations, and that the full set of principles should be widely publicized to help promote an efficient pre-rulemaking process and to obtain ongoing feedback to ensure that the principles are working effectively. Recognizing that the pre-rulemaking cycle does not allow sufficient time for reviewing a large number of measures under consideration and all currently finalized measures, MAP began its review of finalized measures prior to the winter pre-rulemaking cycle. MAP identified 43 measures for removal from PQRS; many of these measures have been submitted for NQF-endorsement and were not endorsed. Additionally, MAP identified 66 finalized PQRS measures that should be included in Physician Compare and VBPM; these measures are primarily NQF-endorsed outcome measures, composite measures, and process measures that address cross-cutting topics.

The majority of measures under consideration reviewed by MAP were measure concepts or are being specified or tested for the clinician level of analysis. While MAP prefers the use of NQF-endorsed measures—ensuring that measures are reliable, valid, and feasible—MAP supported or conditionally supported 74 measures for inclusion in PQRS, recognizing that the program lacks measures relevant to many clinician specialties. MAP did not support the use of most (52) of these measures in Physician Compare and VBPM, as MAP strongly prefers that experience be gained with measures through PQRS and that measures be submitted for and receive NQF-endorsement prior to implementation in public reporting and payment programs.

MAP also reviewed a large number of condition-specific episode grouper measure concepts. Generally, MAP conditionally supported these measures, recognizing that cost measures are critical to the implementation of VBPM. After the episode grouper measure concepts are fully specified and tested, they should be submitted for and receive NQF-endorsement, and then be paired with relevant clinical outcome measures. In reviewing the episode grouper measures, MAP requested that the measure developer further explore and clarify how costs for patients with multiple chronic conditions are attributed to these measures, as patients would potentially be incorporated in multiple episode grouper measures. Similarly, MAP raised questions about how the episode grouper measures are attributed to clinicians, noting that multiple clinicians, including primary care clinicians and specialists, contribute to the costs associated with a particular condition. Finally, MAP requested clarification about the spectrum of a condition that an episode grouper might cover, recognizing that the severity of the condition may impact the cost; for example, stage-1 breast cancer may be less costly than stage-5 breast cancer. MAP requests that all of these issues be considered in the continued development and endorsement of these measures.

MAP noted measure gaps for the clinical programs similar to past years, emphasizing the need for measures that lead to improved outcomes and the overall health and wellbeing of patients across the care continuum. MAP recommended that related process measures be rolled up into composites to illustrate a more comprehensive picture of quality. Accordingly, efforts to develop measures for clinician specialties that lack measures should focus on outcomes and composites.

Pre-Rulemaking Input on Measures for Clinician Group Reporting

The PQRS Group Practice Reporting Option web interface (GPRO) requires clinician groups to report on a set of 18 finalized measures, rather than selecting a subset of measures. In spring 2013, MAP provided input on measures applicable to clinician group reporting, recommending 15 measures for inclusion in Physician Compare and VBPM. This input was developed recognizing that implementation of Physician Compare and VBPM will begin with clinician groups, before expanding to all clinicians. Having provided prior input on the measure set, MAP considered how the measure set could be enhanced.

Recognizing that this reporting option is often selected by large multi-specialty group practices, MAP recommends that future expansion of the measure set focus on measures that highlight a group's ability to provide coordinated seamless care. CMS seeks alignment of MSSP and GPRO; accordingly, MAP supported NQF #0576 Follow-Up After Hospitalization for Mental Illness for inclusion in GPRO. MAP also noted that existing measures address the medication management gap—NQF# 0022 Use of High Risk Medications in the Elderly and NQF# 0553 Care for Older Adults-Medication Review; however, MAP would ultimately prefer a composite measure that addresses the concepts in both measures.

Similar to MSSP, MAP noted that the GRPO measure set could be enhanced with additional composite measures, such as optimal vascular care and optimal asthma care, and outcome measures related to pain and depression. In addition to alignment with MSSP, MAP recommends that the GPRO measure set align with other system-level reporting programs, such as MA 5-Star and the Medicaid Adult Core Measure Set.

Pre-Rulemaking Input on Measures for Individual Clinician Reporting

Individual clinicians and clinician groups reporting through EHRs or claims (e.g., not reporting through the GPRO web interface) are required to report nine measures that address three National Quality Strategy domains. A goal across all clinician programs is to encourage clinician participation, particularly as PQRS transitions from an incentive program to a penalty program in 2015. MAP seeks to encourage clinician participation by identifying measures that are clinically relevant for all clinician specialties. To accomplish this, MAP supports incorporating measures used in Maintenance of Certification (MOC) programs into the federal programs. Additionally, MAP notes that implementation of the Quality Clinical Data Registries reporting option[1] will assist in ensuring that all clinicians will be able to participate in the federal programs.

To further support clinician participation, MAP discussed the development of a core measure set for individual clinician reporting. MAP notes that a core would address critical improvement gaps, align payment incentives across clinician types, and reduce reporting burden. MAP considered two options for implementing a core set: (1) identifying a subset of measures that all clinicians would be required to report or (2) identifying multiple core sets, for each specialty or groups of related specialties. Ideally,

[1] CY 2014 PFS Final Rule. The Office of the Federal Register. https://www.federalregister.gov/articles/2013/12/10/2013-28696/medicare-program-revisions-to-payment-policies-under-the-physician-fee-schedule-clinical-laboratory.

MAP would prefer to identify a core that all clinicians could report but recognized this would be a challenging task given the wide variation in clinical practice. MAP considered options for segmenting clinicians into groups that would report common core sets. Options include segmenting clinicians by those who see patients regularly versus those who do not, by care setting, by types of encounters (e.g., those who have episodic interactions with patients versus those who have longitudinal relationships with patients), or by patient population served (e.g. those who serve a high volume of vulnerable patients).

Regardless of the logical segmentation of clinicians, MAP would ideally like to identify a few (e.g., 2-3) measures that all clinicians in a segment would report to support comparisons across larger cohorts of clinicians. The measures in a core set should focus on measure topics that drive broad improvements in healthcare delivery. MAP noted that core measures should promoted shared accountability, address cost, and assess care longitudinally; specifically, core measure topics should include patient-reported outcomes (e.g., health related quality of life, shared decision-making, experience with care), care coordination and communication across providers and settings, medication management, cultural competency, population health, and health disparities.

Application of Hospital-based Measures to Clinician Reporting

Currently, the clinician measurement programs do include measures that are applicable to many hospital-based physicians. During 2014 rulemaking, HHS identified two options for applying existing hospital measures to the clinician performance measurement programs: (1) re-specify existing hospital-level measures for application to clinicians and (2) apply a hospital's performance rates to clinicians practicing in that hospital. MAP considered these options, reviewing finalized measures and measures under consideration for the Hospital Inpatient Quality Reporting Program and Hospital Outpatient Quality Reporting Program and discussing their application to clinician programs.

Generally, MAP supports both options for using hospital-level measures to assess clinician performance, depending on individual clinician or hospital system role in improving performance on the measure. Both options support aligned measurement across the hospital and clinician levels of analysis, supporting aligned incentives. Additionally, both options reduce the collective data collection burden for hospitals and clinicians. MAP discussed which measures should apply to each option:

> *Re-specifying hospital-level measures.* MAP noted that individual clinician performance is important to consumers, so a subset of hospital-level measures should be re-specified for individual clinicians. MAP noted that the hospital-level measures that are best suited for this option are in areas of care where consumers are able to select their providers, with significant variation in clinician performance, and where care is largely attributed to providers. For example, for planned surgeries (e.g., hip replacement, knee replacement), consumers are able to choose a clinician, so hospital measures for these procedures should be re-specified for clinician reporting. MAP cautioned that HHS would need to develop methods for aggregating clinicians' data from multiple hospitals. Additional testing will be needed for any re-specified measures to ensure psychometric soundness. For example, some variation in provider performance may be caused by the time of day or workflow in the hospital.
>
> *Applying hospital performance rates.* MAP noted that this option promotes shared accountability, as it would incentivize both the clinician and hospital to improve performance on

the same measures. This option may be best suited for hospitalists and other clinicians who are dedicated to one hospital system. Areas of care where consumers are unable to select their clinicians (e.g., critical events, ED care) and areas that focus on the systems of a hospital (e.g., throughput measures) are best suited for this option.

MAP would like to provide input on measures that could be applicable to each option.

CMS 2013 Dry Run Results: Acute Ischemic Stroke 30-Day Mortality and Readmission Measures

11-12 December 2013

Dry run overview

- Conducted a dry run from August 12 through September 11, 2013.
- Provided hospitals with their results and resources to learn about the measures.
- Responded to questions and solicited stakeholder feedback.

Summary of dry run

- Provided reports containing results on stroke measures to 4,736 hospitals.
  - Of these, 63% (2,990) downloaded their reports.
- Held national provider call for 609 callers.
- Received 32 questions about the stroke measures through email Q&A system.
  - Most common questions were about cohort definition and plans for implementation and public reporting.

Design of measures

- Developed and calculated using administrative claims data.
- Includes Medicare FFS patients aged 65+ admitted for acute ischemic stroke.
- Includes non-federal acute care hospitals.
- Risk-adjusted.
- Reported as risk-standardized mortality (RSMR) and readmission (RSRR) rates.

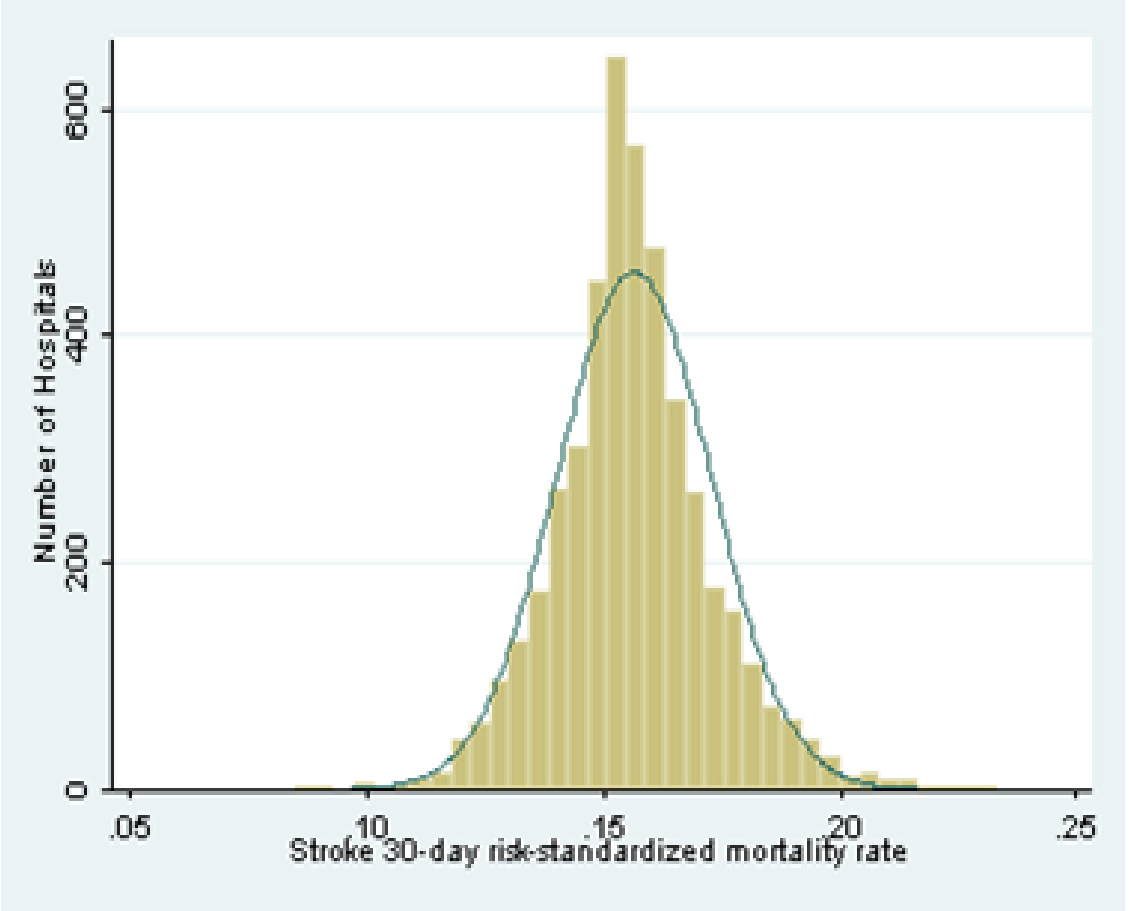
Data sources

- Dry run results derived from January 1, 2009 to December 31, 2011.

- Identified stroke centers using the full list of Get with the Guidelines (GWTG) Certified Primary Stroke Centers and The Joint Commission (TJC) Certified Primary Stroke Centers provided to CMS.
  - Stroke Centers = GWTG and/or TJC certified
  - Non-Stroke Centers = neither GWTG nor TJC certified

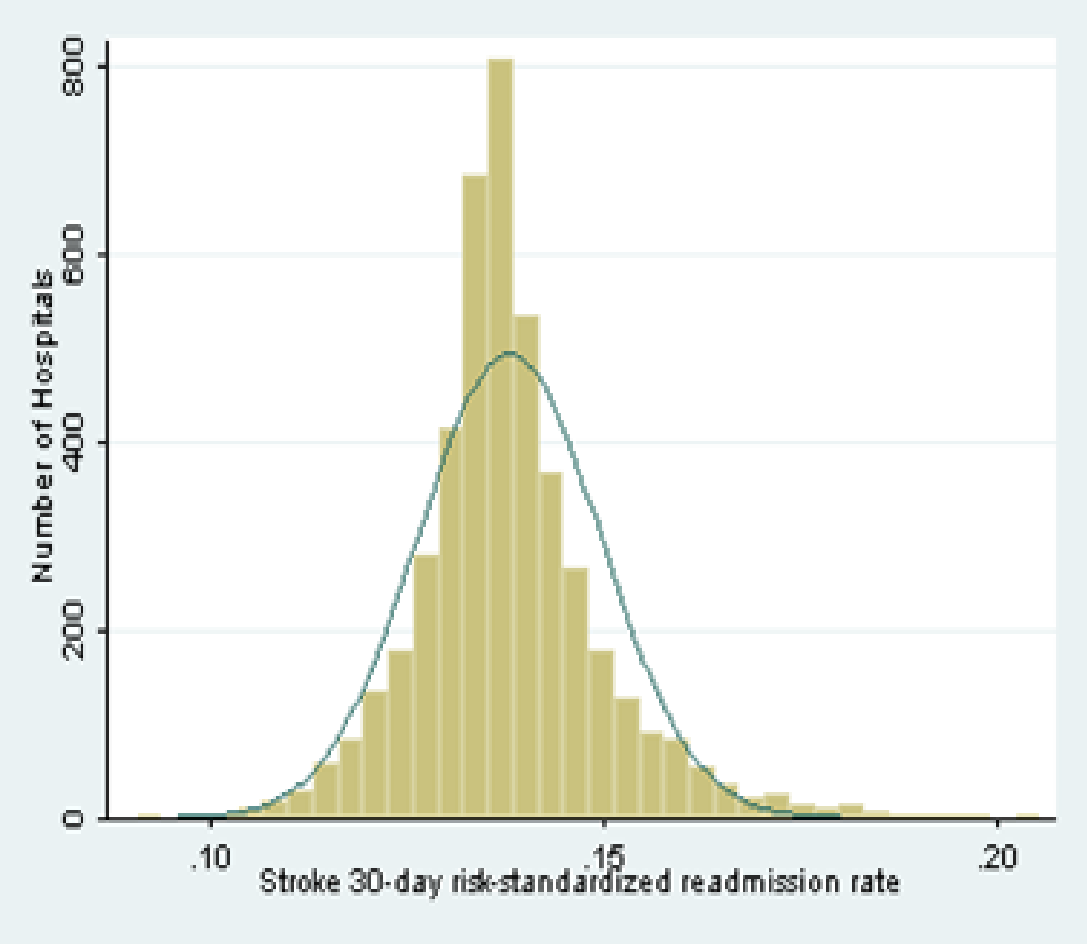
Results: Stroke Mortality

- National Risk Standardized Mortality Rate: (RSMR): 15.6%.
- Hospital RSMR range: 8.5%-23.3%.



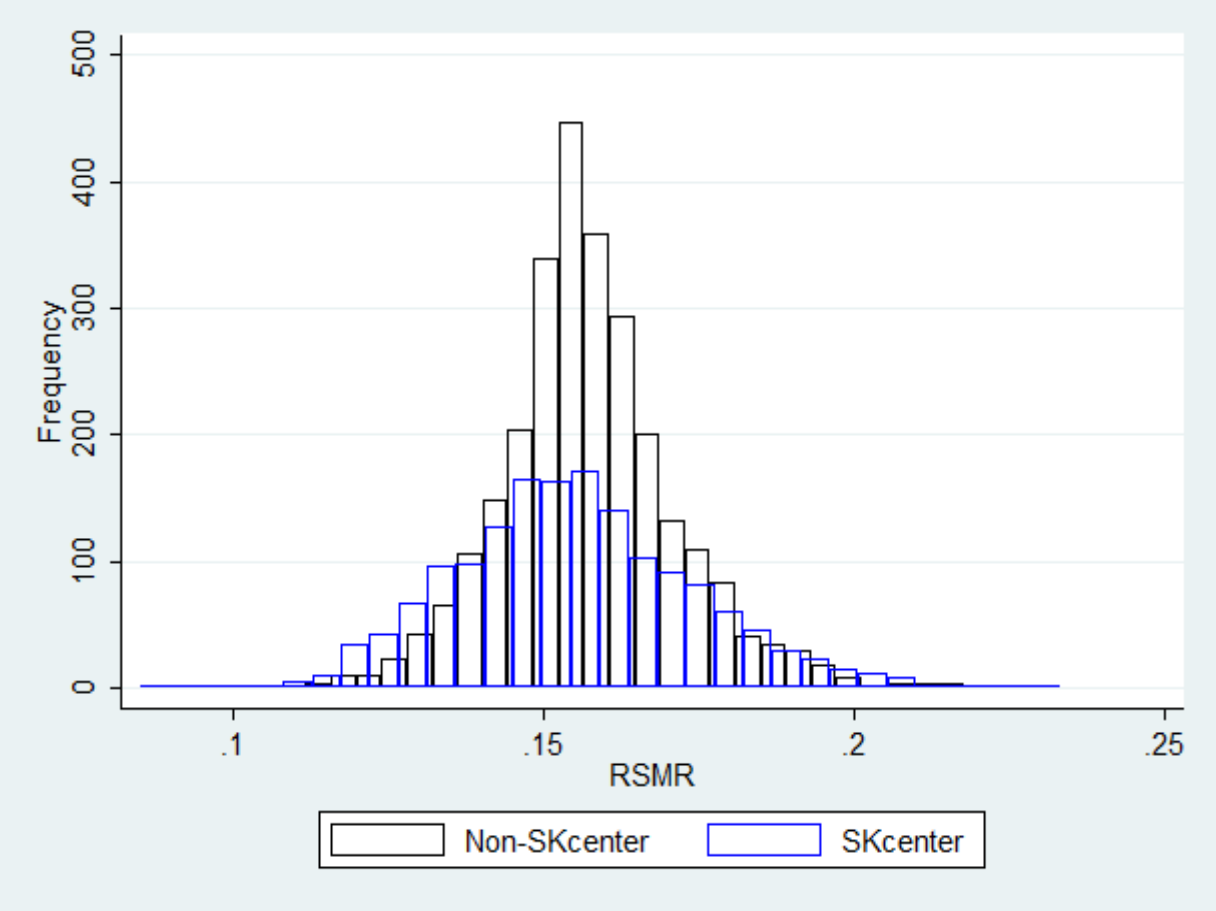
Results: Stroke Readmission

- National Risk Standardized Readmission Rate (RSRR): 13.8%.
- Hospital RSRR range: 9.1%-20.6%.



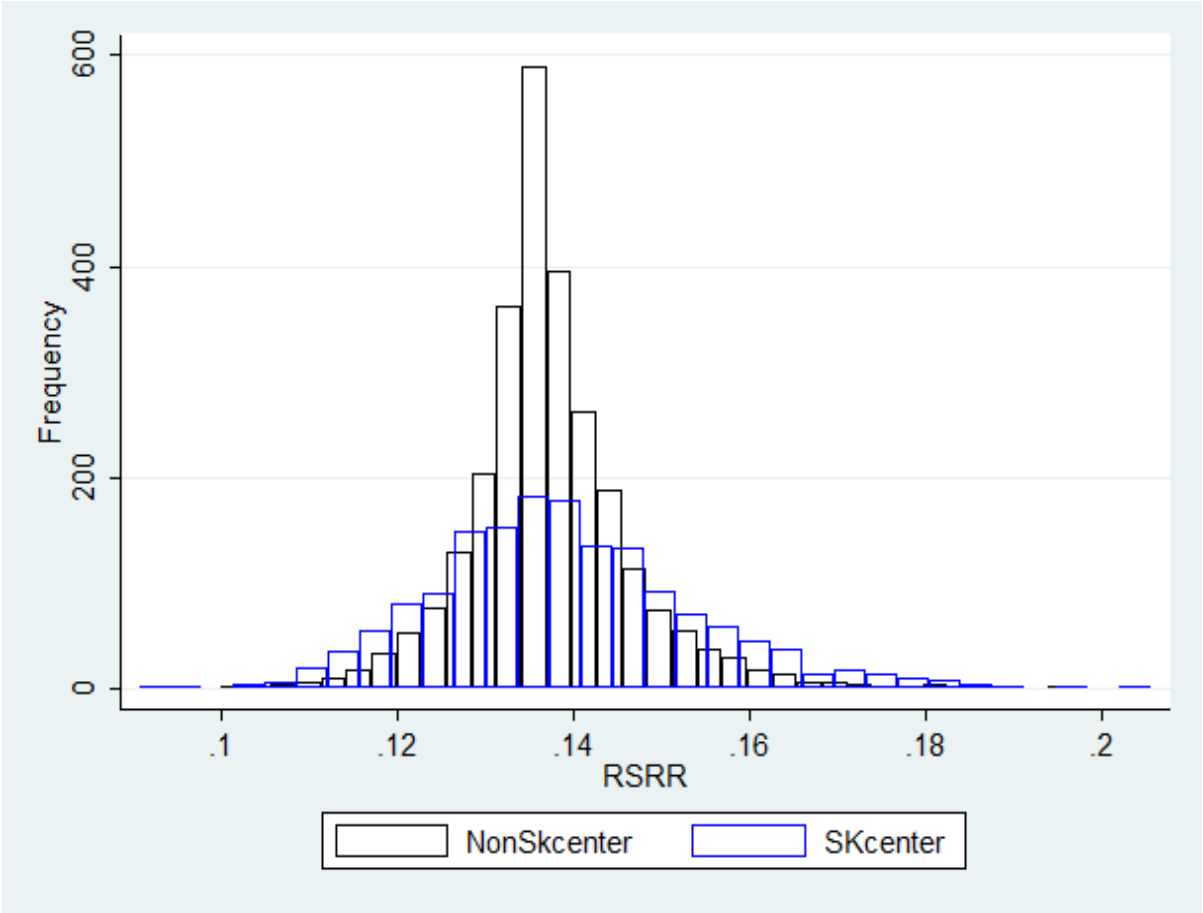
Hospital-level distribution of RSMRs across stroke centers vs. non-stroke centers

- Overall the distribution of results for stroke centers and non-stroke centers is very similar.



Hospital-level distribution of RSRRs across stroke centers vs. non-stroke centers

- Overall the distribution of results for stroke centers and non-stroke centers is very similar.



Stroke Mortality measure performance categories by stroke center status

- Among hospitals with sufficient case volume for public reporting, a higher percentage of stroke center hospitals are considered outliers of any kind (i.e., worse or better than non-stroke centers).

Stroke Center Status	Non-Stroke Center % (N)	Stroke Center % (N)
Number of cases too small (volume < 25)	1308	98
Number of hospitals	2733	1610
Worse than the national rate	1.5% (21)	4.7% (71)
Better than the national rate	1.3% (19)	4.1% (62)
No different than the national rate	97.2% (1385)	91.2% (1379)

Stroke Readmission measure performance categories by stroke center status

- Among hospitals with sufficient case volume for public reporting, a higher percentage of stroke center hospitals are considered outliers of any kind (i.e., worse or better than non-stroke centers).

Stroke Center Status	Non-Stroke Center % (N)	Stroke Center % (N)
Number of cases too small (volume < 25)	1332	122
Number of hospitals	2706	1610
Worse than the national rate	0.9% (13)	4.1% (61)
Better than the national rate	0.4% (5)	1.4% (21)
No different than the national rate	98.7% (1356)	94.5% (1406)

NQF MAP Hospital Workgroup 11-12 DEC 2013
Concerns regarding Measure Concept: High-acuity care visits after outpatient colonoscopy procedure

Issue

- During review of the measure concept "high acuity care after outpatient colonoscopy procedures", the MAP Hospital Workgroup (MAP) identified three issues:
    - The impact of the Medicare 3-day payment window policy on the measure score.
    - The inability of ambulatory surgical centers (ASCs) to track patient outcomes.
    - The limited information available on the measure specifications testing and validation results at the time of MAP review.

Background

The Centers for Medicare & Medicaid Services (CMS) and the measure developer Yale New Haven Health Services Corporation—Center for Outcomes Research and Evaluation (CORE) sought NQF Measure Applications Partnership Hospital Workgroup (MAP) support for a quality measure concept of high acuity care after outpatient colonoscopy procedures. The measure concept /measure was proposed for use in the HOQR and ASCQR programs, and uses claims data.

1. IMPLICATIONS OF THE MEDICARE 3-DAY PAYMENT WINDOW POLICY

MAP Concern

- The MAP noted that colonoscopies performed at hospital outpatient departments (HOPDs) are affected by the Medicare 3-day payment window policy. Under the policy, no separate HOPD claim is submitted for patients who undergo HOPD colonoscopy and are subsequently admitted to the same hospital within three days.
- Specifically, the MAP raised the concern that, given this policy, using HOPD claims to identify HOPD colonoscopies will lead to:
    a. Underreporting of outcomes for colonoscopies performed in the HOPD setting.
    b. An inability to compare the measure score across both types of facilities (HOPDs and ASCs).

CMS Response

- The Medicare 3-day payment window policy states that outpatient services (all diagnostic services including colonoscopy) provided by a hospital or any Part B entity wholly owned or wholly operated by a hospital (such as a HOPD) in the three calendar days preceding the date of a beneficiary's inpatient admission are deemed to be related to the admission.
- As a result of this policy, a facility claim for certain HOPD services that result in near-term complications and require inpatient hospitalization is not generated (the facility claim is bundled with the inpatient claim).
- <u>However, there are two alternative ways to identify affected HOPD colonoscopies:</u>
    1. <u>Using the Medicare Part B physician claim.</u> A physician claim for the outpatient colonoscopy is still submitted.
    2. <u>Using a unique new indicator on the claim</u>. Since January 2012 a modifier, "PD," has been used to indicate that the colonoscopy is rolled up into a hospital admission.
- CMS appreciates the comment, and has worked with Yale CORE to develop an approach that uses the physician claim to identify colonoscopies affected by the 3-day payment window

policy and attribute the colonoscopy to the appropriate HOPD facility. The revised approach would:

1. Identify colonoscopies performed in the HOPD setting affected by the 3-day payment window policy.
    a. For claims before 2012, identify colonoscopies with Medicare Part B file physician claims for colonoscopy in the HOPD setting AND inpatient admissions ≤3 days AND no corresponding HOPD facility claim.
    b. For datasets from 2012 forward, use the modifier, "PD," to directly identify colonoscopies affected by the 3-day payment window.
2. Attribute the colonoscopies identified as affected by this policy to the appropriate HOPD facility using the facility's provider identification (ID) from the inpatient file. The physician claim cannot be used for this purpose as it only contains the physician's National Provider Identifier (NPI) and does not contain a facility ID.

- Our testing shows that almost all HOPD colonoscopies can be identified and attributed to the corresponding HOPD facility using this approach**.**
- For claims submitted during or after 2012, we will use the "PD" code to directly identify affected HOPD colonoscopy claims. This would further reduce the number of colonoscopy outcomes that cannot be assigned to an HOPD.

2. THE ABILITY OF ASCs TO FOLLOW-UP WITH PATIENTS

MAP Concern and Public Comment

- Review by the MAP (and comments received during the MAP comment period) raised concerns that the measure would place undue burden on ASCs to identify patient outcomes and provide follow-up care.
- Specifically, comments noted that ASCs cannot provide care beyond 24 hours or access clinical records of patients who receive subsequent post-procedural care in emergency departments or inpatient admissions.

CMS Response

- We note that the colonoscopy measure uses linked claims data to capture unplanned hospital visits following outpatient colonoscopy procedures; actual follow-up of patients is not required by individual ASCs.
- We acknowledge that patient follow-up is often difficult and that the scope of ASC practice is limited. However, the measure is designed to measure outcomes from the patient's perspective. Therefore, it is critical that this quality measure fully capture post-procedure outcomes across settings. It is well known that providers performing colonoscopy procedures often under-report adverse outcomes that result from these procedures. Underreporting occurs in part because providers lack information about patients seeking follow-up care from other providers in settings such as a hospital emergency departments, this is the gap in information the measure seeks to address.
- We believe that the proposed colonoscopy measure concept, which fully captures unplanned hospital visits following an outpatient colonoscopy, will facilitate quality improvement by helping to fill this gap. Specifically, the measure will enable ASCs and HOPDs to:

  - Track adverse events after colonoscopy and thereby monitor the quality and safety of the care they provide;
  - Understand their performance relative to other providers; and
  - Identify opportunities that could lead to improvements and changes in patient care.
- In addition to its facility-level measure score, CMS will consider the availability of patient-level data on all patients included in the measure score (similar to the data CMS provide hospitals for the CMS 30-day outcome measures) to assist with tracking and improvement efforts. The data would be provided through a secure method.
- In summary, we believe the measure will facilitate the development and maintenance of an ongoing, data-driven approach to colonoscopy quality assessment and performance improvement without burdening providers.

3. LIMITED INFORMATION AVAILABLE ON MEASURE SPECIFICATIONS, INCLUDING TESTING AND VALIDATION, AT THE TIME OF MAP REVIEW

CMS Response

- The colonoscopy measure is presently undergoing final stages of development and testing; only a brief measure description was provided to the MAP.
- The measure concept was submitted for MAP support during measure development because CMS requires MAP review for any measures that it intends to submit for NQF endorsement in the upcoming year. We anticipate completing the measure at the end of January 2014; CMS expects to submit the measure for NQF endorsement thereafter.
- CMS posted more detailed preliminary measure specifications for public comment from November 18- December 06, 2013, and CORE is working with CMS to address the comments. Some testing is still pending.

Summary of NQF MAP Hospital Workgroup concerns for the Hospital-Wide Readmission (HWR) measure in the Hospital Readmission Reduction Program (HRRP).

Concerns with HWR in HRRP	CMS Response
1. Double Dinging: Using HWR with condition specific readmission measures. Potential remedy from workgroup: a. Adjust payment structure i. Measures with a different payment structure such as weighting based on the measure performance. b. Adjust measures in HRRP: i. Have only HWR ***OR*** ii. Have HWR + condition Specific readmission measures.	CMS appreciates the workgroup's concerns and recommendations. CMS will look into the feasibility of this recommendation.
2. Current Payment structure is purely punitive in nature. Further the payment structure does not have a baseline – below which payment reduction will not occur. Without a baseline, each year a certain % of hospitals will have reduced payment if they are worse than the national rate.	CMS appreciates the workgroup's concerns. We note that we are operating within the current legislative boundaries of the HRRP. Changes to payment structure may require legislative changes.
3. Very concerned of the unintentional consequence of a negative financial impact on hospitals with a disproportionate number of low SES patients.	CMS appreciates this concern. We note that this concern was addressed during the 2012 endorsement of the HWR measure. During the endorsement process we presented the following (see ***Appendix 1***): • Using Medicaid patients as a proxy for low SES patients, analyses showed that hospitals serving high proportions of Medicaid patients achieved a similar range of performance as compared to hospitals with low proportion of these patients. • The results indicate that hospitals can perform well on readmission measures regardless of having either a high or low proportion of Medicaid patients.
4. Very concerned of the unintentional consequence of causing already financially strapped hospitals to close down as a result of performing poorly on the readmission measures.	CMS appreciates this concern. We note that prior analyses shoed hospital performance is essentially unchanged when SES is added to the risk model (see ***Appendix 2***).

Concerns with HWR in HRRP	CMS Response
5. Very concerned of the unintentional consequence of increasing observation stays with the institution of HWR measure.	CMS appreciates this concern. As previously outlined in prior IPPS Final Rules, we have, and will continue to monitor hospitals for this potential trend to increase observation stays as a mechanism to avoid readmission of patients and therefore avoid poor performance on readmission measures. Post-discharge observation stays after acute myocardial infarction (AMI), heart failure (HF), and pneumonia hospitalization are increasing but overall usage remains low. There is no evidence that large numbers of hospitals are systematically substituting observation stays for readmissions (see ***Appendix 3***).
6. For the following reasons some hospitals don't support HWR: a. CMS needs to better educate hospitals on how to use HWR RSRRs in order to improve their HWR RSRRs. b. Hospitals don't know how to take an all cause measure and identify where the areas of poor performance are occurring.	CMS appreciates this concern. We note in prior Inpatient Prospective Payment (IPPS) final rules that hospital specific reports (HSRs) are provided to hospitals to guide them with interpretation of their readmission rates. CMS also provides hospitals substantial information about their performance on the HWR measure which helps them to interpret performance and guide quality improvement: • First, hospitals receive information on their performance of the 5 different clinical cohorts, which were designed specifically to align with hospital service lines. • Secondly, hospitals receive in their HSRs detailed information about every readmitted patient including their principal discharge diagnosis and where they were readmitted. • Third, hospitals have access to CMS and the measure developer to ask questions about their RSRRs. We have also attached three documents to illustrate the educational materials provided to the hospitals when reviewing their HSR (see ***Appendix 4***). 1. Mock HSR: see attached pdf entitled "DryRun_HWR_MockHSR_091312". a. Table of contents includes multiple sections including

Concerns with HWR in HRRP	CMS Response
	background, how to use the HSR, whom to contact for questions. b. Places a specific hospital's RSRR in context with hospitals in the state and nationally (Figure 1). 2. Mock Discharge Level File (DLF): see attached excel workgroup entitled "DryRyn_HWR_DLF_082212". a. DLF provides more specific information on how a hospital performs. b. Contains hospital specific discharge level information (see excel worksheet "Discharge-level data"). c. Contains hospital specific and national data by 5 cohorts: Medicine, Surgery/Gynecology, Cardiorespiratory, Cardiovascular and Neurology (see worksheet entitled "Case and Service Mix Comparison". d. Finally, there is a worksheet "Impact of Risk Factors" to aide hospitals in assessing the specific case mix noted in each of the 5 cohorts. 3. Instructions on how to use the excel Discharge Level File (DLF): see attached pdf entitled "HWR_DLF_instrctns_v1 0_082812.
4. Could CMS provide an example of how to interpret HWR RSRRs? For example, could CMS identify 2 hospitals and create a folder of RSRRs from HWR and condition specific readmission measures to show hospitals how to use the information to help them identify where they could improve their care to decrease their RSRR's.	CMS appreciates this recommendation. We have provided in **Appendix 4** an HSR example to illustrate the information provided to hospitals to guide them on how to interpret their HWR RSRR.

***Appendix 1*:** Summary of acute myocardial infarction, heart failure and pneumonia RSRRs for hospitals with high and low proportion of Medicaid Patients (see pages 47, 49, and 51 of attached entitled "ChartbookSESanalyses_121913).

***Appendix 2*:** Summary of Hospital performance with and without SES risk-adjustment (see pages 35-36 of attached entitled "ChartbookSESanalyses_121913).

***Appendix 3*:** Summary of acute myocardial infarction, heart failure and pneumonia RSRRs and use of observation stays (see pages 54-59 of attached entitled "ChartbookOBSanalyses_121913).

***Appendix 4*:** For hospital specific reports and the information provided to hospitals please see attachments entitled:

1. "DryRun_HWR_MockHSR_091312".
    a. Table of contents includes multiple sections including background, how to use the HSR, whom to contact for questions.
    b. Places a specific hospital's RSRR in context with hospitals in the state and nationally (Figure 1).
2. Mock Discharge Level File (DLF): see attached excel workgroup entitled "DryRyn_HWR_DLF_082212".
3. Instructions on how to use the excel Discharge Level File (DLF): see attached pdf entitled "HWR_DLF_instrctns_v1 0_082812.

CMS Dry Run Hospital-Specific Report

for

Hospital-Wide All-Cause Unplanned Readmission (HWR) Measure

September 2012

GENERAL HOSPITAL
Provider ID: 999999
ST

Note: This mock report for select claims-based measures has been created from simulated data. All national-level data in this mock report are accurate, and all report sections are identical to hospital-specific reports received by hospitals. However, all hospital-level data are simulated and do not depict accurate data reflective of any hospital's actual experience. The format of the tables in this report may differ than those provided to hospitals in their HSRs. CMS changed the format of the tables in this HSR to make them accessible to readers with disabilities.

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How to Use this Report

The purpose of this Hospital-Specific Report is to provide your hospital with its Hospital-Wide All-Cause Unplanned Readmission (HWR) measure (National Quality Forum [NQF] #1789) results. You can also access your discharge-level data and risk factor Excel® file and review the data used by the Centers for Medicare & Medicaid Services (CMS) to produce the results. The Hospital-Specific Report is divided into two chapters:

- **Chapter I: Introduction and Background** – provides an overview of the key steps and goals of the dry run, an overview of the measure, and a description of the hospitals that are included in the measure.

- **Chapter II: Hospital-Wide All-Cause Unplanned Readmission (HWR) Measure and Results** – includes three sections that describe the measure methodology and your hospital's results:
  - **Section 1: Overview of Methodology** – provides an overview of the methodology used to calculate measure results and a summary of the measure specifications.
  - **Section 2: HWR Measure Results at a Glance** – provides an overview of your hospital's performance on the measure and a summary of overall hospital performance nationally and within your state.
  - **Section 3: Detailed Results for the HWR Measure** – contains additional details about your hospital's results including the range of performance for hospitals in your state and measure statistics such as the crude (unadjusted) rates and associated numerators and denominators for your hospital, your state, and the nation.

Additionally, the appendix of common terms will assist you with interpreting your results:

- **Appendix A: Common Terms in Hospital-Specific Report** – defines the technical terms presented in blue underline throughout the Hospital-Specific Report.

Reviewing Your Discharge-Level Data and Risk Factor Information

A discharge-level data and risk factor Excel® file, which provides details for each readmission counted in the measure, is also available to your hospital. This file includes detailed information on the impact of patients' risk factors on risk-standardized readmission rates and case mix and service mix information for your patients compared with all the hospitals in the U.S. Instructions for how to read and interpret the Excel® file

are also available. The files are available through the *My QualityNet* tab on *www.QualityNet.org*.

Contacts and Additional Resources

This Hospital-Specific Report includes only the most pertinent information for hospitals regarding their results. To find more information, you can visit the Hospital-Wide Readmission measure page on *QualityNet*.

Here you will find links to:

- Dry run timeline
- Measure fact sheet
- Frequently asked questions (FAQs)
- Measure final technical report (describing detailed methodology)
- Mock Hospital-Specific Report and mock discharge-level data and risk factor Excel® file

You can also access your hospital-specific discharge-level data and risk factor Excel® file by visiting the *My QualityNet* tab.

If you have questions about your Hospital-Specific Report, the HWR measure, or how to access your data, please submit them to:
hospitalwidereadmission@yale.edu

PLEASE DO NOT EMAIL OR ATTACHED TO EMAILS PATIENT IDENTIFIABLE INFORMATION (E.G., DATE OF BIRTH, SSN, HIC NUMBER) TO THIS INBOX.

Chapter I. Introduction and Background

1. Introduction and Background

1.1 September 2012 Dry Run

In an ongoing effort to improve the quality of the nation's hospitals, CMS has added a hospital-wide readmission measure to the Inpatient Quality Reporting (IQR) program. CMS currently reports similar risk-standardized 30-day readmission and mortality measures for Medicare Fee-for-Service (FFS) patients hospitalized for acute myocardial infarction (AMI), heart failure (HF), and pneumonia on the CMS website *Hospital Compare*.

This dry run of the hospital-wide readmission measure will allow hospitals to become familiar with the measure and their performance prior to CMS' use of the measure in public reporting. The measure detailed in this report is titled, "Hospital-Wide All-Cause Unplanned Readmission (HWR) Measure" (NQF #1789). CMS is providing detailed results for the measure. The dry run will allow hospitals to review the data used to calculate the measure, inform hospitals on how to interpret their measure results, and provide an opportunity for hospitals to ask questions about the measure. The measure results are presented using data from the calendar year 2010.

You can review your measure results and other dry run resources through *QualityNet*. The dry run consists of three main components:

1. *Hospital-Specific Report and discharge-level data and risk factor Excel® file*: CMS is providing hospitals with this Hospital-Specific Report to assist them with interpretation of the measure and of their results. The Hospital-Specific Report contains detailed hospital results, along with state and national results, and provides an overview of the measure methodology. CMS is also providing hospitals with an Excel® file containing discharge-level data for all readmissions and detailed risk factor information via *My QualityNet*. CMS encourages hospitals to review their Hospital-Specific Reports and discharge-level data and risk factor files thoroughly. CMS will work with hospitals during this dry run to help them understand the measure and their data, and to answer questions. In past dry runs, feedback from hospitals, Quality Improvement Organizations (QIOs), and other stakeholders contributed to enhancement of the measure methodology.

2. *National provider call*: CMS will hold a national call to present measure information and answer questions from hospitals and other stakeholders. CMS strongly encourages hospitals to participate in the national provider call and to ask questions.

3. *Q&A*: CMS will receive and respond privately to hospital and stakeholder questions and comments via email (hospitalwidereadmission@yale.edu).

The timeline for the dry run is available on *QualityNet*.

1.2 Measure Overview

The HWR measure includes Medicare FFS beneficiaries aged 65 years or older who were discharged from the hospital during the 2010 calendar year. Similar to the publicly reported readmission measures, this measure is based on administrative claims data. For each hospital, the HWR measure estimates a risk-standardized readmission rate (RSRR) based on unplanned readmissions to any hospital, for any cause, within 30 days of discharge. The RSRR is derived from the weighted mean of the results of five specialty cohort models. The measure adjusts for each hospital's case mix (patient age and comorbidities), so that hospitals that care for older, sicker patients are on a "level playing field" with those hospitals serving healthier patients. The measure also adjusts for service mix (discharge diagnosis category), accounting for differences in the types of conditions and procedures cared for by hospitals. See Chapter II and the measure technical report posted on *QualityNet* for more details. The measure was endorsed by the NQF in 2012.

1.3 Hospitals Included in the Measure

The HWR measure is calculated for all non-federal short-stay acute-care hospitals and critical access hospitals. Prospective payment system (PPS)-exempt cancer hospitals and PPS-exempt psychiatric facilities and units are excluded from the measure.

Chapter II. Hospital-Wide All-Cause Unplanned Readmission (HWR) Measure and Results

1. Overview of Methodology

This section of the Hospital-Specific Report presents an overview of measure methodology and specifications. For a detailed description of the full methodology and specifications, please see the measure technical report posted on *QualityNet*.

In brief, the HWR measure uses Medicare FFS claims for patients aged 65 years or older to estimate for each hospital a single composite score of risk-standardized all-cause, unplanned readmission within 30 days of hospital discharge. The measure includes admissions for all conditions and procedures except those specified in the exclusions (see Table 1). All readmissions are counted in the outcome unless they are identified as planned. Admissions are assigned to one of five mutually exclusive specialty cohort groups consisting of related conditions or procedures:

- Medicine
- Surgery/gynecology
- Cardiorespiratory
- Cardiovascular
- Neurology

For more details on how admissions are assigned to specialty cohort groups, please visit *QualityNet*.

The measure uses hierarchical logistic regression to adjust for differences in hospital case mix and service mix, and to account for the clustering of patients within a hospital. The measure adjusts for case mix differences among hospitals by risk adjusting for patients' comorbid conditions identified in patients' admissions for the 12 months prior to the index admission as well as those present at admission that are not due to complications. The measure also adjusts for service mix differences among hospitals by adjusting for the discharge diagnosis category of each index admission. For a complete list of risk factor coefficients and detailed information on the impact of patients' risk factors on risk-standardized readmission rates, please see the discharge-level data and risk factor Excel® file under the *My QualityNet* tab on *QualityNet*.

A separate risk model is built for each specialty cohort group, and the hospital-wide composite score is derived from the results of the five models. Specifically, each of the five risk models is used to calculate a standardized readmission ratio (SRR) of predicted readmissions over expected readmissions for each hospital. An average-performing hospital will have an SRR equal to one for that cohort of patients. Hospitals performing

better than expected will have an SRR less than one, and hospitals performing worse than expected will have an SRR greater than one.

The SRRs, weighted by volume, are pooled for each hospital to create the hospital-wide composite SRR. Each hospital's hospital-wide composite SRR is multiplied by the U.S. national crude readmission rate to produce the hospital's measure score, the 30-day risk-standardized readmission rate. The national readmission rate for the performance period included in the dry run is 16.8%. Each estimate is also reported with an interval estimate (similar to a confidence interval). Table 1 contains an overview of the HWR measure specifications and methodology.

To increase measure reliability, CMS plans to publicly report an RSRR under the IQR program only if the hospital has at least 25 cases for the measure calculation. However, consistent with how CMS approaches public reporting for similar measures, CMS is including an RSRR in the Hospital-Specific Report regardless of the sample size so that hospitals can review the estimate of their RSRR. To inform quality improvement, CMS is also providing the specialty cohort SRRs in this Hospital-Specific Report when the hospital has 25 or more cases in the specialty cohort. If there are fewer than 25 cases in the specialty cohort, the SRR will still contribute to the hospital-wide composite score. However, CMS will not provide the specialty cohort SRR in the Hospital-Specific Report because there are too few cases to ensure its reliability.

CMS is using the same approach for assigning RSRR performance categories as that used with the publicly reported AMI, HF, and pneumonia measures. CMS uses the interval estimate to classify each hospital's performance as better than, no different than, or worse than the U.S. national rate. If the hospital has fewer than 25 cases hospital-wide, CMS reports instead that the number of cases is too small (fewer than 25) to reliably tell how well the hospital is performing (see Table 2 and Table 3).

Table 1. Overview of HWR Measure Specifications and Methodology

	Measure Feature	Description
Outcome Definition	Timeframe	The measure uses a 30-day outcome timeframe. The 30-day period begins at discharge.
	All-cause Readmission	The measure includes readmissions for all causes, regardless of the principal discharge diagnosis of the readmission.
	Unplanned Readmission	The measure does not count planned readmissions as part of the outcome.
	Counting Readmissions as Index Admissions	A readmission is also eligible as an index admission, if it meets all other eligibility criteria.
Cohort	Inclusion Criteria	• Patient is aged 65 years or older • Patient survives hospitalization • Patient is discharged home or to a non-acute setting
	Exclusion Criteria	• Admissions for patients without at least 30 days of post-discharge enrollment in Medicare FFS • Admissions for patients not continuously enrolled in Medicare FFS for the 12 months prior to the index admission • Patients discharged against medical advice • Admissions to PPS-exempt cancer hospitals • Admissions for medical treatment of cancer • Admissions for primary psychiatric disease • Admissions for rehabilitation care, fitting of prostheses and adjustment devices
	Specialty Cohort Models	Admissions are assigned to one of five mutually exclusive specialty cohorts built for groups of admissions that are clinically related: • Medicine • Surgery/gynecology • Cardiorespiratory • Cardiovascular • Neurology The medicine, cardiorespiratory, cardiovascular, and neurology cohorts are defined by the 285 clinically meaningful, mutually-exclusive discharge diagnosis categories comprised of individual ICD-9-CM codes included the Agency for Healthcare Research and Quality (AHRQ) Clinical Classification Software (CCS) (www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp). The surgery/gynecology cohort is defined by mutually-exclusive *procedure* categories included in the AHRQ CCS. For more details on cohort assignment, please see *QualityNet*.

	Measure Feature	Description
Measure Calculation	Risk Adjustment	The HWR measure adjusts both for case mix differences (clinical status of the patient, accounted for by adjusting for comorbidities) and service mix differences (the types of conditions/procedures cared for by the hospital, accounted for by adjusting for discharge diagnosis category), as described in detail in the measure technical report on *QualityNet*. This measure does not adjust for risk variables only occurring during the index admission that are considered potential complications of care.
	Hierarchical Modeling	The measure uses hierarchical logistic regression to adjust for differences in hospital case mix and service mix, and to account for the clustering of patients within a hospital.
	Measure Score Calculation	The RSRR is derived from the weighted mean of the results of the five different specialty cohort models.

2. HWR Measure Results at a Glance

This section of the Hospital-Specific Report presents your hospital's performance on the HWR measure. The tables summarize your hospital's comparative performance, number of eligible admissions, the SRR and its associated interval estimates, the RSRR and its associated interval estimates, as well as the distribution of performance categories of all U.S. hospitals and hospitals in your state.

2.1 Categorizing Hospital Performance

To categorize hospital performance, CMS estimates each hospital's RSRR and the corresponding 95% interval estimate. The interval estimate represents the range of probable values of the rate. For example, a 95% interval estimate indicates that there is 95% probability that the true value of the rate lies between the lower limit of the interval and the upper limit. For more information on how the readmission rates are calculated, please see the measure technical report on *QualityNet*.

CMS assigns hospitals to a performance category by comparing each hospital's interval estimate to the national crude (unadjusted) readmission rate. Comparative performance for hospitals with at least 25 cases is classified as follows:

- "No different than U.S. national rate" if the 95% interval estimate surrounding the hospital's rate includes the national crude readmission rate.
- "Worse than U.S. national rate" if the entire 95% interval estimate surrounding the hospital's rate is higher than the national crude readmission rate.
- "Better than U.S. national rate" if the entire 95% interval estimate surrounding the hospital's rate is lower than the national crude readmission rate.

If a hospital has fewer than 25 cases, CMS assigns the hospital to a separate category: "The number of cases is too small to reliably tell how well the hospital is performing."

2.2 Your Hospital's Results

Table 2 displays your hospital's results for the HWR measure.

Table 2. Your Hospital's Performance on the HWR Measure

January – December 2010
GENERAL HOSPITAL

Your Hospital's Comparative Performance Category	Number of Eligible Admissions at Your Hospital	Your Hospital's Composite SRR (Lower Limit, Upper Limit of 95% Interval Estimate)	Your Hospital's Composite RSRR (Lower Limit, Upper Limit of 95% Interval Estimate)	State RSRR	U.S. National Crude Rate
No Different than U.S. National Rate	38	0.92 (0.82, 1.01)	15.4% (13.7%, 17.0%)	15.9%	16.8%

SRR = Standardized Readmission Ratio.
RSRR = Risk-Standardized Readmission Rate.
Hospital RSRR = Hospital Composite SRR * U.S. National Crude Rate.
The RSRR presented for the state is the weighted average of all hospitals' RSRRs in the state.
NA = No data are available from the hospital for this measure.
Number of Cases Too Small = Number of cases too small (fewer than 25) to reliably tell how well the hospital is performing. Rate will not be publicly reported under the IQR program.

2.3 State and National Results

Table 3 presents your hospital's comparative readmission performance as well as the distribution of hospitals by performance category in your state and the U.S. for the HWR measure for the period of January through December 2010.

Table 3. Comparative Performance for the HWR Measure

January – December 2010
GENERAL HOSPITAL, ST, National

Your Hospital's Comparative Performance Category	U.S. National Crude Rate		Better than U.S. National Rate	No Different than U.S. National Rate	Worse than U.S. National Rate	Number of Cases Too Small
No Different than U.S. National Rate	16.8%	Out of 4,821 hospitals in the **U.S.**, the number that performed…	298	3,959	428	136
		Out of 20 hospitals in the **STATE**, the number that performed…	0	20	0	0

NA = No data are available from the hospital for this measure.
Number of Cases Too Small = Number of cases is too small (fewer than 25) to reliably tell how well the hospital is performing. Rate will not be publicly reported under the IQR program.

3. Detailed Results for the HWR Measure

This section provides more information on the range of hospital performance in your state and the U.S., as well as additional measure statistics.

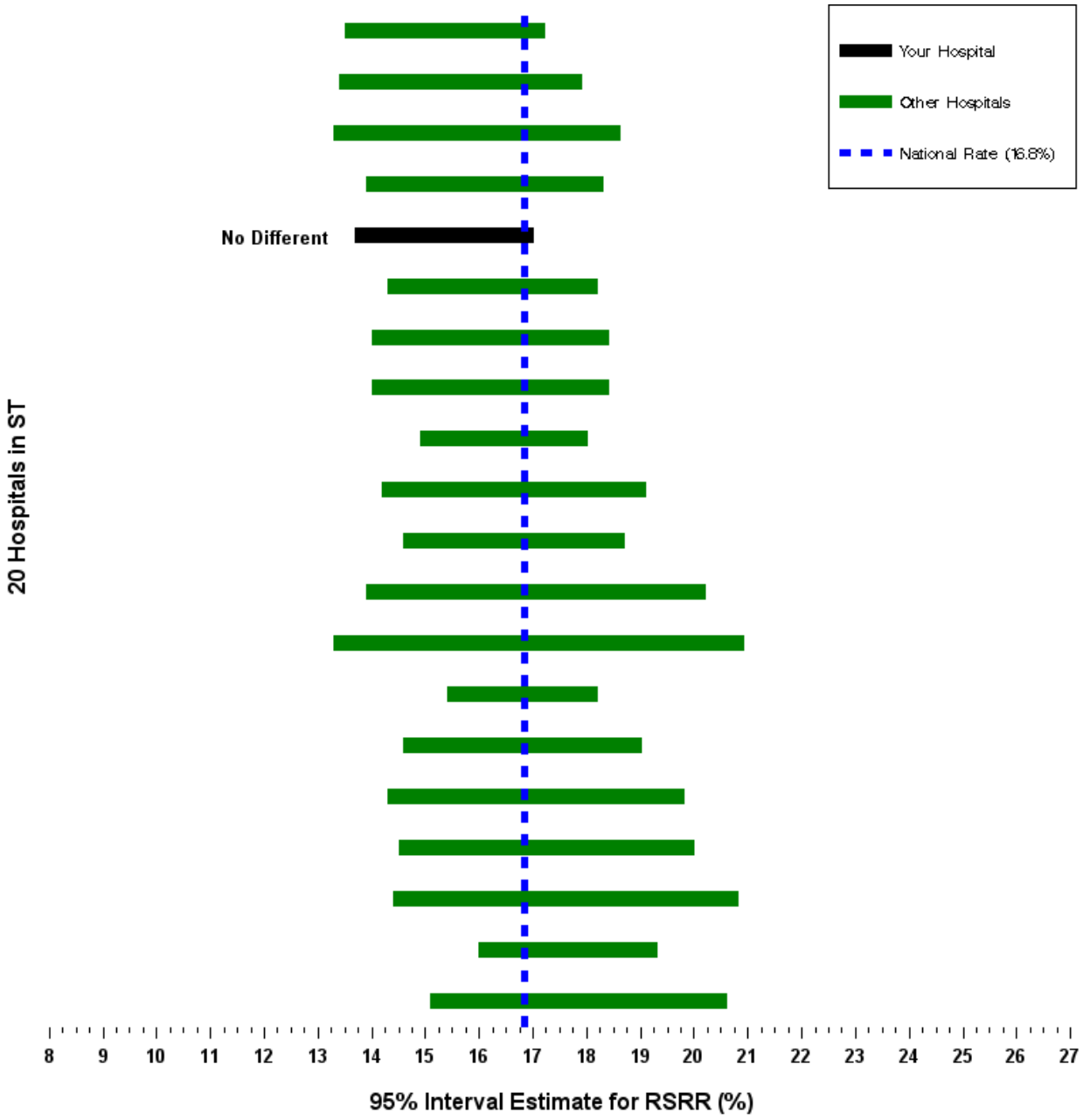
3.1 Range of Hospital Performance in Your State

Figure 1 displays the 95% interval estimates of the RSRRs for hospitals in your state – including your hospital – and compares them to the national crude readmission rate.

RSRRs should always be interpreted *along with* their interval estimates. The interval estimates in Figure 1 are not intended to provide a basis for direct hospital-to-hospital comparisons. Interval estimates should be compared to the national crude readmission rate. For more information on how the RSRR is calculated, how it should be interpreted, and how the model treats small volume hospitals, please refer to the Frequently Asked Questions posted on *QualityNet*.

The highlighted bar in each of the figures shows your hospital's interval estimate. If your hospital had no eligible cases, no highlighted bar appears. If your hospital had fewer than 25 cases, "Too Few Cases" will appear next to your highlighted bar. All other hospitals in your state have been de-identified to protect their confidentiality.

Figure 1. HWR Measure – 95% Interval Estimates for Hospitals in Your State



Lower Percentages Are Better

Note: The 95% interval estimate of each hospital's RSRR is represented by a horizontal bar. The single vertical line indicates the national readmission rate. The lower the readmission rate, the better the hospital performance. If the entire interval estimate (horizontal bar) falls to the left of the line representing the national rate, then fewer patients than expected were readmitted, and the hospital is performing better than the U.S. national rate. The highlighted horizontal bar is the RSRR interval estimate for your hospital. All other hospitals have been de-identified to protect confidentiality. If your hospital had no eligible cases, no highlighted bar will appear in this graph.

Too Few Cases = Number of cases too small (fewer than 25) to reliably tell how well the hospital is performing. Rate will not be publicly reported under the IQR program

3.2 Detailed Measure Statistics

Table 4 presents the crude 30-day readmission rates, along with SRRs, overall and for each of the five mutually exclusive specialty cohort models included in the measure (medicine, surgery/gynecology, cardiorespiratory, cardiovascular, and neurology). It also presents the numerator and denominator of the crude rates. SRRs are reported for each specialty cohort model for hospitals with at least 25 cases. Although SRRs are not reported for specialty models with fewer than 25 cases, all cases are used to compute the hospital-wide composite SRR and RSRR. The table also presents the number of planned readmissions, which are not counted as readmissions, for your hospital, your state, and the nation.

The numerator of the crude readmission rates is the number of admissions that are followed by an unplanned readmission to an acute care hospital within 30 days of discharge from the index admission. The denominator is the total number of index admissions included in the measure calculation. The crude rate is simply the numerator divided by the denominator. *The crude readmission rate is reported here for reference only. It has not been risk-adjusted to account for case mix and service mix differences across hospitals and should not be used to measure performance.*

Table 4. Detailed HWR Measure Score and Specialty Cohort Model Results

January – December 2010
YOUR HOSPITAL, State, National

	Setting	Total Number of Eligible Admissions	Total Number of 30-Day Unplanned Readmissions	Total Number of 30-Day Planned Readmissions	Crude Unplanned Readmission Rate	SRR (Hospital Lower Limit, Upper Limit of 95% Interval Estimate)
Hospital-wide composite	**Your Hospital**	38	5	2	13.1%	0.92 (0.82, 1.01)
	State	40,000	5,819	1,500	14.5%	0.95
	Nation	7,680,104	1,289,977	69,717	16.8%	1.00
Specialty Cohort Model The HWR composite SRR is calculated based on performance on the following specialty cohort models:						
Medicine	Your Hospital	26	3	2	11.5%	0.93 (0.75, 1.11)
	State	20,000	3,220	500	16.1%	0.97
	Nation	3,068,392	558,653	27,928	18.2%	1.00
Surgery/gynecology	Your Hospital	NA	NA	NA	NA	NA
	State	10,000	1,040	400	10.4%	0.92
	Nation	2,065,120	262,295	19,371	12.7%	1.00
Cardiorespiratory	Your Hospital	NA	NA	NA	NA	NA
	State	5,000	895	200	17.9%	0.97
	Nation	1,310,586	280,919	6,509	21.4%	1.00
Cardiovascular	Your Hospital	12	2	0	16.7%	NTS
	State	2,500	362	200	14.5%	0.97
	Nation	779,799	121,503	11,940	15.6%	1.00

	Setting	Total Number of Eligible Admissions	Total Number of 30-Day Unplanned Readmissions	Total Number of 30-Day Planned Readmissions	Crude Unplanned Readmission Rate	SRR (Hospital Lower Limit, Upper Limit of 95% Interval Estimate)
Neurology	Your Hospital	NA	NA	NA	NA	NA
	State	2,500	302	200	12.1%	0.97
	Nation	456,207	66,607	3,969	14.6%	1.00

NA = No qualifying cases available from the hospital.

NTS = Number of cases too small (fewer than 25) to reliably estimate SRR.

SRR = Standardized Readmission Ratio. The SRR presented for the state is the weighted average of all hospitals' standardized risk ratios in the state.

Appendix A. Common Terms in Hospital-Specific Report

Case mix: The particular illness severity and age characteristics of the patients with index admissions at a given hospital.

Comorbid risk variable: A variable in the risk-adjustment model intended to account for patient comorbid conditions or age. A risk variable may represent multiple conditions. Each condition is a group of ICD-9 diagnosis codes, as defined by the Centers for Medicare & Medicaid Services (CMS) Condition Category groups (CCs).

Crude readmission rate: The number of readmissions divided by the number of eligible cases. The crude readmission rates have not been risk-adjusted to account for patient differences, nor have adjustments been made to account for differences in sample sizes or hospital effect.

Discharge diagnosis: ICD-9 level code of the *principal* reason for hospitalization.

Discharge diagnosis category: A group of related discharge diagnosis ICD-9 codes (principal diagnoses), as grouped by the Agency for Healthcare Research and Quality (AHRQ) Clinical Classification Software (CCS).

Expected readmissions: The number of readmissions predicted by the hierarchical model among that hospital's patient population, accounting for patients' risk factors and the average of all hospital-specific effects in the nation. Used to calculate the RSRR.

Hierarchical logistic regression: A class of generalized linear models for clustered data. The model not only takes into account patient risk factors, but estimates a hospital-specific effect, an estimate of the average impact of being treated in a particular hospital on the likelihood of having an outcome (readmission).

Hospital-specific effect: An estimate of the average impact of being treated in a particular hospital on the likelihood of being readmitted.

Index admission: Any eligible admission to an acute care hospital assessed in the measure for the outcome (readmitted or not within 30 days).

Interval estimate: Similar to a confidence interval. The interval estimate is a range of probable values for the estimate that characterizes the amount of uncertainty associated with the estimate. For example, a 95% interval estimate for a readmission rate indicates that CMS is 95% confident that the true value of the rate lies between the lower limit and the upper limit of the interval.

Medicare Fee-for-Service (FFS): Original Medicare plan. Only beneficiaries in FFS, not in managed care (Medicare Advantage), are included in the measure.

Planned readmission: An intentional readmission within 30 days of discharge from an acute care hospital that is a scheduled part of the patient's plan of care. Planned readmissions are not counted as outcomes in this measure.

Predicted readmissions: The number of readmissions predicted by the hierarchical model among a hospital's patients, given the patients' risk factors and that hospital's hospital-specific effect. Used to calculate the RSRR.

Procedure category: A group of related procedure codes as grouped by the Agency for Healthcare Research and Quality (AHRQ) Clinical Classification Software (CCS).

Readmission: An admission to an acute care hospital within 30 days of discharge from an acute care hospital.

Risk-standardized readmission rate (RSRR): A readmission rate that has been adjusted for differences in case mix and service mix across hospitals and a hospital-specific effect. Derived from the weighted geometric mean of five specialty cohort models built for groups of admissions that are clinically related (medicine, surgery/gynecology, cardiorespiratory, cardiovascular, and neurology).

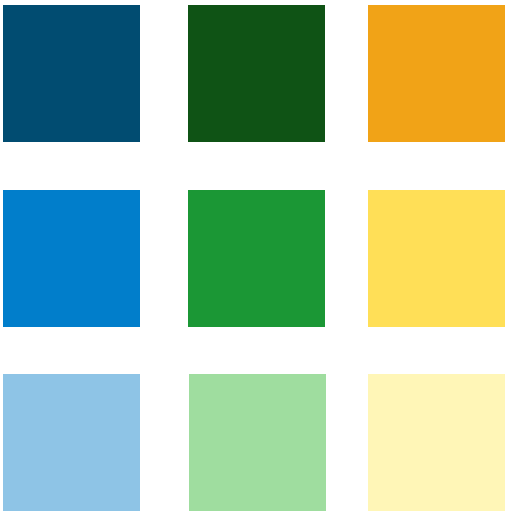
Service mix: The particular conditions and procedures of the patients with index admissions at a given hospital.

Specialty cohort: A group of index admissions for patients with related condition categories or procedure categories; this measure includes five cohorts (medicine, surgery/gynecology, cardiorespiratory, cardiovascular, and neurology), each with its own risk model.

Standardized readmission ratio (SRR): The ratio of predicted readmissions over expected readmissions.

Medicare Hospital Quality Chartbook 2012

Performance Report on Outcome Measures



Prepared by Yale New Haven Health Services Corporation
Center for Outcomes Research and Evaluation

September 2012

Does risk adjusting for socioeconomic status change hospital profiling on the AMI, heart failure, and pneumonia readmission measures?

Many stakeholders have asked CMS to consider risk-adjusting for socioeconomic status (SES). Including a marker of SES in the risk-adjustment model would obscure disparities, rather than illuminate them, and CMS has not supported this approach. To address this concern, the analysis below examines whether including a measure of socioeconomic status (SES) in the risk-adjustment model alters hospitals' performance on the publicly reported AMI, heart failure, and pneumonia readmission measures.

We defined our SES risk variable as whether or not an individual patient was enrolled in Medicaid ("dual eligible") and ran the model with and without this risk variable. To understand the impact of including this variable in the risk adjustment on hospital performance, we categorized hospitals into quintiles by the proportion of the hospital's patients who are dual eligible. We then compared hospitals' RSRRs with and without including the SES risk variable (patient-level dual eligible status) in the risk model (Table A.23).

The greatest difference in median RSRRs with and without adjusting for SES was 0.2 absolute percentage points for those hospitals with the highest proportion of dual eligible patients on the heart failure readmission measure. All other comparisons showed a 0.1 percentage point difference or less for the median hospital rate between the model that included SES in risk adjustment versus the model that did not.

Figure A.23a-c displays the RSRRs produced with and without SES in the risk model for the AMI, heart failure, and pneumonia measures, respectively. When SES was included as a risk-adjustment variable in the models, hospital performance changed very little. Although there was little overall change in RSRRs, including SES in the risk adjustment very slightly decreases RSRRs for those hospitals serving high proportions of low SES patients while simultaneously increasing RSRRs for those serving few low SES patients.

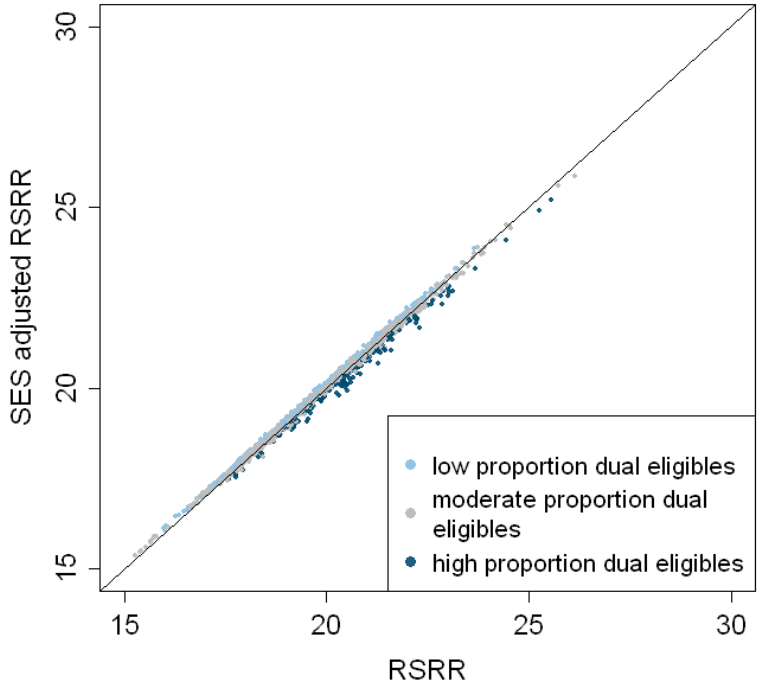
Risk adjustment for SES does not make a meaningful change in the assessment of hospitals' performance on the publicly reported AMI, heart failure, and pneumonia readmission measures.

Table A.23. Comparison of RSRRs With and Without Risk Adjustment for SES

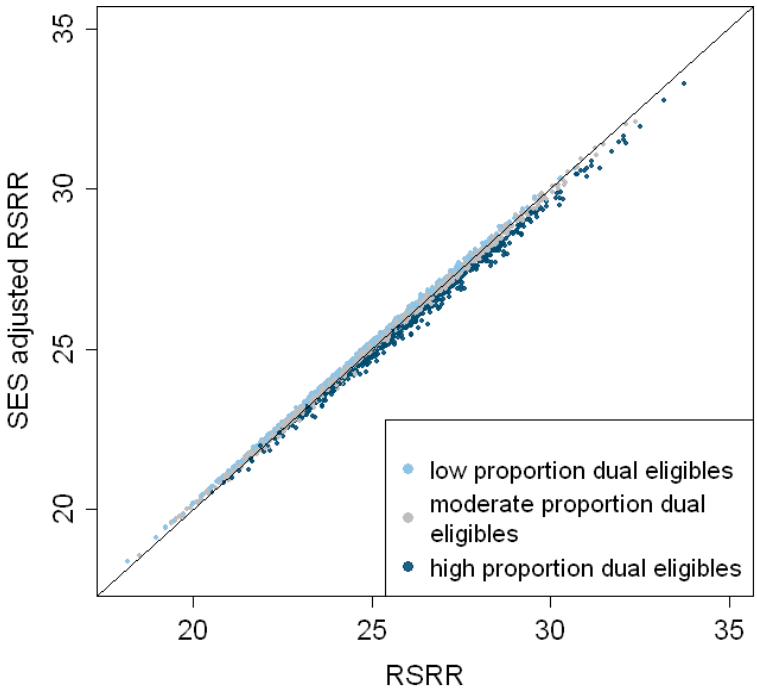
	AMI		Heart Failure		Pneumonia	
	RSRR without SES (%)	RSRR with SES (%)	RSRR without SES (%)	RSRR with SES (%)	RSRR without SES (%)	RSRR with SES (%)
Median hospital with a low proportion of dual eligible patients	19.5	19.6	24.3	24.4	18.1	18.1
Median hospital with a moderate proportion of dual eligible patients	19.8	19.8	24.6	24.6	18.2	18.2
Median hospital with a high proportion of dual eligible patients	20.2	20.1	25.5	25.3	18.7	18.6

Figure A.23. Risk-Standardized Readmission Rates vs. SES-Adjusted Risk-Standardized Readmission Rates

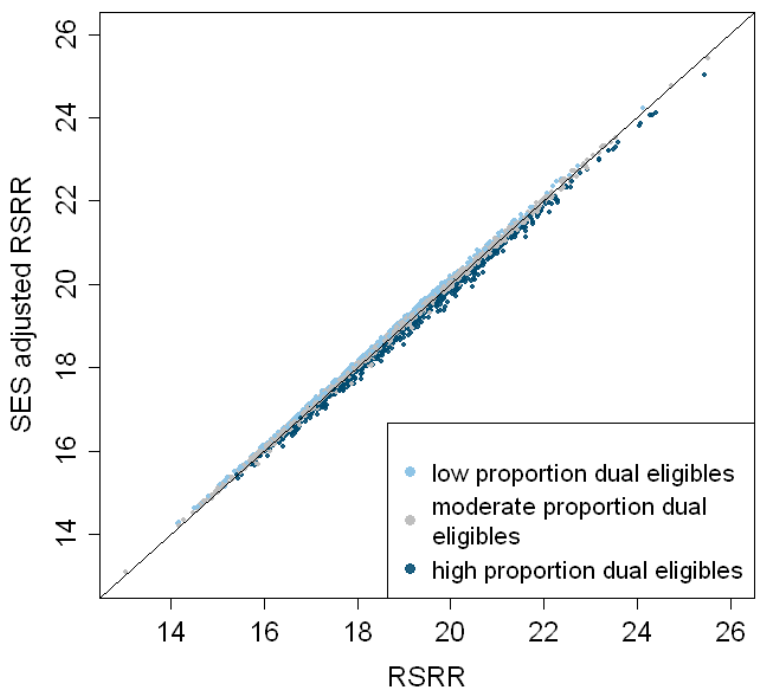
a. AMI



b. Heart Failure



c. Pneumonia



Source Data and Population: Measure-Specific RSRR Measure Cohorts—January 2008-December 2010 (Appendix I).

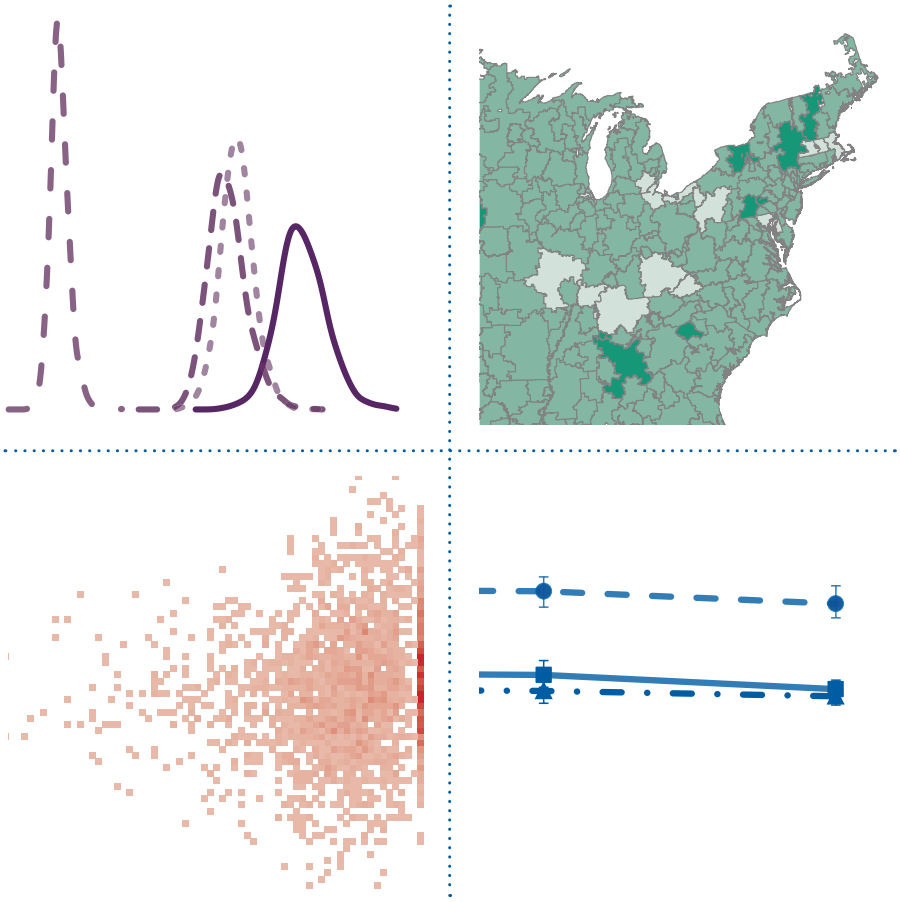
Notes: 1) Veterans Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) For AMI, hospitals in the lowest quintile had fewer than 8.3% dual eligible patients, while those in the top quintile had over 40.9% dual eligible patients. 4) For heart failure, hospitals in the lowest quintile had fewer than 12.3% dual eligible patients, while those in the top quintile had over 38.9% dual eligible patients. 5) For pneumonia, hospitals in the lowest quintile had fewer than 13.6% dual eligible patients, while those in the top quintile had over 40.1% dual eligible patients.

CMS
CENTERS FOR MEDICARE & MEDICAID SERVICES

Medicare Hospital Quality Chartbook

Performance Report on Outcome Measures

SEPTEMBER 2013



PREPARED BY

Yale New Haven Health Services Corporation
Center for Outcomes Research and Evaluation

CORE | CENTER FOR OUTCOMES RESEARCH AND EVALUATION

How do hospitals caring for high proportions of Medicaid or minority patients perform on the AMI mortality measure?

FIGURE A.2.1. *Distribution of AMI RSMRs for hospitals with the lowest and highest proportion of Medicaid patients, July 2009 – June 2012.*

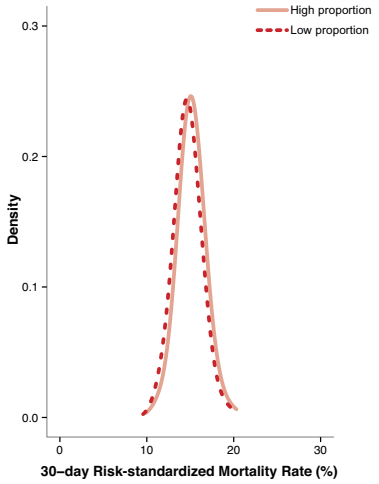
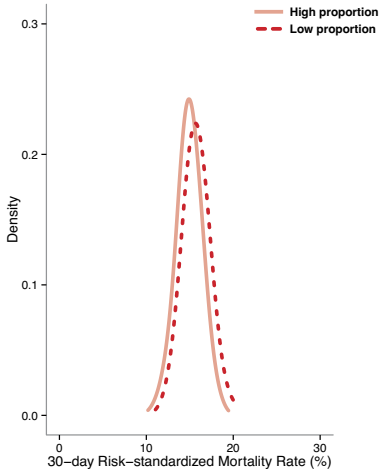


FIGURE A.2.2. *Distribution of AMI RSMRs for hospitals with the lowest and highest proportion of African-American patients, July 2009 – June 2012.*



For the acute myocardial infarction (AMI) mortality measure, we compared the distributions of risk-standardized mortality rates (RSMRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 8% of a hospital's patients) with RSMR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 30%). We also compared the distributions of RSMRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSMR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 23%). Figures A.2.1 and A.2.2 and Tables A.2.1 and A.2.2 display the distributions.

The distribution of RSMRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients performed slightly better than hospitals with high proportions of Medicaid patients, with a 0.5 percentage point difference in the median hospital's RSMR. In contrast, hospitals with low proportions of African-American patients performed slightly worse than hospitals with high proportions of African-American patients, with a 0.2 percentage point difference in the median hospital's RSMR.

Hospitals serving the fewest Medicaid or minority patients had nearly identical distributions of RSMRs as hospitals serving the most Medicaid or minority patients, indicating that both can perform well on the measure.

TABLE A.2.1. *Distribution of AMI RSMRs by Proportion of Medicaid Patients, July 2009 – June 2012.*

	AMI RSMR (%)	
	Low proportion (≤8%) Medicaid patients; n=256	High proportion (≥30%) Medicaid patients; n=257
Maximum	20.1	20.4
90%	16.6	16.8
75%	15.5	16.0
Median (50%)	14.6	15.1
25%	13.9	14.3
10%	12.8	13.4
Minimum	11.0	10.9

TABLE A.2.2. *Distribution of AMI RSMRs by Proportion of African-American Patients, July 2009 – June 2012.*

	AMI RSMR (%)	
	Low proportion (0%) African-American patients; n=260	High proportion (≥23%) African-American patients; n=259
Maximum	20.1	19.1
90%	17.2	16.9
75%	16.4	16.1
Median (50%)	15.3	15.1
25%	14.4	14.3
10%	13.7	13.2
Minimum	11.6	10.4

Source Data and Population: AMI Mortality Cohort data, July 2009 – June 2012 (Appendix I); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II).

Notes: 1) Veterans Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicare FFS patients is calculated among all hospital patients.4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures and density plots, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

How do hospitals caring for high proportions of Medicaid or minority patients perform on the AMI readmission measure?

FIGURE A.2.3. *Distribution of AMI RSRRs for hospitals with the lowest and highest proportion of Medicaid patients, July 2009 – June 2012.*

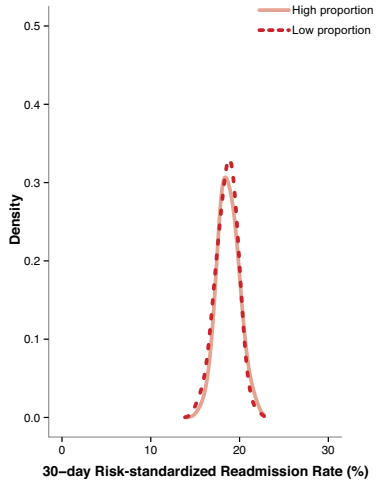
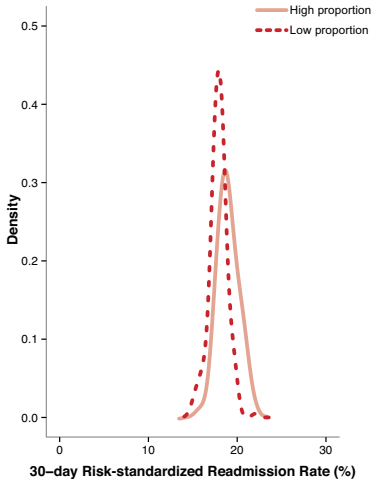


FIGURE A.2.4. *Distribution of AMI RSRRs for hospitals with the lowest and highest proportion of African-American patients, July 2009 – June 2012.*



For the acute myocardial infarction (AMI) readmission measure, we compared the distribution of risk-standardized readmission rates (RSRRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 8% of a hospital's patients) with RSRR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 30%). We also compared the distribution of RSRRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSRR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 22%). Figures A.2.3 and A.2.4 and Tables A.2.3 and A.2.4 display the distributions.

The distribution of RSRRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients performed slightly better than hospitals with high proportions of Medicaid patients, with a 0.3 percentage point difference in the median hospital's RSRR. Likewise, hospitals with low proportions of African-American patients performed better than hospitals with high proportions of African-American patients, with a 1.0 percentage point difference in the medians.

Hospitals with high proportions of Medicaid patients achieved a similar range of performance as compared to hospitals with low proportions of these patients, indicating that both can perform well. Although similarly wide, the range showed a shift towards poorer performance for hospitals with high proportions of African-American patients compared with those with low proportions of African-American patients.

TABLE A.2.3. *Distribution of AMI RSRRs by Proportion of Medicaid Patients, July 2009 – June 2012.*

	AMI RSMR (%)	
	Low proportion (≤8%) Medicaid patients; n=228	High proportion (≥30%) Medicaid patients; n=227
Maximum	22.0	22.1
90%	19.7	20.3
75%	19.0	19.5
Median (50%)	18.3	18.6
25%	17.4	17.9
10%	16.8	17.3
Minimum	15.2	15.5

TABLE A.2.4. *Distribution of AMI RSRRs by Proportion of African-American Patients, July 2009 – June 2012.*

	AMI RSMR (%)	
	Low proportion (0%) African-American patients; n=228	High proportion (≥22%) African-American patients; n=228
Maximum	22.0	24.3
90%	19.2	20.7
75%	18.4	19.8
Median (50%)	17.9	18.9
25%	17.4	18.2
10%	16.6	17.6
Minimum	14.7	15.5

Source Data and Population: AMI Readmission Cohort data, July 2009 – June 2012 (Appendix I); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II).

Notes: 1) Veterans Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of African-American patients is calculated among all Medicare FFS patients. 4) The percent of Medicare FFS patients is calculated among all hospital patients. 5) For more information about figures and density plots, see Appendix III.

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How do hospitals caring for high proportions of Medicaid or minority patients perform on the heart failure mortality measure?

FIGURE A.2.5. *Distribution of Heart Failure RSMRs for hospitals with the lowest and highest proportion of Medicaid patients, July 2009 – June 2012.*

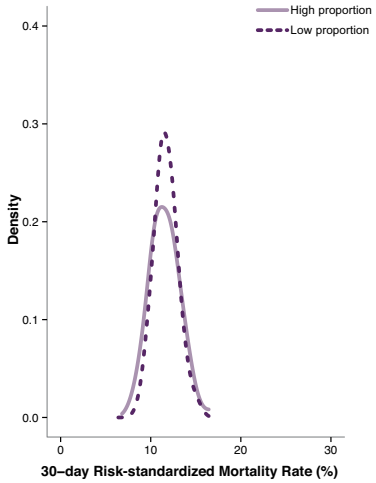
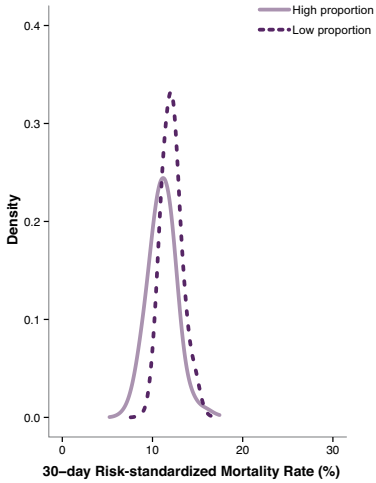


FIGURE A.2.6. *Distribution of Heart Failure RSMRs for hospitals with the lowest and highest proportion of African-American patients, July 2009 – June 2012.*



For the heart failure mortality measure, we compared the distributions of risk-standardized mortality rates (RSMRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 7% of a hospital's patients) with RSMR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 29%). We also compared the distribution of RSMRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0% African-American patients) with RSMR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 24%). Figures A.2.5 and A.2.6 and Tables A.2.5 and A.2.6 display the distributions.

The distribution of RSMRs is similar for both sets of hospitals. Hospitals with high proportions of Medicaid patients performed slightly better than hospitals with low proportions of Medicaid patients, with a 0.1 percentage point difference in the median hospital's RSMR. Similarly, hospitals with high proportions of African-American patients performed better than hospitals with low proportions of African-American patients, with a 1.0 percentage point difference between medians. The median hospital with a high proportion of African-American patients did 1 percentage point better than the median hospital with a low proportion of African-American patients.

Hospitals with high proportions of Medicaid or minority patients achieved a similar range of performance as compared to hospitals with low proportions of these patients, indicating both can perform well on the measure.

TABLE A.2.5. *Distribution of Heart Failure RSMRs by Proportion of Medicaid Patients, July 2009 – June 2012.*

	Heart Failure RSMR (%)	
	Low proportion (≤7%) Medicaid patients; n=388	High proportion (≥29%) Medicaid patients; n=388
Maximum	15.6	17.5
90%	13.4	16.9
75%	12.5	13.7
Median (50%)	11.6	11.5
25%	10.8	10.4
10%	10.0	9.5
Minimum	8.3	7.4

TABLE A.2.6. *Distribution of Heart Failure RSMRs by Proportion of African-American Patients, July 2009 – June 2012.*

	Heart Failure RSMR (%)	
	Low proportion (0%) African-American patients; n=546	High proportion (≥24%) African-American patients; n=392
Maximum	17.2	17.3
90%	13.7	13.0
75%	12.8	12.1
Median (50%)	12.1	11.1
25%	11.3	10.0
10%	10.7	9.1
Minimum	8.6	6.4

Source Data and Population: Heart Failure Mortality Cohort data – July 2009 – June 2012 (Appendix I); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II).

Notes: 1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

How hospitals caring for high proportions of Medicaid or minority patients perform on the heart failure readmission measure?

FIGURE A.2.7. *Distribution of Heart Failure RSRRs for hospitals with the lowest and highest proportion of Medicaid patients, July 2009 – June 2012.*

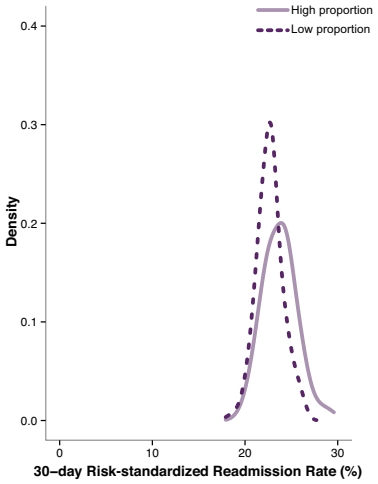
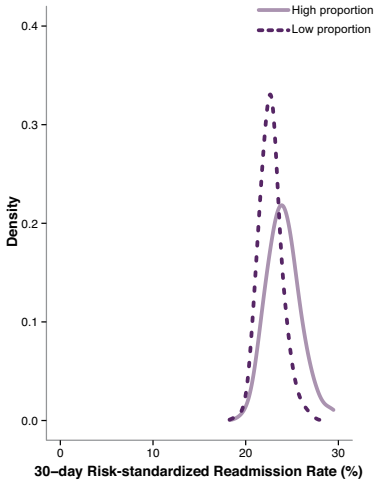


FIGURE A.2.8. *Distribution of Heart Failure RSRRs for hospitals with the lowest and highest proportion of African-American patients, July 2009 – June 2012.*



For the heart failure readmission measure, we compared the distribution of risk-standardized readmission rates (RSRRs) for hospitals with the lowest overall proportion of Medicaid patients (≤7% of a hospital's patients) with RSRR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 29%). We also compared the distribution of RSRRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSRR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 24%). Figures A.2.7 and A.2.8 and Tables A.2.7 and A.2.8 display the distributions.

The distribution of RSRRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients performed slightly better than hospitals with high proportions of Medicaid patients, with a 1.0 percentage point difference in the median hospital's RSRR. Similarly, hospitals with low proportions of African-American patients performed slightly better than hospitals with high proportions of African-American patients, with a 1.2 percentage point difference in medians.

Hospitals with high proportions of Medicaid or minority patients achieved a similar range of RSRRs as compared to hospitals with a low proportions of these patients, indicating both can perform well, but had poorer performance overall.

TABLE A.2.7. *Distribution of Heart Failure RSRRs by Proportion of Medicaid Patients, July 2009 – June 2012.*

	Heart Failure RSRR (%)	
	Low proportion (≤7%) Medicaid patients; n=397	High proportion (≥29%) Medicaid patients; n=398
Maximum	26.5	30.7
90%	24.6	26.1
75%	23.4	24.9
Median (50%)	22.7	23.7
25%	21.7	22.4
10%	21.0	21.4
Minimum	18.1	19.0

TABLE A.2.8. *Distribution of Heart Failure RSRRs by Proportion of African-American Patients, July 2009 – June 2012.*

	Heart Failure RSRR (%)	
	Low proportion (0%) African-American patients; n=585	High proportion (≥24%) African-American patients; n=401
Maximum	28.9	29.8
90%	24.3	26.3
75%	23.4	25.1
Median (50%)	22.7	23.9
25%	21.9	22.9
10%	21.2	21.9
Minimum	18.8	19.5

Source Data and Population: Heart Failure Readmission Cohort data –– July 2009 – June 2012 (Appendix I); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II).

Notes: 1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

How do hospitals caring for high proportions of Medicaid or minority patients perform on the pneumonia mortality measure?

FIGURE A.2.9. *Distribution of Pneumonia RSMRs for hospitals with the lowest and highest proportion of Medicaid patients, July 2009 – June 2012.*

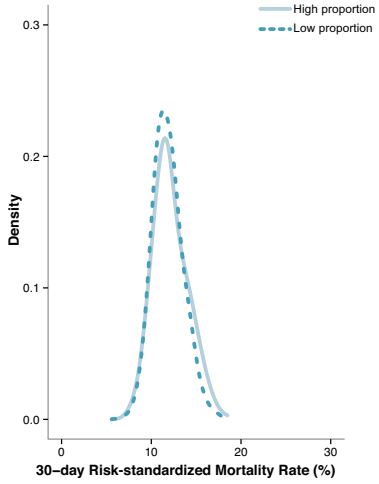
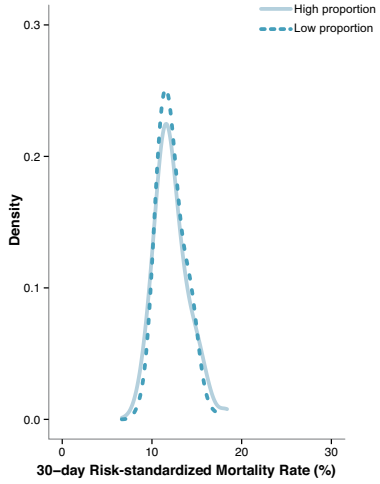


FIGURE A.2.10. *Distribution of Pneumonia RSMRs for hospitals with the lowest and highest proportion of African-American patients, July 2009 – June 2012.*



For the pneumonia mortality measure, we compared the distribution of risk-standardized mortality rates (RSMRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 6% of a hospital's patients) with RSMR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 29%). We also compared the distribution of RSMRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSMRs distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 23%). Figures A.2.9 and A.2.10 and Tables A.2.9 and A.2.10 display the distributions.

The distribution of RSMRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients performed only slightly better than hospitals with high proportions of Medicaid patients, with a 0.1 percentage point difference in the median hospital's RSMR. Hospitals with low proportions of African-American patients performed similarly to hospitals with high proportions of African-American patients.

Hospitals serving the fewest Medicaid or minority patients had a nearly identical distribution of RSMRs as hospitals serving the most Medicaid or minority patients, indicating that both can perform well on the measures.

TABLE A.2.9. *Distribution of Pneumonia RSMRs by Proportion of Medicaid Patients, July 2009 – June 2012.*

	Pneumonia RSMR (%)	
	Low proportion (≤6%) Medicaid patients; n=426	High proportion (≥29%) Medicaid patients; n=427
Maximum	17.4	18.8
90%	14.1	14.8
75%	12.8	13.4
Median (50%)	11.7	11.8
25%	10.7	10.8
10%	9.9	9.9
Minimum	7.0	7.7

TABLE A.2.10. *Distribution of Pneumonia RSMRs by Proportion of African-American Patients, July 2009 – June 2012.*

	Pneumonia RSMR (%)	
	Low proportion (0%) African-American patients; n=824	High proportion (≥23%) African-American patients; n=430
Maximum	18.3	18.8
90%	14.4	14.8
75%	13.2	13.3
Median (50%)	11.9	11.9
25%	11.0	10.9
10%	10.3	9.9
Minimum	8.0	7.3

Source Data and Population: Pneumonia Mortality Cohort data, July 2009 – June 2012 (Appendix I); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II).

Notes: 1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

How do hospitals caring for high proportions of Medicaid or minority patients perform on the pneumonia readmission measure?

FIGURE A.2.11. *Distribution of Pneumonia RSRRs for hospitals with the lowest and highest proportion of Medicaid patients, July 2009 – June 2012.*

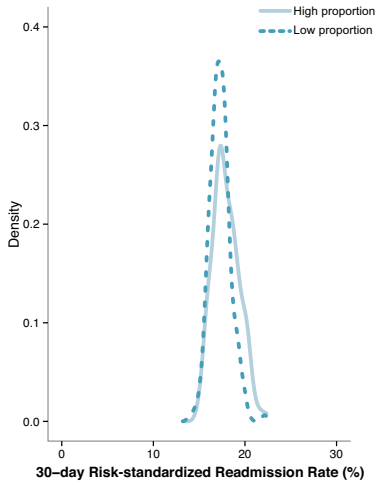
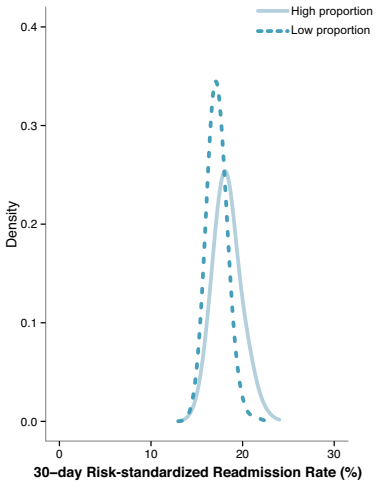


FIGURE A.2.12. *Distribution of Pneumonia RSRRs for hospitals with the lowest and highest proportion of African-American patients, July 2009 – June 2012.*



For the pneumonia readmission measure, we compared the distribution of risk-standardized readmission rates (RSRRs) for hospitals with the lowest overall proportion of Medicaid patients (≤6% of a hospital's patients) with RSRR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 28%). We also compared the distribution of RSRRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSRR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 23%). Figures A.2.11 and A.2.12 and Tables A.2.11 and A.2.12 display the distributions.

The distribution of RSRRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients performed slightly better than hospitals with high proportions of Medicaid patients, with a 0.6 percentage point difference in the median hospital's RSRR. Likewise, hospitals with lowest proportions of African-American patients performed slightly better than hospitals with high proportions of African-American patients, with a 1.0 percentage point difference in medians.

Hospitals with high proportions of Medicaid or minority patients achieved a similar range of RSRRs as compared to hospitals with low proportions of these patients, indicating both can perform well, but had poorer performance overall.

TABLE A.2.11. *Distribution of Pneumonia RSRRs by Proportion of Medicaid Patients, July 2009 – June 2012.*

	Pneumonia RSRR (%)	
	Low proportion (≤6%) Medicaid patients; n=429	High proportion (≥28%) Medicaid patients; n=429
Maximum	22.2	22.7
90%	18.8	20.1
75%	17.9	18.9
Median (50%)	17.2	17.8
25%	16.6	16.9
10%	15.9	16.1
Minimum	13.9	14.8

TABLE A.2.12. *Distribution of Pneumonia RSRRs by Proportion of African-American Patients, July 2009 – June 2012.*

	Pneumonia RSRR (%)	
	Low proportion (0%) African-American patients; n=831	High proportion (≥23%) African-American patients; n=431
Maximum	21.7	23.2
90%	18.5	20.3
75%	17.9	19.1
Median (50%)	17.2	18.2
25%	16.5	17.3
10%	16.0	16.7
Minimum	14.5	15.0

Source Data and Population: Pneumonia Readmission Cohort data – July 2009 – June 2012 (Appendix I); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II).

Notes: 1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

How do hospitals caring for high proportions of Medicaid or minority patients perform on the hip/knee arthroplasty complication measure?

FIGURE A.2.13. *Distribution of Hip/Knee Arthroplasty RSCRs for hospitals with the lowest and highest proportion of Medicaid patients, July 2009-March 2012.*

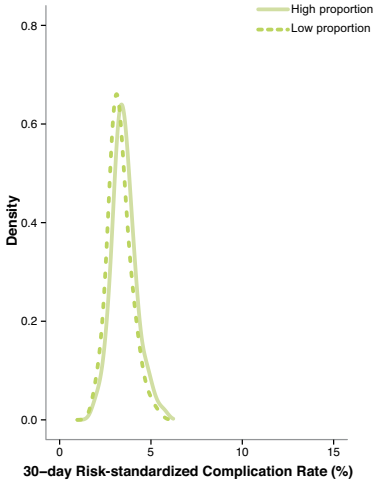
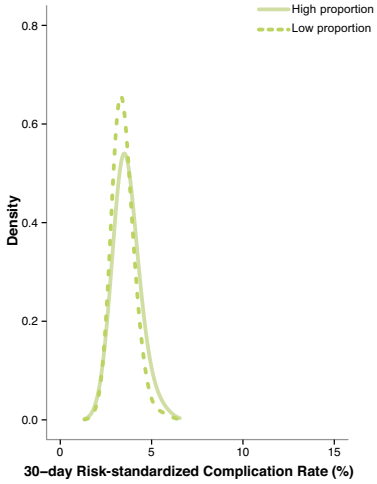


FIGURE A.2.14. *Distribution of Hip/Knee Arthroplasty RSCRs for hospitals with the lowest and highest proportion of African-American patients, July 2009-March 2012.*



For the hip/knee arthroplasty complication measure, we compared the distribution of risk-standardized complication rates (RSCRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 7% of a hospital's patients) with RSCR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 29%). We also compared the distribution of RSCRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSCR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 20%). Figures A.2.13 and A.2.14 and Tables A.2.13 and A.2.14 display the distributions.

The distribution of RSCRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients performed slightly better than hospitals with high proportions of Medicaid patients, with a 0.3 percentage point difference in the median hospital's RSCR. Similarly, hospitals with low proportions of African-American patients performed slightly better than hospitals with high proportions of African-American patients, with a 0.2 percentage point difference in medians.

Hospitals serving the fewest Medicaid or minority patients had a nearly identical distribution of RSCRs as hospitals serving the most Medicaid or minority patients, indicating that both groups of hospitals can perform well on the measure.

TABLE A.2.13. *Distribution of Hip/Knee Arthroplasty RSCRs by Proportion of Medicaid Patients, July 2009-March 2012.*

	Hip/Knee Arthroplasty RSCR (%)	
	Low proportion (≤7%) Medicaid patients; n=276	High proportion (≥29%) Medicaid patients; n=276
Maximum	5.4	5.7
90%	4.2	4.4
75%	3.7	3.9
Median (50%)	3.2	3.5
25%	2.9	3.1
10%	2.6	2.8
Minimum	1.9	1.9

TABLE A.2.14. *Distribution of Hip/Knee Arthroplasty RSCRs by Proportion of African-American Patients, July 2009-March 2012.*

	Hip/Knee Arthroplasty RSCR (%)	
	Low proportion (0%) African-American patients; n=279	High proportion (≥20%) African-American patients; n=278
Maximum	5.9	6.0
90%	4.2	4.5
75%	3.8	4.0
Median (50%)	3.4	3.6
25%	3.1	3.2
10%	2.9	2.9
Minimum	2.2	2.2

Source Data and Population: Hip/Knee Arthroplasty Complication Cohort data – July 2009 – April 2012 (Appendix I); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II), 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II).

Notes: 1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

How do hospitals caring for high proportions of Medicaid or minority patients perform on the hip/knee arthroplasty readmission measure?

FIGURE A.2.15. *Distribution of Hip/Knee Arthroplasty RSRRs for hospitals with the lowest and highest proportion of Medicaid patients, July 2009 – June 2012.*

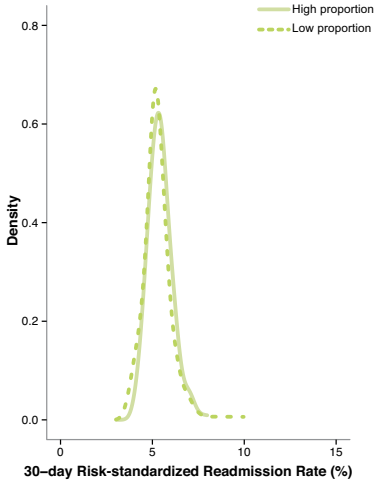
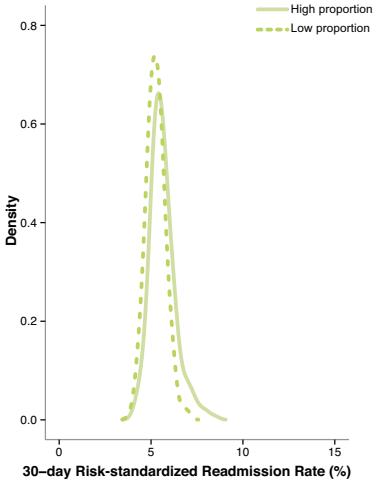


FIGURE A.2.16. *Distribution of Hip/Knee Arthroplasty RSRRs for hospitals with the lowest and highest proportion of African-American patients, July 2009 – June 2012*



For the hip/knee arthroplasty readmission measure, we compared the distribution of risk-standardized readmission rates (RSRRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 7% of a hospital's patients) with RSRR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 29%). We also compared the distribution of RSRRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSRR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 20%). Figures A.2.15 and A.2.16 and Tables A.2.15 and A.2.16 display the distributions.

The distribution of RSRRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients performed slightly better than hospitals with high proportions of Medicaid patients, with a 0.2 percentage point difference in the median hospital's RSRR. Likewise, hospitals with low proportions of African-American patients performed slightly better than hospitals with high proportions of African-American patients, with a 0.3 percentage point difference in medians.

Hospitals with a high proportion of Medicaid or minority patients achieved a similar range of performance as compared to hospitals with a low proportion of these patients, indicating that both can perform well on the measure.

TABLE A.2.15. *Distribution of Hip/Knee Arthroplasty RSRRs by Proportion of Medicaid Patients, July 2009 – June 2012.*

	Hip/Knee Arthroplasty RSRR (%)	
	Low proportion (≤7%) Medicaid patients; n=278	High proportion (≥29%) Medicaid patients; n=279
Maximum	10.0	8.2
90%	6.1	6.3
75%	5.6	5.8
Median (50%)	5.2	5.4
25%	4.9	5.0
10%	4.4	4.6
Minimum	3.6	4.1

TABLE A.2.16. *Distribution of Hip/Knee RSRRs by Proportion of African-American Patients, July 2009 – June 2012.*

	Hip/Knee Arthroplasty RSRR (%)	
	Low proportion (0%) African-American patients; n=282	High proportion (≥20%) African-American patients; n=281
Maximum	7.0	8.5
90%	5.9	6.4
75%	5.6	6.0
Median (50%)	5.2	5.5
25%	4.9	5.2
10%	4.6	4.9
Minimum	3.9	4.1

Source Data and Population: Hip/Knee Arthroplasty RSRR Cohort data, July 2009 – June 2012 (Appendix I); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II).

Notes: 1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

How do hospitals caring for high proportions of Medicaid or minority patients perform on the hospital-wide readmission measure?

FIGURE B.2.1. *Distribution of Hospital-Wide RSRRs for hospitals with the lowest and highest proportion of Medicaid patients, January – December 2011.*

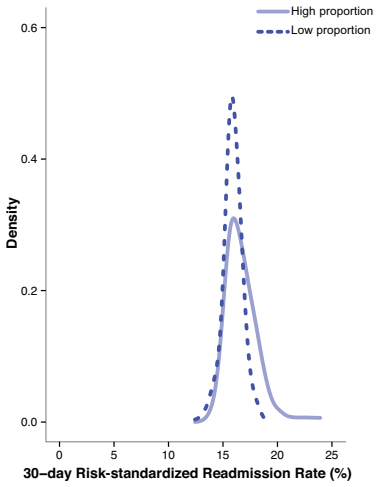
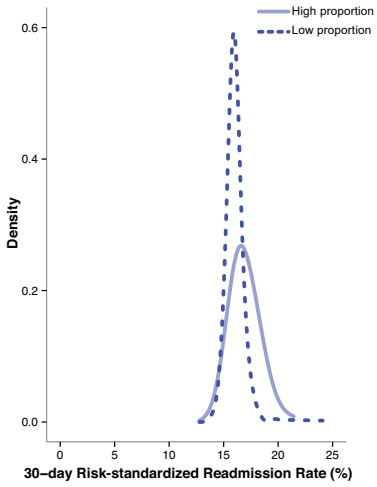


FIGURE B.2.2. *Distribution of Hospital-Wide RSRRs for hospitals with the lowest and highest proportion of African-American patients, January – December 2011.*



For the hospital-wide readmission measure, we compared the distribution of 30-day risk-standardized readmission rates (RSRRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 5% of a hospital's patients) with RSRR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 28%). We also compared the distribution of RSRRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSRR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 23%). Figures B.2.1 and B.2.2 and Tables B.2.1 and B.2.2 display the distributions.

The distribution of RSRRs is similar for both sets of hospitals. Hospitals with low proportion of Medicaid patients performed slightly better than hospitals with high proportions of Medicaid patients, with a 0.5 percentage point difference in the median hospitals' RSRR. Likewise, hospitals with low proportions of African-American patients performed slightly better than hospitals with high proportions of African-American patients, with a 0.8 percentage point difference in the median hospital's RSRR.

Hospitals with high proportions of Medicaid or minority patients achieved a similar range of RSRRs compared with hospitals with low proportions but the range was shifted toward poorer performance for hospitals with high proportions of Medicaid or minority patients.

TABLE B.2.1. *Distribution of Hospital-Wide RSRRs by Proportion of Medicaid Patients, January 2011 – December 2011.*

	Hospital-Wide RSRR (%)	
	Low proportion (≤5%) Medicaid patients; n=462	High proportion (≥28%) Medicaid patients; n=461
Maximum	24.0	21.6
90%	17.0	18.3
75%	16.4	17.5
Median (50%)	15.9	16.4
25%	15.4	15.7
10%	14.8	15.2
Minimum	11.3	13.8

TABLE B.2.2. *Distribution of Hospital-Wide RSRRs by Proportion of African-American Patients, January 2011 – December 2011.*

	Hospital-Wide RSRR (%)	
	Low proportion (0%) African-American patients; n=962	High proportion (≥23%) African-American patients; n=469
Maximum	20.7	24.0
90%	16.9	18.6
75%	16.4	17.8
Median (50%)	16.0	16.8
25%	15.6	16.0
10%	15.2	15.5
Minimum	13.8	14.2

Source Data and Population: Hospital-Wide Readmission Measure Cohort data, January – December 2011 (Appendix I); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II).

1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the one-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) Deciles with 0% African-American patients were combined. 6) For more information about figures, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

How do hospitals caring for high proportions of Medicaid or minority patients perform on the stroke mortality measure?

FIGURE C.2.1. *Distribution of Stroke RSMRs for hospitals with the lowest and highest proportion of Medicaid patients, January 2009 – December 2011.*

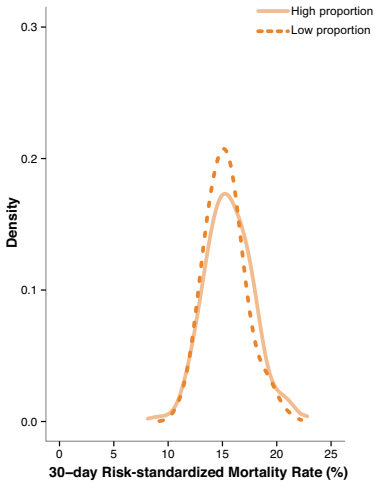
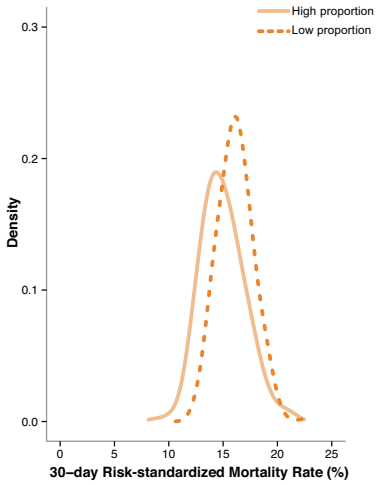


FIGURE C.2.2. *Distribution of Stroke RSMRs for hospitals with the lowest and highest proportion of African-American patients, January 2009 – December 2011.*



For the stroke mortality measure, we compared the distribution of risk-standardized mortality rates (RSMRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 8% of a hospital's patients) with RSMR distributions for hospitals with the highest overall proportion of Medicaid patients (≥30%). We also compared the distribution of RSMRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSMR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥24%). Figures C.2.1 and C.2.2 and Tables C.2.1 and C.2.2 display the distributions.

The distribution of RSMRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients performed slightly better than hospitals with high proportions of Medicaid patients, with a 0.3 percentage point difference in the median hospital's RSMR. Hospitals with low proportions of African-American patients performed worse than hospitals with high proportions of African-American patients, with a 1.4 percentage point difference in medians.

The hospitals with high proportions of Medicaid patients achieved a similar range of performance as compared with hospitals with low proportions of these patients. Hospitals with high proportions of African-American patients had better performance overall than hospitals with low proportions of African-American patients.

TABLE C.2.1. *Distribution of Stroke RSMRs by Proportion of Medicaid Patients, January 2009 – December 2011.*

	Stroke RSMR (%)	
	Low proportion (≤8%) Medicaid patients; n=300	High proportion (≥30%) Medicaid patients; n=300
Maximum	21.1	21.9
90%	17.7	18.1
75%	16.3	17.0
Median (50%)	15.2	15.5
25%	14.0	14.2
10%	13.1	13.0
Minimum	10.9	8.5

TABLE C.2.2. *Distribution of Stroke RSMRs by Proportion of African-American Patients, January 2009 – December 2011.*

	Stroke RSMR (%)	
	Low proportion (0%) African-American patients; n=303	High proportion (≥24%) African-American patients; n=303
Maximum	22.6	21.4
90%	18.3	17.7
75%	17.2	16.2
Median (50%)	16.2	14.8
25%	15.1	13.6
10%	14.1	12.6
Minimum	12.4	8.7

Source Data and Population: Stroke Measure Cohort data, January 2009 – December 2011 (Appendix I); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II).

Notes: 1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

How do hospitals caring for high proportions of Medicaid or minority patients perform on the stroke readmission measure?

FIGURE C.2.3. *Distribution of Stroke RSRRs for hospitals with the lowest and highest proportion of Medicaid patients, January 2009 – December 2011.*

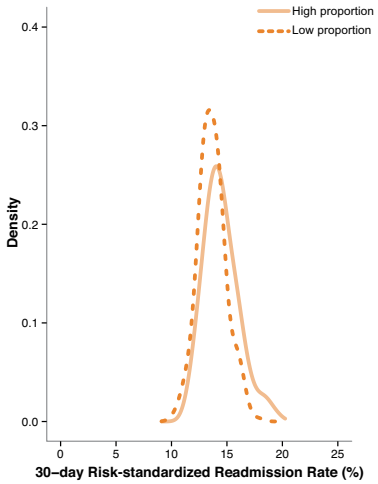
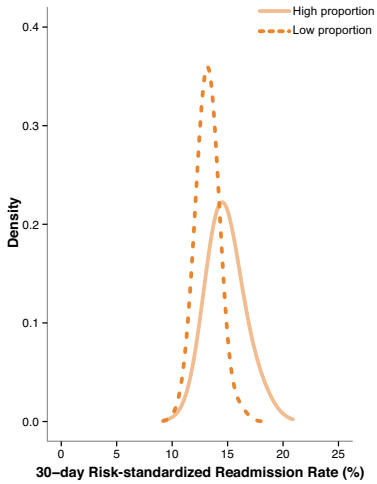


FIGURE C.2.4. *Distribution of Stroke RSRRs for hospitals with the lowest and highest proportion of African-American patients, January 2009 – December 2011.*



For the stroke readmission measure, we compared the distribution of risk-standardized readmission rates (RSRRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 8% of a hospital's patients) with RSRR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 30%). We also compared the distribution of RSRRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSRR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥24%). Figures C.2.3 and C.2.4 and Tables C.2.3 and C.2.4 display the distributions.

The distribution of RSRRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients performed slightly better than hospitals with high proportions of Medicaid patients, with a 0.6 percentage point difference in the median hospital's RSRR. Similarly, hospitals with low proportions of African-American patients performed better than hospitals with high proportions of African-American patients, with a 1.5 percentage point difference in medians.

Hospitals with high proportions of Medicaid patients achieved a similar range of RSRRs as compared to hospitals with low proportions of these patients, indicating that both groups can perform well on the measure but the range was shifted towards poorer performance for hospitals with high proportions of African-American patients.

TABLE C.2.3. *Distribution of Stroke RSRRs by Proportion of Medicaid Patients, January 2009 – December 2011.*

	Stroke RSRR (%)	
	Low proportion (≤8%) Medicaid patients; n=293	High proportion (≥30%) Medicaid patients; n=293
Maximum	17.9	19.5
90%	15.3	16.4
75%	14.4	15.3
Median (50%)	13.6	14.2
25%	12.9	13.4
10%	12.2	12.6
Minimum	10.2	11.5

TABLE C.2.4. *Distribution of Stroke RSRRs by Proportion of African-American Patients, January 2009-December 2011.*

	Stroke RSRR (%)	
	Low proportion (0%) African-American patients; n=294	High proportion (≥24%) African-American patients; n=294
Maximum	16.5	19.7
90%	14.3	16.9
75%	13.8	15.8
Median (50%)	13.2	14.7
25%	12.6	13.8
10%	12.0	13.1
Minimum	10.6	10.4

Source Data and Population: Stroke Measure Cohort data, January 2009 – December 2011 (Appendix I); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II).

Notes: 1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

How do hospitals caring for high proportions of Medicaid or minority patients perform on the COPD mortality measure?

FIGURE D.2.1. *Distribution of COPD RSMRs for hospitals with the lowest and highest proportion of Medicaid patients, January 2009 – December 2011.*

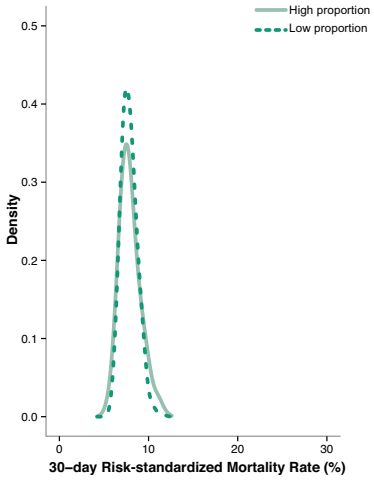
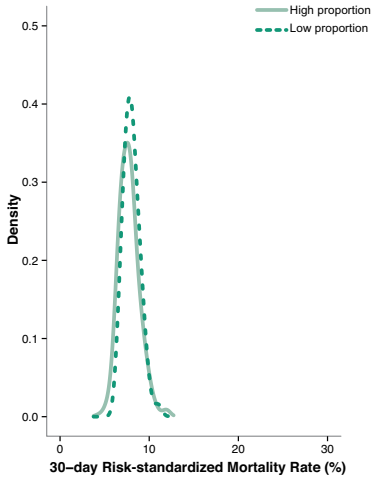


FIGURE D.2.2. *Distribution of COPD RSMRs for hospitals with the lowest and highest proportion of African-American patients, January 2009 – December 2011.*



For the chronic obstructive pulmonary disease (COPD) mortality measure, we compared the distribution of 30-day risk-standardized mortality rates (RSMRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 7% of a hospital's patients) with RSMR distributions for hospitals with the highest overall proportion of Medicaid patients (≥29%). Similarly, we compared the distribution of RSMRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSMR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 23%). Figures D.2.1 and D.2.2 and Tables D.2.1 and D.2.2 display the distributions.

The distribution of RSMRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients had similar performance to hospitals with high proportions of Medicaid patients, with no difference in the median hospital RSMR. Hospitals with high proportions of African-American patients performed slightly better than hospitals with low proportions of African-American patients, with a 0.2 percentage point difference in the median hospital's RSMR.

Hospitals with high proportions of Medicaid or minority patients achieved a similar range of performance as compared to hospitals with low proportions of these patients, indicating that both can perform well on these measures.

TABLE D.2.1. *Distribution of COPD RSMRs by Proportion of Medicaid Patients, January 2009 – December 2011.*

	COPD RSMR (%)	
	Low proportion (≤7%) Medicaid patients; n=382	High proportion (≥29%) Medicaid patients; n=382
Maximum	11.6	12.0
90%	9.1	9.6
75%	8.4	8.6
Median (50%)	7.7	7.7
25%	7.2	7.0
10%	6.8	6.5
Minimum	6.0	5.2

TABLE D.2.2. *Distribution of COPD RSMRs by Proportion of African-American Patients, January 2009-December 2011.*

	COPD RSMR (%)	
	Low proportion (0%) African-American patients; n=517	High proportion (≥23%) African-American patients; n=386
Maximum	12.8	12.0
90%	9.2	9.2
75%	8.6	8.3
Median (50%)	7.9	7.7
25%	7.3	6.9
10%	6.9	6.5
Minimum	6.0	4.3

Source Data and Population: COPD Measure Cohort data, January 2009 – December 2011 (Appendix I); 2011 American Hospital Association (AHA) data to calculate overall proportion of Medicaid patients (Appendix II); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II).

Notes: 1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures, see Appendix III.

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How do hospitals caring for high proportions of Medicaid or minority patients perform on the COPD readmission measure?

FIGURE D.2.3. *Distribution of COPD RSRRs for hospitals with the lowest and highest proportion of Medicaid patients, January 2009 – December 2011.*

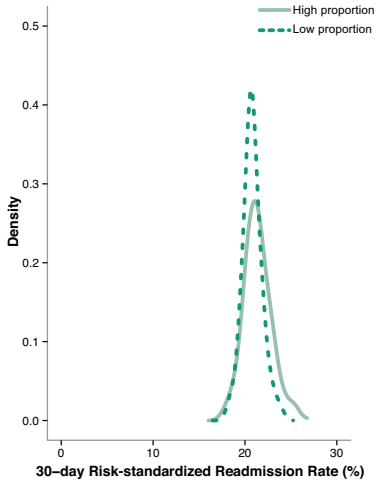
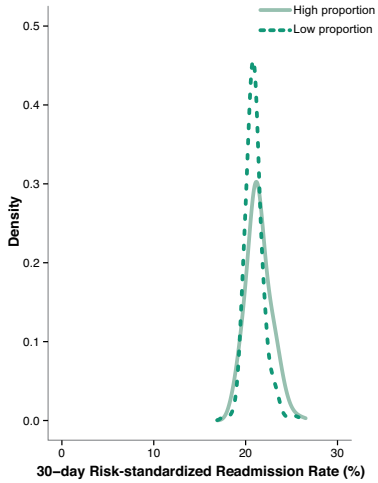


FIGURE D.2.4. *Distribution of COPD RSRRs for hospitals with the lowest and highest proportion of African-American patients, January 2009 – December 2011.*



For the chronic obstructive pulmonary disease (COPD) readmission measure, we compared the distribution of risk-standardized readmission rates (RSRRs) for hospitals with the lowest overall proportion of Medicaid patients (≤ 7% of a hospital's patients) with RSRR distributions for hospitals with the highest overall proportion of Medicaid patients (≥ 29%). We also compared the distribution of RSRRs for hospitals with the lowest proportion of African-American Medicare fee-for-service (FFS) patients (0%) with RSRR distributions for hospitals with the highest proportion of African-American Medicare FFS patients (≥ 24%). Figures D.2.3 and D.2.4 and Tables D.2.3 and D.2.4 display the distributions.

The distribution of RSRRs is similar for both sets of hospitals. Hospitals with low proportions of Medicaid patients performed slightly better than hospitals with high proportions of Medicaid patients, with a 0.6 percentage point difference in the median hospital's RSRR. Similarly, hospitals with low proportions of African-American patients performed slightly better than hospitals with high proportions of African-American patients, with a 0.4 percentage point difference in the median hospital RSRR.

Hospitals with high proportions of Medicaid or minority patients achieved a similar range of performance as compared to hospitals with low proportions of these patients, indicating that both can perform well on the measure.

TABLE D.2.3. *Distribution of COPD RSRRs by Proportion of Medicaid Patients, January 2009 – December 2011.*

	COPD RSRR (%)	
	Low proportion (≤7%) Medicaid patients; n=391	High proportion (≥29%) Medicaid patients; n=390
Maximum	24.3	26.8
90%	22.1	23.2
75%	21.4	22.2
Median (50%)	20.7	21.3
25%	20.2	20.4
10%	19.6	19.7
Minimum	17.8	17.6

TABLE D.2.4. *Distribution of COPD RSRRs by Proportion of African-American Patients, January 2009-December 2011.*

	COPD RSRR (%)	
	Low proportion (0%) African-American patients; n=555	High proportion (≥24%) African-American patients; n=394
Maximum	26.0	26.3
90%	22.2	23.3
75%	21.4	22.2
Median (50%)	20.9	21.3
25%	20.3	20.5
10%	19.8	19.7
Minimum	17.5	18.3

Source Data and Population: COPD Measure Cohort data, January 2009 – December 2011 (Appendix I); 2011 American Hospital Association data to calculate overall proportion of Medicaid patients (Appendix II); 2011 Medicare Part A Inpatient Claims data to calculate proportion of African-American Medicare FFS patients (Appendix II).

Notes: 1) Veteran Health Administration (VA) hospitals are not included in this analysis. 2) The results of hospitals with fewer than 25 cases of the condition over the three-year period are not shown; however, these hospitals are included in the calculations. 3) The percent of Medicaid patients is calculated among all hospital patients. 4) The percent of African-American patients is calculated among all Medicare FFS patients. 5) For more information about figures, see Appendix III.

Prepared for CMS by YNHHSC/CORE.

Instructions for Discharge-Level Data and Risk Factor Excel® File Accompanying Hospital-Specific Report

for

Hospital-Wide All-Cause Unplanned Readmission (HWR) Measure

September 2012 Dry Run

PLEASE DO NOT EMAIL OR ATTACH TO EMAILS ANY PATIENT IDENTIFIABLE INFORMATION (E.G., DATE OF BIRTH, SSN, HIC NUMBER, ADMISSION and DISCHARGE DATE)

Table of Contents

List of Tables

Introduction

This document includes a description of the data and risk factor information contained in the accompanying discharge-level data and risk factor Excel® file for the Hospital-Wide All-Cause Unplanned Readmission (HWR) Measure. The Excel® file contains three worksheets with information on patients who were included in the HWR measure at your hospital and in the U.S. The file contains the following three worksheets:

1. Discharge-Level Data – data for all readmitted patients with index admissions included in the HWR measure at your hospital.

2. Impact of Risk Factors – estimated impact of patient risk factors from each of the specialty cohort models.

3. Case and Service Mix Comparison – case mix and service mix information for each of the specialty cohort models for patients at your hospital and in the U.S.

Note: These files contain discharge-level data that are protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). It is a violation of HIPAA rules to share these protected discharge-level data with other organizations, including the press. Emailing protected health information poses a security issue, and each HIPAA-covered entity is responsible for ensuring compliance with the security standards. There are only two secure ways to send your discharge-level data: (1) encrypting the data (using a minimum 128-bit encryption) and shipping it via a bonded courier with an established chain of custody (for example the United States Postal Service or FedEx), and (2) sending it via the government-approved, secure section of the *QualityNet* website (https://www.qualitynet.org/).

Worksheet 1. Discharge-Level Data Worksheet Contents

The Discharge-Level Data worksheet, located in the first tab of the Excel® file, provides discharge-level data. Data are included for all Medicare Fee-for-Service (FFS) patients aged 65 years or older who were discharged from your hospital during the 2010 calendar year following a qualifying index admission and were readmitted to any hospital within 30 days of discharge.

Table 1 lists the data elements included in this worksheet.

Table 1. Discharge-Level Data Worksheet Contents

Column	Variable name	Description
Column A	Provider ID	Provider identification number (CMS Certification Number [CCN]) for the index admission
Column B	Measure	Identifies for which September 2012 dry run measure discharge-level data are provided (HWR)
Column C	Specialty Cohort	Specialty cohort to which the index admission is assigned (Medicine, Surgery/Gynecology, Cardiorespiratory, Cardiovascular, and Neurology)
Column D	Beneficiary HIC	10-11 digit patient Medicare health insurance claim (HIC) account number
Column E	Beneficiary DOB	Patient date of birth (DOB) (MM/DD/YYYY)
Column F	Admit date of index stay	Admission date for index admission (MM/DD/YYYY)
Column G	Discharge date of index stay	Discharge date for index admission (MM/DD/YYYY)
Column H	Principal discharge diagnosis of index stay	The principal discharge diagnosis of the index admission (International Classification of Diseases, Ninth Revision, Clinical Modification [ICD-9-CM] code)
Column I	Planned readmission (Yes/No)	Whether the readmission was identified as planned by the HWR measure planned readmissions algorithm (Yes/No). Planned readmissions are not counted as outcomes in the measure.
Column J	Readmission date	The date the patient was readmitted (MM/DD/YYYY)
Column K	Discharge date of readmission	The date the patient was discharged from the readmission stay (MM/DD/YYYY)
Column L	Principal discharge diagnosis of readmission	The principal discharge diagnosis of the readmission (ICD-9-CM code)
Column M	Readmission to the same hospital (Yes/No)	Whether the patient was readmitted to the same hospital as the index admission (Yes/No)
Column N	Provider ID of readmitting hospital	Provider identification number (CCN) for the readmission

Worksheet 2. Impact of Risk Factors Worksheet Contents

The Impact of Risk Factors worksheet, located in the second tab of the Excel® file, presents the impact of patient risk factors for each of the five specialty cohort models in the HWR measure. Included in the models as risk factors are:

- Patient age
- Patient comorbidities
- Condition indicators

The worksheet displays the odds ratios (ORs) produced for age, the comorbid risk factors, and the condition indicators, along with their respective 95% confidence intervals (CIs) for each of the five specialty cohort models. Odds ratios greater than 1.0 correspond to increased odds of readmission, and those less than 1.0 correspond to decreased odds of readmission. If the CI contains the number 1, the OR is not statistically significant in the model.

The 31 comorbid risk factors are defined using the CMS Condition Category (CMS-CC) classification. They are derived from secondary ICD-9-CM diagnosis codes from the index admission (except those considered potential complications of care) and all diagnosis codes from admissions in the 12 months prior to the index admission. These risk factors apply to all specialty cohort models, but ORs and 95% CIs are calculated separately for each model. A crosswalk showing the relationship of the CMS-CC codes included in the HWR measure to ICD-9-CM codes is available on *QualityNet*.

The condition indicators are defined using the 285 clinically meaningful, mutually-exclusive diagnosis categories comprised of individual ICD-9-CM codes included in the Agency for Healthcare Research and Quality (AHRQ) Clinical Classification Software (CCS) (www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp). They represent the principal discharge diagnoses of patients in each specialty cohort model. Condition indicators included in the four non-surgery cohorts are mutually exclusive. Thus, ORs for each condition indicator are listed only for the relevant cohort. For example, all patients with heart failure who do not have a qualifying surgical procedure are placed in the cardiorespiratory cohort. Similarly, all patients with stroke who do not have a qualifying surgical procedure are placed in the neurology cohort. Cohorts for which the condition indicator is not applicable are indicated by a dash ("-") in the worksheet. The surgery/gynecology specialty cohort includes most condition indicators because the specialty cohort is defined by procedures, not by diagnoses. Conditions with fewer than 1,000 admissions nationally in 2010 data are grouped together into a specialty cohort-specific "low frequency" condition indicator group as indicated by the "LF" designation in the worksheet.

Table 2 describes the contents of this worksheet.

Table 2. Impact of Risk Factors Worksheet Contents

Column	Variable name	Description
Column A	Risk Factor	Comorbid risk factors and condition indicators (note: comorbid risk factors are the same across specialty cohorts; however, ORS and CIs are calculated separately for each model. Condition indicators vary across specialty cohorts.)
Column B	Medicine OR	The odds ratios estimated for the comorbid risk factors and condition indicators by the medicine cohort model
Column C	Medicine 95% CI	The 95% confidence intervals of the odds ratios estimated by the medicine cohort model
Column D	Surgery/Gynecology OR	The odds ratios estimated for the comorbid risk factors and condition indicators by the surgery/gynecology cohort model
Column E	Surgery/Gynecology 95% CI	The 95% confidence intervals of the odds ratios estimated by the surgery/gynecology cohort model
Column F	Cardiorespiratory OR	The odds ratios estimated for the comorbid risk factors and condition indicators by the cardiorespiratory cohort model
Column G	Cardiorespiratory 95% CI	The 95% confidence intervals of the odds ratios estimated by the cardiorespiratory cohort model
Column H	Cardiovascular OR	The odds ratios estimated for the comorbid risk factors and condition indicators by the cardiovascular cohort model
Column I	Cardiovascular 95% CI	The 95% confidence intervals of the odds ratios estimated by the cardiovascular cohort model
Column J	Neurology OR	The odds ratios estimated for the comorbid risk factors and condition indicators by the neurology cohort model
Column K	Neurology 95% CI	The 95% confidence intervals of the odds ratios estimated by the neurology cohort model

Worksheet 3. Case and Service Mix Comparison Worksheet Contents

Case mix and service mix information for patients in the measure for your hospital and the U.S. are provided in the third tab of the Discharge-Level Data and Risk Factor Excel® file. With this worksheet you can assess your hospital's relative case mix and service mix compared with other hospitals. The case and service mixes presented in this worksheet may help you understand differences between the crude hospital-wide composite readmission rate in Table 4 and your hospital's risk-standardized readmission rate (RSRR) in Table 2 of your Hospital-Specific Report.

If your hospital had no qualifying cases with a comorbid risk factor or condition indicator in a specialty cohort, "NQ" will appear in the worksheet. Condition indicators that are not included in a specialty cohort model are identified in the worksheet by "-" in the appropriate cell. Conditions with fewer than 1,000 admissions nationally in 2010 are grouped together into a specialty cohort-specific "low frequency" condition indicator group as indicated by the "LF" designation.

Table 3 describes the contents of this worksheet.

Table 3. Case and Service Mix Comparison Worksheet Contents

Column	Variable name	Description
Column A	Risk Factor	Comorbid risk factors and condition indicators (note: comorbid risk factors are the same across specialty cohorts; condition indicators vary across cohorts)
Column B	Medicine Hospital	The percent of admissions in the medicine cohort at your hospital that had the comorbid risk factor or condition indicator
Column C	Medicine Nation	The percent of admissions in the medicine cohort in the nation that had the comorbid risk factor or condition indicator
Column D	Surgery/Gynecology Hospital	The percent of admissions in the surgery/gynecology cohort at your hospital that had the comorbid risk factor or condition indicator
Column E	Surgery/Gynecology Nation	The percent of admissions in the surgery/gynecology cohort in the nation that had the comorbid risk factor or condition indicator
Column F	Cardiorespiratory Hospital	The percent of admissions in the cardiorespiratory cohort at your hospital that had comorbid risk factor or condition indicator
Column G	Cardiorespiratory Nation	The percent of admissions in the cardiorespiratory cohort in the nation that had the comorbid risk factor or condition indicator
Column H	Cardiovascular Hospital	The percent of admissions in the cardiovascular cohort at your hospital that had the comorbid risk factor or condition indicator
Column I	Cardiovascular Nation	The percent of admissions in the cardiovascular cohort in the nation that had the comorbid risk factor or condition indicator
Column J	Neurology Hospital	The percent of admissions in the neurology cohort at your hospital that had the comorbid risk factor or condition indicator
Column K	Neurology Nation	The percent of admissions in the neurology cohort in the nation that had the comorbid risk factor or condition indicator

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Provider ID	Measure	Specialty Cohort	Beneficiary HIC	Beneficiary DOB	Admit date of index stay	Discharge date of index stay	Principal discharge diagnosis of index stay	Planned readmission* (Yes/No)	Readmission date	Discharge date of readmission	Principal discharge diagnosis of readmission	Readmission to the same hospital (Yes/No)	Provider ID of readmitting hospital
999999	HWR	Cardiovascular	123456789E	12/10/1924	08/06/2010	8/7/2010	41071	No	11/13/10	11/16/10	41071	No	999998
999999	HWR	Cardiovascular	123456789F	02/10/1934	08/03/2010	8/4/2010	41071	No	08/14/10	08/17/10	27651	No	999998
999999	HWR	Medicine	123456789A	07/07/1921	12/28/2010	12/29/2010	72887	No	12/31/10	07/23/99	7282	Yes	999999
999999	HWR	Medicine	123456789C	03/26/1935	11/10/2010	11/11/2010	7905	No	11/13/10	11/16/10	27651	Yes	999999
999999	HWR	Medicine	123456789D	09/30/1941	08/11/2010	8/12/2010	72887	No	08/14/10	08/17/10	7282	Yes	999999
999999	HWR	Medicine	123456789B	08/28/1933	12/12/2010	12/13/2010	45981	Yes	12/15/10	12/18/10	41071	Yes	999999
999999	HWR	Medicine	123456789G	05/03/1943	01/04/2010	1/5/2010	45981	Yes	01/07/10	01/10/10	7282	No	999998

*Planned readmissions are not counted as outcomes in the measure

Odds ratios (OR) and 95% confidence intervals (CI) by specialty cohort model for risk factors in hospital-wide readmission measure

Risk Factor	Medicine OR	Medicine 95% CI	Surgery/Gynecology OR	Surgery/Gynecology 95% CI	Cardiorespiratory OR	Cardiorespiratory 95% CI	Cardiovascular OR	Cardiovascular 95% CI	Neurology OR	Neurology 95% CI
Age (-65)	1.00	1.00-1.00	1.02	1.02-1.02	1.00	1.00-1.00	1.01	1.01-1.01	1.00	1.00-1.00
Metastatic cancer/acute leukemia	1.28	1.26-1.30	1.31	1.28-1.33	1.24	1.20-1.27	1.35	1.29-1.42	1.26	1.20-1.33
Severe cancer	1.29	1.28-1.31	1.19	1.17-1.22	1.22	1.20-1.25	1.34	1.30-1.38	1.30	1.25-1.36
Other major cancers	1.08	1.07-1.09	1.06	1.04-1.08	1.06	1.04-1.09	1.05	1.02-1.08	1.04	1.00-1.08
Other hematological disorders	1.27	1.26-1.29	1.25	1.21-1.29	1.18	1.15-1.21	1.26	1.21-1.31	1.27	1.20-1.35
Coagulation defects and other specified hematological disorders	1.11	1.10-1.12	1.07	1.04-1.09	1.08	1.06-1.10	1.08	1.05-1.12	1.14	1.10-1.19
Iron deficiency	1.14	1.13-1.14	1.18	1.17-1.19	1.14	1.13-1.15	1.18	1.16-1.19	1.17	1.15-1.19
End-stage liver disease	1.35	1.32-1.37	1.39	1.33-1.44	1.22	1.18-1.27	1.31	1.23-1.39	1.37	1.27-1.48
Pancreatic disease	1.16	1.14-1.18	1.12	1.09-1.15	1.10	1.06-1.14	1.15	1.09-1.20	1.09	1.02-1.17
Dialysis status	1.36	1.34-1.39	1.43	1.38-1.47	1.34	1.30-1.39	1.53	1.46-1.60	1.38	1.29-1.48
Acute renal failure	1.21	1.20-1.22	1.21	1.19-1.22	1.18	1.16-1.19	1.23	1.21-1.26	1.21	1.18-1.24
Transplants	1.21	1.18-1.25	1.55	1.47-1.64	1.21	1.14-1.29	1.32	1.20-1.45	1.25	1.10-1.43
Severe Infection	1.15	1.13-1.18	1.19	1.15-1.24	1.20	1.16-1.24	1.12	1.05-1.19	1.09	1.01-1.17
Other infectious disease & pneumonias	1.15	1.14-1.16	1.20	1.19-1.22	1.10	1.09-1.11	1.18	1.16-1.20	1.13	1.10-1.16
Septicemia/shock	1.09	1.07-1.10	1.01	0.99-1.03	1.07	1.05-1.09	1.07	1.04-1.11	1.04	1.00-1.08
CHF	1.23	1.22-1.24	1.24	1.22-1.25	1.24	1.23-1.25	1.35	1.33-1.38	1.25	1.21-1.28
Coronary atherosclerosis or angina, cerebrovascular disease	1.11	1.10-1.12	1.13	1.12-1.14	1.13	1.12-1.14	1.13	1.11-1.15	1.12	1.10-1.15
Specified arrhythmias	1.12	1.11-1.13	1.11	1.09-1.12	1.12	1.11-1.14	1.13	1.11-1.14	1.10	1.07-1.12
Cardiorespiratory failure or cardiorespiratory shock	1.12	1.11-1.13	1.06	1.04-1.08	1.17	1.16-1.18	1.11	1.08-1.13	1.07	1.03-1.10
Coronary obstructive pulmonary disease	1.17	1.16-1.18	1.23	1.22-1.25	1.25	1.24-1.26	1.30	1.28-1.31	1.19	1.17-1.22
Fibrosis of lung or other chronic lung disorders	1.09	1.08-1.11	1.14	1.10-1.17	1.09	1.07-1.11	1.13	1.09-1.17	1.12	1.06-1.19
Protein-calorie malnutrition	1.19	1.18-1.20	1.24	1.23-1.26	1.13	1.12-1.15	1.16	1.13-1.20	1.24	1.21-1.28
Disorders of fluid, electrolyte, acid-base	1.18	1.17-1.19	1.12	1.11-1.14	1.16	1.15-1.18	1.19	1.17-1.21	1.14	1.11-1.16
Rheumatoid arthritis and inflammatory connective tissue disease	1.12	1.11-1.14	1.13	1.11-1.15	1.09	1.07-1.11	1.13	1.10-1.17	1.11	1.06-1.16
Diabetes mellitus	1.09	1.09-1.10	1.13	1.12-1.14	1.11	1.10-1.12	1.16	1.14-1.18	1.13	1.11-1.15
Ulcers	1.17	1.15-1.18	1.10	1.07-1.12	1.16	1.14-1.18	1.22	1.18-1.26	1.10	1.05-1.14
Hemiplegia, paraplegia, paralysis, functional disability	1.14	1.12-1.15	1.12	1.10-1.15	1.11	1.09-1.13	1.16	1.13-1.20	1.12	1.09-1.15
Seizure disorders and convulsions	1.09	1.07-1.11	1.14	1.10-1.17	1.09	1.07-1.12	1.13	1.09-1.17	1.12	1.09-1.15
Respirator dependence/tracheostomy status	1.21	1.17-1.26	1.07	0.98-1.16	1.26	1.20-1.33	1.32	1.14-1.51	1.25	1.07-1.48
Drug and alcohol disorders	1.12	1.10-1.14	1.21	1.18-1.24	1.12	1.09-1.15	1.23	1.18-1.29	1.10	1.04-1.15
Psychiatric comorbidity	1.07	1.07-1.08	1.08	1.07-1.10	1.11	1.10-1.13	1.13	1.11-1.15	1.04	1.02-1.07
Hip fracture/dislocation	0.94	0.92-0.95	0.94	0.92-0.97	0.92	0.89-0.94	0.88	0.84-0.92	0.84	0.79-0.89
Condition Indicator										
Tuberculosis (CCS 1)	LF	LF	LF	LF	-	-	-	-	-	-
Septicemia (except in labor) (CCS 2)	0.95	0.93-0.97	0.91	0.84-0.98	-	-	-	-	-	-
Bacterial infection; unspecified site (CCS 3)	0.90	0.78-1.05	LF	LF	-	-	-	-	-	-
Mycoses (CCS 4)	1.19	1.13-1.26	LF	LF	-	-	-	-	-	-
HIV infection (CCS 5)	LF	LF	LF	LF	-	-	-	-	-	-
Hepatitis (CCS 6)	1.42	1.31-1.53	LF	LF	-	-	-	-	-	-
Viral infection (CCS 7)	0.83	0.78-0.87	LF	LF	-	-	-	-	-	-
Other infections' including parasitic (CCS 8)	0.67	0.60-0.76	LF	LF	-	-	-	-	-	-
Sexually transmitted infections (not HIV or hepatitis) (CCS 9)	LF	LF	LF	LF	-	-	-	-	-	-
Immunizations and screening for infectious disease (CCS 10)	LF	LF	LF	LF	-	-	-	-	-	-
Cancer of head and neck (CCS 11)	-	-	0.65	0.58-0.73	-	-	-	-	-	-
Cancer of esophagus (CCS 12)	-	-	1.15	0.97-1.35	-	-	-	-	-	-
Cancer of stomach (CCS 13)	-	-	0.90	0.80-1.00	-	-	-	-	-	-
Cancer of colon (CCS 14)	-	-	0.59	0.54-0.64	-	-	-	-	-	-
Cancer of rectum and anus (CCS 15)	-	-	0.87	0.80-0.96	-	-	-	-	-	-
Cancer of liver and intrahepatic bile duct (CCS 16)	-	-	0.87	0.74-1.01	-	-	-	-	-	-
Cancer of pancreas (CCS 17)	-	-	1.00	0.90-1.12	-	-	-	-	-	-
Cancer of other GI organs; peritoneum (CCS 18)	-	-	0.78	0.69-0.87	-	-	-	-	-	-
Cancer of bronchus; lung (CCS 19)	-	-	0.59	0.54-0.64	-	-	-	-	-	-
Cancer; other respiratory and intrathoracic (CCS 20)	-	-	LF	LF	-	-	-	-	-	-
Cancer of bone and connective tissue (CCS 21)	-	-	0.69	0.60-0.79	-	-	-	-	-	-

Odds ratios (OR) and 95% confidence intervals (CI) by specialty cohort model for risk factors in hospital-wide readmission measure

Risk Factor	Medicine OR	Medicine 95% CI	Surgery/Gynecology OR	Surgery/Gynecology 95% CI	Cardiorespiratory OR	Cardiorespiratory 95% CI	Cardiovascular OR	Cardiovascular 95% CI	Neurology OR	Neurology 95% CI
Melanomas of skin (CCS 22)	-	-	LF	LF	-	-	-	-	-	-
Other non-epithelial cancer of skin (CCS 23)	-	-	0.48	0.41-0.56	-	-	-	-	-	-
Cancer of breast (CCS 24)	-	-	0.29	0.26-0.32	-	-	-	-	-	-
Cancer of uterus (CCS 25)	-	-	0.46	0.41-0.51	-	-	-	-	-	-
Cancer of cervix (CCS 26)	-	-	LF	LF	-	-	-	-	-	-
Cancer of ovary (CCS 27)	-	-	0.72	0.64-0.81	-	-	-	-	-	-
Cancer of other female genital organs (CCS 28)	-	-	0.62	0.53-0.73	-	-	-	-	-	-
Cancer of prostate (CCS 29)	-	-	0.33	0.30-0.36	-	-	-	-	-	-
Cancer of testis (CCS 30)	-	-	LF	LF	-	-	-	-	-	-
Cancer of other male genital organs (CCS 31)	-	-	LF	LF	-	-	-	-	-	-
Cancer of bladder (CCS 32)	-	-	0.86	0.79-0.94	-	-	-	-	-	-
Cancer of kidney and renal pelvis (CCS 33)	-	-	0.49	0.44-0.54	-	-	-	-	-	-
Cancer of other urinary organs (CCS 34)	-	-	0.64	0.54-0.76	-	-	-	-	-	-
Cancer of brain and nervous system (CCS 35)	-	-	0.92	0.81-1.04	-	-	-	-	-	-
Cancer of thyroid (CCS 36)	-	-	0.32	0.27-0.38	-	-	-	-	-	-
Hodgkin`s disease (CCS 37)	-	-	LF	LF	-	-	-	-	-	-
Non-Hodgkin's lymphoma (CCS 38)	-	-	1.31	1.18-1.46	-	-	-	-	-	-
Leukemias (CCS 39)	-	-	LF	LF	-	-	-	-	-	-
Multiple myeloma (CCS 40)	-	-	LF	LF	-	-	-	-	-	-
Cancer; other and unspecified primary (CCS 41)	-	-	LF	LF	-	-	-	-	-	-
Secondary malignancies (CCS 42)	-	-	0.73	0.67-0.79	-	-	-	-	-	-
Malignant neoplasm without specification of site (CCS 43)	-	-	LF	LF	-	-	-	-	-	-
Neoplasms of unspecified nature or uncertain behavior (CCS 44)	-	-	0.60	0.54-0.67	-	-	-	-	-	-
Maintenance chemotherapy; radiotherapy (CCS 45)	-	-	LF	LF	-	-	-	-	-	-
Benign neoplasm of uterus (CCS 46)	LF	LF	0.23	0.18-0.30	-	-	-	-	-	-
Other and unspecified benign neoplasm (CCS 47)	0.85	0.79-0.92	0.52	0.48-0.57	-	-	-	-	-	-
Thyroid disorders (CCS 48)	0.93	0.85-1.02	0.22	0.19-0.26	-	-	-	-	-	-
Diabetes mellitus without complication (CCS 49)	0.82	0.72-0.92	LF	LF	-	-	-	-	-	-
Diabetes mellitus with complications (CCS 50)	0.88	0.85-0.90	0.75	0.69-0.82	-	-	-	-	-	-
Other endocrine disorders (CCS 51)	1.01	0.97-1.05	0.40	0.34-0.48	-	-	-	-	-	-
Nutritional deficiencies (CCS 52)	1.12	1.04-1.22	LF	LF	-	-	-	-	-	-
Disorders of lipid metabolism (CCS 53)	LF	LF	LF	LF	-	-	-	-	-	-
Gout and other crystal arthropathies (CCS 54)	0.84	0.78-0.89	LF	LF	-	-	-	-	-	-
Fluid and electrolyte disorders (CCS 55)	0.93	0.91-0.95	0.85	0.76-0.96	-	-	-	-	-	-
Cystic fibrosis (CCS 56)	LF	LF	LF	LF	-	-	-	-	-	-
Immunity disorders (CCS 57)	LF	LF	LF	LF	-	-	-	-	-	-
Other nutritional; endocrine; and metabolic disorders (CCS 58)	0.97	0.93-1.01	0.51	0.45-0.58	-	-	-	-	-	-
Deficiency and other anemia (CCS 59)	1.01	0.99-1.04	0.82	0.71-0.95	-	-	-	-	-	-
Acute posthemorrhagic anemia (CCS 60)	1.00	0.95-1.05	LF	LF	-	-	-	-	-	-
Sickle cell anemia (CCS 61)	LF	LF	LF	LF	-	-	-	-	-	-
Coagulation and hemorrhagic disorders (CCS 62)	1.33	1.25-1.40	LF	LF	-	-	-	-	-	-
Diseases of white blood cells (CCS 63)	1.02	0.97-1.06	LF	LF	-	-	-	-	-	-
Other hematologic conditions (CCS 64)	LF	LF	LF	LF	-	-	-	-	-	-
Meningitis (except that caused by TB/STD) (CCS 76)	0.91	0.80-1.03	LF	LF	-	-	-	-	-	-
Encephalitis (except that caused by TB/STD) (CCS 77)	1.13	0.98-1.29	LF	LF	-	-	-	-	-	-
Other CNS infection and poliomyelitis (CCS 78)	-	-	LF	LF	-	-	-	-	LF	LF
Parkinson's disease (CCS 79)	-	-	1.15	0.97-1.37	-	-	-	-	0.88	0.81-0.95
Multiple sclerosis (CCS 80)	-	-	LF	LF	-	-	-	-	1.00	0.84-1.18
Other hereditary and degenerative nervous system conditions (CCS 81)	-	-	0.75	0.68-0.83	-	-	-	-	0.97	0.92-1.03
Paralysis (CCS 82)	-	-	LF	LF	-	-	-	-	LF	LF
Epilepsy; convulsions (CCS 83)	-	-	LF	LF	-	-	-	-	0.86	0.83-0.90
Headache; including migraine (CCS 84)	0.61	0.56-0.67	LF	LF	-	-	-	-	-	-
Coma; stupor; and brain damage (CCS 85)	-	-	LF	LF	-	-	-	-	0.95	0.89-1.02
Cataract (CCS 86)	LF	LF	LF	LF	-	-	-	-	-	-
Retinal detachments; defects; vascular occlusion; and retinopathy (CCS 87)	LF	LF	LF	LF	-	-	-	-	-	-

Odds ratios (OR) and 95% confidence intervals (CI) by specialty cohort model for risk factors in hospital-wide readmission measure

Risk Factor	Medicine OR	Medicine 95% CI	Surgery/Gynecology OR	Surgery/Gynecology 95% CI	Cardiorespiratory OR	Cardiorespiratory 95% CI	Cardiovascular OR	Cardiovascular 95% CI	Neurology OR	Neurology 95% CI
Glaucoma (CCS 88)	LF	LF	LF	LF	-	-	-	-	-	-
Blindness and vision defects (CCS 89)	0.59	0.50-0.69	LF	LF	-	-	-	-	-	-
Inflammation' infection of eye (except that caused by TB/STD) (CCS 90)	0.84	0.74-0.95	LF	LF	-	-	-	-	-	-
Other eye disorders (CCS 91)	0.73	0.62-0.87	LF	LF	-	-	-	-	-	-
Otitis media and related conditions (CCS 92)	LF	LF	LF	LF	-	-	-	-	-	-
Conditions associated with dizziness or vertigo (CCS 93)	0.43	0.41-0.45	LF	LF	-	-	-	-	-	-
Other ear & sense organ disorders (CCS 94)	LF	LF	LF	LF	-	-	-	-	-	-
Other nervous system disorders (CCS 95)	-	-	0.66	0.59-0.74	-	-	-	-	1.00	1.00-1.00
Heart valve disorders (CCS 96)	-	-	0.96	0.89-1.04	-	-	0.83	0.77-0.88	-	-
Peri-; endo-; and myocarditis; cardiomyopathy (except caused by TB/STD) (CCS 97)	-	-	0.87	0.78-0.97	-	-	1.00	1.00-1.00	-	-
Essential hypertension (CCS 98)	0.66	0.62-0.69	LF	LF	-	-	-	-	-	-
Hypertension with complications and secondary hypertension (CCS 99)	1.00	1.00-1.00	1.00	1.00-1.00	-	-	-	-	-	-
Acute myocardial infarction (CCS 100)	-	-	0.75	0.70-0.82	-	-	1.03	0.98-1.08	-	-
Coronary atherosclerosis and other heart disease (CCS 101)	-	-	0.59	0.55-0.64	-	-	0.66	0.63-0.70	-	-
Nonspecific chest pain (CCS 102)	-	-	0.67	0.56-0.80	-	-	0.53	0.50-0.55	-	-
Pulmonary heart disease (CCS 103)	-	-	0.80	0.73-0.88	0.80	0.77-0.82	-	-	-	-
Other and ill-defined heart disease (CCS 104)	-	-	LF	LF	-	-	0.62	0.54-0.71	-	-
Conduction disorders (CCS 105)	-	-	LF	LF	-	-	0.59	0.56-0.63	-	-
Cardiac dysrhythmias (CCS 106)	-	-	0.67	0.62-0.73	-	-	0.83	0.79-0.87	-	-
Cardiac arrest and ventricular fibrillation (CCS 107)	-	-	LF	LF	-	-	0.87	0.77-0.98	-	-
Congestive heart failure; non-hypertensive (CCS 108)	-	-	0.99	0.90-1.08	1.06	1.04-1.08	-	-	-	-
Acute cerebrovascular disease (CCS 109)	-	-	0.86	0.79-0.94	-	-	-	-	0.93	0.90-0.95
Occlusion or stenosis of precerebral arteries (CCS 110)	-	-	0.35	0.32-0.38	-	-	-	-	0.92	0.86-0.98
Other and ill-defined cerebrovascular disease (CCS 111)	-	-	0.54	0.46-0.63	-	-	-	-	0.67	0.61-0.74
Transient cerebral ischemia (CCS 112)	-	-	LF	LF	-	-	-	-	0.68	0.66-0.70
Late effects of cerebrovascular disease (CCS 113)	-	-	LF	LF	-	-	-	-	0.86	0.80-0.92
Peripheral and visceral atherosclerosis (CCS 114)	-	-	0.70	0.64-0.75	-	-	0.72	0.68-0.76	-	-
Aortic; peripheral; and visceral artery aneurysms (CCS 115)	-	-	0.62	0.57-0.68	-	-	0.80	0.73-0.88	-	-
Aortic and peripheral arterial embolism or thrombosis (CCS 116)	-	-	0.85	0.78-0.94	-	-	0.85	0.75-0.95	-	-
Other circulatory disease (CCS 117)	-	-	0.72	0.64-0.81	-	-	0.71	0.68-0.75	-	-
Phlebitis; thrombophlebitis and thromboembolism (CCS 118)	0.75	0.72-0.77	0.71	0.65-0.78	-	-	-	-	-	-
Varicose veins of lower extremity (CCS 119)	LF	LF	LF	LF	-	-	-	-	-	-
Hemorrhoids (CCS 120)	0.75	0.71-0.79	LF	LF	-	-	-	-	-	-
Other diseases of veins and lymphatics (CCS 121)	0.86	0.81-0.92	0.62	0.53-0.73	-	-	-	-	-	-
Pneumonia (CCS 122)	-	-	0.91	0.82-1.01	0.83	0.82-0.85	-	-	-	-
Influenza (CCS 123)	0.59	0.51-0.69	LF	LF	-	-	-	-	-	-
Acute and chronic tonsillitis (CCS 124)	LF	LF	LF	LF	-	-	-	-	-	-
Acute bronchitis (CCS 125)	-	-	LF	LF	0.64	0.61-0.67	-	-	-	-
Other upper respiratory infections (CCS 126)	0.65	0.60-0.70	LF	LF	-	-	-	-	-	-
Chronic obstructive pulmonary disease and bronchiectasis (CCS 127)	-	-	1.17	1.05-1.31	0.99	0.97-1.01	-	-	-	-
Asthma (CCS 128)	-	-	LF	LF	0.84	0.82-0.86	-	-	-	-
Aspiration pneumonitis; food/vomitus (CCS 129)	0.97	0.95-0.99	1.02	0.89-1.16	-	-	-	-	-	-
Pleurisy; pneumothorax; pulmonary collapse (CCS 130)	1.22	1.18-1.26	0.66	0.59-0.74	-	-	-	-	-	-
Respiratory failure; insufficiency; arrest (adult) (CCS 131)	-	-	0.90	0.81-1.01	1.00	1.00-1.00	-	-	-	-
Lung disease due to external agents (CCS 132)	0.94	0.83-1.06	LF	LF	-	-	-	-	-	-
Other lower respiratory disease (CCS 133)	0.89	0.86-0.92	0.58	0.51-0.66	-	-	-	-	-	-
Other upper respiratory disease (CCS 134)	0.81	0.76-0.86	0.58	0.50-0.69	-	-	-	-	-	-
Intestinal infection (CCS 135)	1.05	1.02-1.08	1.02	0.88-1.18	-	-	-	-	-	-

Odds ratios (OR) and 95% confidence intervals (CI) by specialty cohort model for risk factors in hospital-wide readmission measure

Risk Factor	Medicine OR	Medicine 95% CI	Surgery/Gynecology OR	Surgery/Gynecology 95% CI	Cardiorespiratory OR	Cardiorespiratory 95% CI	Cardiovascular OR	Cardiovascular 95% CI	Neurology OR	Neurology 95% CI
Disorders of teeth and jaw (CCS 136)	0.68	0.59-0.79	LF	LF	-	-	-	-	-	-
Diseases of mouth; excluding dental (CCS 137)	0.80	0.73-0.88	LF	LF	-	-	-	-	-	-
Esophageal disorders (CCS 138)	0.77	0.74-0.80	0.61	0.54-0.69	-	-	-	-	-	-
Gastroduodenal ulcer (except hemorrhage) (CCS 139)	0.83	0.78-0.89	0.86	0.76-0.97	-	-	-	-	-	-
Gastritis and duodenitis (CCS 140)	0.84	0.81-0.87	LF	LF	-	-	-	-	-	-
Other disorders of stomach and duodenum (CCS 141)	1.02	0.98-1.06	0.89	0.78-1.02	-	-	-	-	-	-
Appendicitis and other appendiceal conditions (CCS 142)	LF	LF	0.45	0.41-0.50	-	-	-	-	-	-
Abdominal hernia (CCS 143)	1.07	1.00-1.14	0.52	0.47-0.56	-	-	-	-	-	-
Regional enteritis and ulcerative colitis (CCS 144)	1.13	1.06-1.20	1.04	0.90-1.21	-	-	-	-	-	-
Intestinal obstruction without hernia (CCS 145)	0.90	0.87-0.92	0.71	0.65-0.77	-	-	-	-	-	-
Diverticulosis and diverticulitis (CCS 146)	0.79	0.77-0.81	0.70	0.64-0.76	-	-	-	-	-	-
Anal and rectal conditions (CCS 147)	0.99	0.92-1.07	0.54	0.48-0.60	-	-	-	-	-	-
Peritonitis and intestinal abscess (CCS 148)	1.08	1.00-1.17	LF	LF	-	-	-	-	-	-
Biliary tract disease (CCS 149)	0.83	0.81-0.86	0.53	0.48-0.57	-	-	-	-	-	-
Other liver diseases (CCS 151)	1.28	1.24-1.33	1.05	0.90-1.22	-	-	-	-	-	-
Pancreatic disorders (not diabetes) (CCS 152)	0.81	0.79-0.84	0.57	0.52-0.63	-	-	-	-	-	-
Gastrointestinal hemorrhage (CCS 153)	0.82	0.80-0.83	0.82	0.74-0.91	-	-	-	-	-	-
Noninfectious gastroenteritis (CCS 154)	0.78	0.75-0.80	LF	LF	-	-	-	-	-	-
Other gastrointestinal disorders (CCS 155)	0.97	0.94-1.00	0.68	0.62-0.74	-	-	-	-	-	-
Nephritis; nephrosis; renal sclerosis (CCS 156)	LF	LF	LF	LF	-	-	-	-	-	-
Acute and unspecified renal failure (CCS 157)	1.04	1.02-1.07	1.04	0.94-1.14	-	-	-	-	-	-
Chronic renal failure (CCS 158)	0.87	0.81-0.94	LF	LF	-	-	-	-	-	-
Urinary tract infections (CCS 159)	0.90	0.88-0.92	0.87	0.79-0.95	-	-	-	-	-	-
Calculus of urinary tract (CCS 160)	0.79	0.75-0.83	0.61	0.55-0.67	-	-	-	-	-	-
Other diseases of kidney and ureters (CCS 161)	1.00	0.94-1.08	0.67	0.59-0.75	-	-	-	-	-	-
Other diseases or bladder and urethra (CCS 162)	0.99	0.90-1.08	0.64	0.57-0.72	-	-	-	-	-	-
Genitourinary symptoms and ill-defined conditions (CCS 163)	0.98	0.93-1.03	0.72	0.64-0.80	-	-	-	-	-	-
Hyperplasia of prostate (CCS 164)	1.03	0.95-1.12	0.36	0.33-0.39	-	-	-	-	-	-
Inflammatory conditions of male genital organs (CCS 165)	0.70	0.64-0.77	LF	LF	-	-	-	-	-	-
Other male genital disorders (CCS 166)	LF	LF	0.43	0.36-0.51	-	-	-	-	-	-
Nonmalignant breast conditions (CCS 167)	0.67	0.55-0.80	LF	LF	-	-	-	-	-	-
Inflammatory diseases of female pelvic organs (CCS 168)	LF	LF	LF	LF	-	-	-	-	-	-
Endometriosis (CCS 169)	LF	LF	LF	LF	-	-	-	-	-	-
Prolapse of female genital organs (CCS 170)	LF	LF	0.18	0.16-0.20	-	-	-	-	-	-
Menstrual disorders (CCS 171)	LF	LF	LF	LF	-	-	-	-	-	-
Ovarian cyst (CCS 172)	LF	LF	0.32	0.25-0.41	-	-	-	-	-	-
Menopausal disorders (CCS 173)	LF	LF	0.34	0.26-0.44	-	-	-	-	-	-
Other female genital disorders (CCS 175)	0.92	0.79-1.07	0.41	0.36-0.46	-	-	-	-	-	-
OB-related trauma to perineum and vulva (CCS 193)	-	-	LF	LF	-	-	-	-	-	-
Skin and subcutaneous tissue infections (CCS 197)	0.78	0.76-0.79	0.68	0.62-0.76	-	-	-	-	-	-
Other inflammatory condition of skin (CCS 198)	1.11	0.99-1.24	LF	LF	-	-	-	-	-	-
Chronic ulcer of skin (CCS 199)	0.92	0.88-0.96	0.72	0.65-0.80	-	-	-	-	-	-
Other skin disorders (CCS 200)	LF	LF	LF	LF	-	-	-	-	-	-
Infective arthritis and osteomyelitis (except that caused by TB/STD) (CCS 201)	0.86	0.81-0.92	0.66	0.60-0.73	-	-	-	-	-	-
Rheumatoid arthritis and related disease (CCS 202)	0.82	0.73-0.91	0.35	0.29-0.43	-	-	-	-	-	-
Osteoarthritis (CCS 203)	0.71	0.66-0.76	0.27	0.25-0.29	-	-	-	-	-	-
Other non-traumatic joint disorders (CCS 204)	0.76	0.71-0.80	0.32	0.28-0.37	-	-	-	-	-	-
Spondylosis; intervertebral disc disorders; other back problems (CCS 205)	0.92	0.89-0.95	0.40	0.37-0.44	-	-	-	-	-	-
Osteoporosis (CCS 206)	LF	LF	LF	LF	-	-	-	-	-	-
Pathological fracture (CCS 207)	1.03	0.99-1.08	0.70	0.64-0.76	-	-	-	-	-	-
Acquired foot deformities (CCS 208)	LF	LF	0.24	0.19-0.32	-	-	-	-	-	-
Other acquired deformities (CCS 209)	LF	LF	0.43	0.39-0.48	-	-	-	-	-	-

Odds ratios (OR) and 95% confidence intervals (CI) by specialty cohort model for risk factors in hospital-wide readmission measure

Risk Factor	Medicine OR	Medicine 95% CI	Surgery/Gynecology OR	Surgery/Gynecology 95% CI	Cardiorespiratory OR	Cardiorespiratory 95% CI	Cardiovascular OR	Cardiovascular 95% CI	Neurology OR	Neurology 95% CI
Systemic lupus erythematosus and connective tissue disorders (CCS 210)	1.10	0.96-1.25	LF	LF	-	-	-	-	-	-
Other connective tissue disease (CCS 211)	0.80	0.77-0.83	0.42	0.38-0.46	-	-	-	-	-	-
Other bone disease and musculoskeletal deformities (CCS 212)	0.77	0.71-0.84	0.46	0.41-0.50	-	-	-	-	-	-
Cardiac and circulatory congenital anomalies (CCS 213)	-	-	0.60	0.50-0.72	-	-	0.93	0.75-1.15	-	-
Digestive congenital anomalies (CCS 214)	LF	LF	LF	LF	-	-	-	-	-	-
Genitourinary congenital anomalies (CCS 215)	LF	LF	LF	LF	-	-	-	-	-	-
Nervous system congenital anomalies (CCS 216)	-	-	LF	LF	-	-	-	-	LF	LF
Other congenital anomalies (CCS 217)	LF	LF	0.42	0.36-0.48	-	-	-	-	-	-
Joint disorders and dislocations; trauma-related (CCS 225)	LF	LF	0.49	0.44-0.56	-	-	-	-	-	-
Fracture of neck or femur (hip) (CCS 226)	0.78	0.73-0.83	0.58	0.54-0.63	-	-	-	-	-	-
Spinal cord injury (CCS 227)	-	-	0.85	0.71-1.01	-	-	-	-	LF	LF
Skull and face fractures (CCS 228)	0.67	0.62-0.74	0.62	0.52-0.73	-	-	-	-	-	-
Fracture of upper limb (CCS 229)	0.97	0.93-1.02	0.44	0.41-0.48	-	-	-	-	-	-
Fracture of lower limb (CCS 230)	0.87	0.82-0.91	0.58	0.53-0.62	-	-	-	-	-	-
Other fractures (CCS 231)	0.80	0.77-0.82	0.68	0.62-0.74	-	-	-	-	-	-
Sprains and strains (CCS 232)	0.71	0.66-0.77	0.30	0.26-0.35	-	-	-	-	-	-
Intracranial injury (CCS 233)	-	-	0.91	0.83-0.99	-	-	-	-	1.07	1.03-1.10
Crushing injury or internal injury (CCS 234)	0.92	0.86-0.98	0.79	0.70-0.91	-	-	-	-	-	-
Open wounds of head; neck; and trunk (CCS 235)	0.67	0.61-0.74	LF	LF	-	-	-	-	-	-
Open wounds of extremities (CCS 236)	0.87	0.77-0.97	0.54	0.46-0.63	-	-	-	-	-	-
Complication of device; implant or graft (CCS 237)	1.02	1.00-1.05	0.64	0.59-0.69	-	-	-	-	-	-
Complications of surgical procedures or medical care (CCS 238)	0.88	0.86-0.90	0.75	0.69-0.81	-	-	-	-	-	-
Superficial injury; contusion (CCS 239)	0.84	0.80-0.88	LF	LF	-	-	-	-	-	-
Burns (CCS 240)	0.78	0.67-0.92	0.77	0.64-0.93	-	-	-	-	-	-
Poisoning by psychotropic agents (CCS 241)	0.71	0.65-0.79	LF	LF	-	-	-	-	-	-
Poisoning by other medications and drugs (CCS 242)	0.78	0.74-0.82	LF	LF	-	-	-	-	-	-
Poisoning by nonmedicinal substances (CCS 243)	0.48	0.40-0.58	LF	LF	-	-	-	-	-	-
Other injuries and conditions due to external causes (CCS 244)	0.75	0.72-0.79	0.64	0.53-0.76	-	-	-	-	-	-
Syncope (CCS 245)	0.58	0.56-0.60	0.58	0.49-0.68	-	-	-	-	-	-
Fever of unknown origin (CCS 246)	0.86	0.82-0.90	LF	LF	-	-	-	-	-	-
Lymphadenitis (CCS 247)	LF	LF	LF	LF	-	-	-	-	-	-
Gangrene (CCS 248)	0.92	0.82-1.02	0.83	0.76-0.90	-	-	-	-	-	-
Shock (CCS 249)	LF	LF	LF	LF	-	-	-	-	-	-
Nausea and vomiting (CCS 250)	1.03	0.98-1.08	LF	LF	-	-	-	-	-	-
Abdominal pain (CCS 251)	0.86	0.83-0.90	LF	LF	-	-	-	-	-	-
Malaise and fatigue (CCS 252)	0.86	0.81-0.90	LF	LF	-	-	-	-	-	-
Allergic reactions (CCS 253)	0.81	0.74-0.88	LF	LF	-	-	-	-	-	-
Administrative/social admission (CCS 255)	LF	LF	LF	LF	-	-	-	-	-	-
Medical examination/evaluation (CCS 256)	LF	LF	LF	LF	-	-	-	-	-	-
Other aftercare (CCS 257)	LF	LF	LF	LF	-	-	-	-	-	-
Other screening for suspected conditions (not mental disorders or infectious disease) (CCS 258)	LF	LF	LF	LF	-	-	-	-	-	-
Residual codes; unclassified (CCS 259)	0.87	0.84-0.90	LF	LF	-	-	-	-	-	-
Delirium, dementia, and amnestic and other cognitive disorders (CCS 653)	0.83	0.80-0.86	LF	LF	-	-	-	-	-	-
Alcohol-related disorders (CCS 660)	0.82	0.77-0.87	LF	LF	-	-	-	-	-	-
Substance-related disorders (CCS 661)	0.93	0.88-0.98	LF	LF	-	-	-	-	-	-
Screening and history of mental health and substance abuse codes (CCS 663)	1.16	1.08-1.26	LF	LF	-	-	-	-	-	-
Low frequency CCS combined (medicine model)	0.86	0.83-0.90	-	-	-	-	-	-	-	-
Low frequency CCS combined (surgery/gynecology model)	-	-	0.69	0.64-0.75	-	-	-	-	-	-
Low frequency CCS combined (neurology model)	-	-	-	-	-	-	-	-	1.15	1.04-1.28

"-" = Condition indicator not included in specialty cohort model.

Odds ratios (OR) and 95% confidence intervals (CI) by specialty cohort model for risk factors in hospital-wide readmission measure

Risk Factor	Medicine OR	Medicine 95% CI	Surgery/Gynecology OR	Surgery/Gynecology 95% CI	Cardiorespiratory OR	Cardiorespiratory 95% CI	Cardiovascular OR	Cardiovascular 95% CI	Neurology OR	Neurology 95% CI

LF = Low Frequency (condition categories in each model with fewer than 1,000 admissions in 2010 national data are grouped together into a single "low frequency CCS combined" risk variable).

Case mix and service mix information by specialty cohort model for your hospital and the nation for hospital-wide readmission measure

Risk Factor	Percentage of admissions									
	Medicine Hospital	Medicine Nation	Surgery/Gynecology Hospital	Surgery/Gynecology Nation	Cardiorespiratory Hospital	Cardiorespiratory Nation	Cardiovascular Hospital	Cardiovascular Nation	Neurology Hospital	Neurology Nation
N	26	3,068,392	NQ	2,065,120	NQ	1,310,586	12	779,799	NQ	456,207
Mean age	78.50	79.50	NQ	76.20	NQ	79.20	77.80	78.80	NQ	79.60
(standard deviation)	7.20	8.20	NQ	7.30	NQ	8.20	7.00	8.00	NQ	8.10
Metastatic cancer/acute leukemia	2.00%	4.00%	NQ	3.74%	NQ	2.50%	0.14%	1.64%	NQ	2.67%
Severe cancer	4.02%	6.02%	NQ	3.38%	NQ	5.81%	1.86%	3.36%	NQ	3.68%
Other major cancers	5.69%	7.69%	NQ	5.33%	NQ	4.65%	2.63%	4.13%	NQ	4.96%
Other hematological disorders	1.80%	3.80%	NQ	1.20%	NQ	2.70%	0.30%	1.80%	NQ	1.64%
Coagulation defects and other specified hematological disorders	2.98%	4.98%	NQ	2.31%	NQ	4.56%	1.62%	3.12%	NQ	2.98%
Iron deficiency	36.29%	38.29%	NQ	34.85%	NQ	35.01%	23.37%	24.87%	NQ	22.56%
End-stage liver disease	0.30%	2.30%	NQ	0.76%	NQ	1.07%	0.00%	0.73%	NQ	0.83%
Pancreatic disease	0.85%	2.85%	NQ	1.62%	NQ	1.40%	0.00%	1.32%	NQ	1.14%
Dialysis status	0.00%	1.68%	NQ	0.98%	NQ	1.32%	0.00%	1.25%	NQ	0.98%
Acute renal failure	20.73%	22.73%	NQ	10.75%	NQ	24.79%	14.82%	16.32%	NQ	13.50%
Transplants	0.00%	0.65%	NQ	0.35%	NQ	0.39%	0.00%	0.30%	NQ	0.28%
Severe Infection	0.00%	1.59%	NQ	0.88%	NQ	1.59%	0.00%	0.70%	NQ	1.03%
Other infectious disease & pneumonias	23.52%	25.52%	NQ	11.72%	NQ	37.03%	14.66%	16.16%	NQ	15.28%
Septicemia/shock	5.55%	7.55%	NQ	2.90%	NQ	5.61%	1.45%	2.95%	NQ	3.24%
CHF	18.65%	20.65%	NQ	10.00%	NQ	36.58%	19.79%	21.29%	NQ	13.63%
Coronary atherosclerosis or angina, cerebrovascular disease	49.63%	51.63%	NQ	42.14%	NQ	60.19%	60.73%	62.23%	NQ	47.89%
Specified arrhythmias	18.31%	20.31%	NQ	12.04%	NQ	28.44%	24.58%	26.08%	NQ	17.23%
Cardiorespiratory failure or cardiorespiratory shock	6.76%	8.76%	NQ	4.21%	NQ	18.60%	4.83%	6.33%	NQ	5.07%
Coronary obstructive pulmonary disease	20.50%	22.50%	NQ	16.45%	NQ	46.83%	20.68%	22.18%	NQ	16.07%
Fibrosis of lung or other chronic lung disorders	0.79%	2.79%	NQ	1.65%	NQ	7.09%	1.02%	2.52%	NQ	1.69%
Protein-calorie malnutrition	9.43%	11.43%	NQ	5.74%	NQ	9.25%	2.90%	4.40%	NQ	6.45%
Disorders of fluid, electrolyte, acid-base	27.53%	29.53%	NQ	14.52%	NQ	29.98%	17.86%	19.36%	NQ	20.33%
Rheumatoid arthritis and inflammatory connective tissue disease	2.36%	4.36%	NQ	3.64%	NQ	4.05%	2.12%	3.62%	NQ	3.28%
Diabetes mellitus	31.03%	33.03%	NQ	26.89%	NQ	35.94%	30.27%	31.77%	NQ	30.54%
Ulcers	4.80%	6.80%	NQ	4.08%	NQ	4.88%	1.39%	2.89%	NQ	2.78%
Hemiplegia, paraplegia, paralysis, functional disability	3.43%	5.43%	NQ	2.79%	NQ	3.80%	1.47%	2.97%	NQ	7.56%
Seizure disorders and convulsions	1.98%	3.98%	NQ	1.89%	NQ	2.98%	0.92%	2.42%	NQ	8.70%
Respirator dependence/tracheostomy status	0.00%	0.40%	NQ	0.14%	NQ	0.50%	0.00%	0.12%	NQ	0.16%
Drug and alcohol disorders	0.90%	2.90%	NQ	1.89%	NQ	2.29%	0.12%	1.62%	NQ	2.59%
Psychiatric comorbidity	16.84%	18.84%	NQ	12.99%	NQ	20.52%	14.25%	15.75%	NQ	18.58%
Hip fracture/dislocatsion	0.96%	2.96%	NQ	2.04%	NQ	2.44%	0.09%	1.59%	NQ	2.20%
Conditions Indicator										
Tuberculosis (CCS 1)	LF	LF	LF	LF	-	-	-	-	-	-
Septicemia (except in labor) (CCS 2)	20.00%	9.03%	NQ	1.23%	-	-	-	-	-	-
Bacterial infection; unspecified site (CCS 3)	NQ	0.04%	LF	LF	-	-	-	-	-	-
Mycoses (CCS 4)	NQ	0.27%	LF	LF	-	-	-	-	-	-
HIV infection (CCS 5)	LF	LF	LF	LF	-	-	-	-	-	-
Hepatitis (CCS 6)	NQ	0.11%	LF	LF	-	-	-	-	-	-
Viral infection (CCS 7)	NQ	0.36%	LF	LF	-	-	-	-	-	-
Other infections' including parasitic (CCS 8)	NQ	0.07%	LF	LF	-	-	-	-	-	-
Sexually transmitted infections (not HIV or hepatitis) (CCS 9)	LF	LF	LF	LF	-	-	-	-	-	-
Immunizations and screening for infectious disease (CCS 10)	LF	LF	LF	LF	-	-	-	-	-	-
Cancer of head and neck (CCS 11)	-	-	NQ	0.23%	-	-	-	-	-	-
Cancer of esophagus (CCS 12)	-	-	NQ	0.05%	-	-	-	-	-	-
Cancer of stomach (CCS 13)	-	-	NQ	0.17%	-	-	-	-	-	-
Cancer of colon (CCS 14)	-	-	NQ	1.52%	-	-	-	-	-	-

Case mix and service mix information by specialty cohort model for your hospital and the nation for hospital-wide readmission measure

Risk Factor	Percentage of admissions									
	Medicine Hospital	Medicine Nation	Surgery/Gynecology Hospital	Surgery/Gynecology Nation	Cardiorespiratory Hospital	Cardiorespiratory Nation	Cardiovascular Hospital	Cardiovascular Nation	Neurology Hospital	Neurology Nation
Cancer of rectum and anus (CCS 15)	-	-	NQ	0.43%	-	-	-	-	-	-
Cancer of liver and intrahepatic bile duct (CCS 16)	-	-	NQ	0.06%	-	-	-	-	-	-
Cancer of pancreas (CCS 17)	-	-	NQ	0.18%	-	-	-	-	-	-
Cancer of other GI organs; peritoneum (CCS 18)	-	-	NQ	0.18%	-	-	-	-	-	-
Cancer of bronchus; lung (CCS 19)	-	-	NQ	0.97%	-	-	-	-	-	-
Cancer; other respiratory and intrathoracic (CCS 20)	-	-	LF	LF	-	-	-	-	-	-
Cancer of bone and connective tissue (CCS 21)	-	-	NQ	0.10%	-	-	-	-	-	-
Melanomas of skin (CCS 22)	-	-	LF	LF	-	-	-	-	-	-
Other non-epithelial cancer of skin (CCS 23)	-	-	NQ	0.10%	-	-	-	-	-	-
Cancer of breast (CCS 24)	-	-	NQ	0.86%	-	-	-	-	-	-
Cancer of uterus (CCS 25)	-	-	NQ	0.42%	-	-	-	-	-	-
Cancer of cervix (CCS 26)	-	-	LF	LF	-	-	-	-	-	-
Cancer of ovary (CCS 27)	-	-	NQ	0.18%	-	-	-	-	-	-
Cancer of other female genital organs (CCS 28)	-	-	NQ	0.08%	-	-	-	-	-	-
Cancer of prostate (CCS 29)	-	-	NQ	0.87%	-	-	-	-	-	-
Cancer of testis (CCS 30)	-	-	LF	LF	-	-	-	-	-	-
Cancer of other male genital organs (CCS 31)	-	-	LF	LF	-	-	-	-	-	-
Cancer of bladder (CCS 32)	-	-	NQ	0.69%	-	-	-	-	-	-
Cancer of kidney and renal pelvis (CCS 33)	-	-	NQ	0.52%	-	-	-	-	-	-
Cancer of other urinary organs (CCS 34)	-	-	NQ	0.07%	-	-	-	-	-	-
Cancer of brain and nervous system (CCS 35)	-	-	NQ	0.13%	-	-	-	-	-	-
Cancer of thyroid (CCS 36)	-	-	NQ	0.12%	-	-	-	-	-	-
Hodgkin's disease (CCS 37)	-	-	LF	LF	-	-	-	-	-	-
Non-Hodgkin's lymphoma (CCS 38)	-	-	NQ	0.19%	-	-	-	-	-	-
Leukemias (CCS 39)	-	-	LF	LF	-	-	-	-	-	-
Multiple myeloma (CCS 40)	-	-	LF	LF	-	-	-	-	-	-
Cancer; other and unspecified primary (CCS 41)	-	-	LF	LF	-	-	-	-	-	-
Secondary malignancies (CCS 42)	-	-	NQ	0.85%	-	-	-	-	-	-
Malignant neoplasm without specification of site (CCS 43)	-	-	LF	LF	-	-	-	-	-	-
Neoplasms of unspecified nature or uncertain behavior (CCS 44)	-	-	NQ	0.23%	-	-	-	-	-	-
Maintenance chemotherapy; radiotherapy (CCS 45)	-	-	LF	LF	-	-	-	-	-	-
Benign neoplasm of uterus (CCS 46)	LF	LF	NQ	0.07%	-	-	-	-	-	-
Other and unspecified benign neoplasm (CCS 47)	NQ	0.19%	NQ	1.21%	-	-	-	-	-	-
Thyroid disorders (CCS 48)	NQ	0.11%	NQ	0.21%	-	-	-	-	-	-
Diabetes mellitus without complication (CCS 49)	NQ	0.07%	LF	LF	-	-	-	-	-	-
Diabetes mellitus with complications (CCS 50)	NQ	2.33%	NQ	0.97%	-	-	-	-	-	-
Other endocrine disorders (CCS 51)	NQ	0.55%	NQ	0.10%	-	-	-	-	-	-
Nutritional deficiencies (CCS 52)	NQ	0.12%	LF	LF	-	-	-	-	-	-
Disorders of lipid metabolism (CCS 53)	LF	LF	LF	LF	-	-	-	-	-	-
Gout and other crystal arthropathies (CCS 54)	NQ	0.22%	LF	LF	-	-	-	-	-	-
Fluid and electrolyte disorders (CCS 55)	20.00%	5.12%	NQ	0.12%	-	-	-	-	-	-
Cystic fibrosis (CCS 56)	LF	LF	LF	LF	-	-	-	LF	-	-
Immunity disorders (CCS 57)	LF	LF	LF	LF	-	-	-	-	-	-

Case mix and service mix information by specialty cohort model for your hospital and the nation for hospital-wide readmission measure

Risk Factor	Percentage of admissions									
	Medicine Hospital	Medicine Nation	Surgery/Gynecology Hospital	Surgery/Gynecology Nation	Cardiorespiratory Hospital	Cardiorespiratory Nation	Cardiovascular Hospital	Cardiovascular Nation	Neurology Hospital	Neurology Nation
Other nutritional; endocrine; and metabolic disorders (CCS 58)	NQ	0.54%	NQ	0.21%	-	-	-	-	-	-
Deficiency and other anemia (CCS 59)	5.00%	2.67%	NQ	0.07%	-	-	-	-	-	-
Acute posthemorrhagic anemia (CCS 60)	NQ	0.40%	LF	LF	-	-	-	-	-	-
Sickle cell anemia (CCS 61)	LF	LF	LF	LF	-	-	-	-	-	-
Coagulation and hemorrhagic disorders (CCS 62)	NQ	0.24%	LF	LF	-	-	-	-	-	-
Diseases of white blood cells (CCS 63)	NQ	0.45%	LF	LF	-	-	-	-	-	-
Other hematologic conditions (CCS 64)	LF	LF	LF	LF	-	-	-	-	-	-
Meningitis (except that caused by TB/STD) (CCS 76)	NQ	0.06%	LF	LF	-	-	-	-	-	-
Encephalitis (except that caused by TB/STD) (CCS 77)	NQ	0.05%	LF	LF	-	-	-	-	-	-
Other CNS infection and poliomyelitis (CCS 78)	-	-	LF	LF	-	-	-	-	LF	LF
Parkinson's disease (CCS 79)	-	-	NQ	0.05%	-	-	-	-	NQ	1.18%
Multiple sclerosis (CCS 80)	-	-	LF	LF	-	-	-	-	NQ	0.24%
Other hereditary and degenerative nervous system conditions (CCS 81)	-	-	NQ	0.27%	-	-	-	-	NQ	2.16%
Paralysis (CCS 82)	-	-	LF	LF	-	-	-	-	LF	LF
Epilepsy; convulsions (CCS 83)	-	-	LF	LF	-	-	-	-	NQ	8.36%
Headache; including migraine (CCS 84)	NQ	0.19%	LF	LF	-	-	-	-	-	-
Coma; stupor; and brain damage (CCS 85)	-	-	LF	LF	-	-	-	-	NQ	1.29%
Cataract (CCS 86)	LF	LF	LF	LF	-	-	-	-	-	-
Retinal detachments; defects; vascular occlusion; and retinopathy (CCS 87)	LF	LF	LF	LF	-	-	-	-	-	-
Glaucoma (CCS 88)	LF	LF	LF	LF	-	-	-	-	-	-
Blindness and vision defects (CCS 89)	1.00%	0.05%	LF	LF	-	-	-	-	-	-
Inflammation' infection of eye (except that caused by TB/STD) (CCS 90)	1.00%	0.07%	LF	LF	-	-	-	-	-	-
Other eye disorders (CCS 91)	1.00%	0.04%	LF	LF	-	-	-	-	-	-
Otitis media and related conditions (CCS 92)	LF	LF	LF	LF	-	-	-	-	-	-
Conditions associated with dizziness or vertigo (CCS 93)	1.00%	0.96%	LF	LF	-	-	-	-	-	-
Other ear & sense organ disorders (CCS 94)	LF	LF	LF	LF	-	-	-	-	-	-
Other nervous system disorders (CCS 95)	-	-	NQ	0.20%	-	-	-	-	NQ	13.60%
Heart valve disorders (CCS 96)	-	-	NQ	1.68%	-	-	NQ	1.26%	-	-
Peri-; endo-; and myocarditis; cardiomyopathy (except caused by TB/STD) (CCS 97)	-	-	NQ	0.16%	-	-	NQ	1.47%	-	-
Essential hypertension (CCS 98)	NQ	0.61%	LF	LF	-	-	-	-	-	-
Hypertension with complications and secondary hypertension (CCS 99)	5.00%	2.23%	NQ	0.18%	-	-	-	-	-	-
Acute myocardial infarction (CCS 100)	-	-	NQ	3.91%	-	-	20.00%	13.30%	-	-
Coronary atherosclerosis and other heart disease (CCS 101)	-	-	NQ	6.50%	-	-	30.00%	12.10%	-	-
Nonspecific chest pain (CCS 102)	-	-	NQ	0.05%	-	-	20.00%	16.50%	-	-
Pulmonary heart disease (CCS 103)	-	-	NQ	0.40%	NQ	3.64%	-	-	-	-
Other and ill-defined heart disease (CCS 104)	-	-	LF	LF	-	-	NQ	0.29%	-	-
Conduction disorders (CCS 105)	-	-	LF	LF	-	-	NQ	3.80%	-	-
Cardiac dysrhythmias (CCS 106)	-	-	NQ	1.22%	-	-	NQ	39.70%	-	-
Cardiac arrest and ventricular fibrillation (CCS 107)	-	-	LF	LF	-	-	NQ	0.26%	-	-
Congestive heart failure; non-hypertensive (CCS 108)	-	-	NQ	0.51%	NQ	33.20%	-	-	-	-
Acute cerebrovascular disease (CCS 109)	-	-	NQ	0.71%	-	-	-	-	NQ	42.90%

Case mix and service mix information by specialty cohort model for your hospital and the nation for hospital-wide readmission measure

Risk Factor	Percentage of admissions									
	Medicine Hospital	Medicine Nation	Surgery/Gynecology Hospital	Surgery/Gynecology Nation	Cardiorespiratory Hospital	Cardiorespiratory Nation	Cardiovascular Hospital	Cardiovascular Nation	Neurology Hospital	Neurology Nation
Occlusion or stenosis of precerebral arteries (CCS 110)	-	-	NQ	2.59%	-	-	-	-	NQ	1.62%
Other and ill-defined cerebrovascular disease (CCS 111)	-	-	NQ	0.11%	-	-	-	-	NQ	0.98%
Transient cerebral ischemia (CCS 112)	-	-	LF	LF	-	-	-	-	NQ	17.10%
Late effects of cerebrovascular disease (CCS 113)	-	-	LF	LF	-	-	-	-	NQ	1.39%
Peripheral and visceral atherosclerosis (CCS 114)	-	-	NQ	2.26%	-	-	20.00%	3.38%	-	-
Aortic; peripheral; and visceral artery aneurysms (CCS 115)	-	-	NQ	1.43%	-	-	NQ	0.56%	-	-
Aortic and peripheral arterial embolism or thrombosis (CCS 116)	-	-	NQ	0.39%	-	-	NQ	0.27%	-	-
Other circulatory disease (CCS 117)	-	-	NQ	0.15%	-	-	NQ	6.98%	-	-
Phlebitis; thrombophlebitis and thromboembolism (CCS 118)	5.00%	1.55%	NQ	0.57%	-	-	-	-	-	-
Varicose veins of lower extremity (CCS 119)	LF	LF	LF	LF	-	-	-	-	-	-
Hemorrhoids (CCS 120)	NQ	0.33%	LF	LF	-	-	-	-	-	-
Other diseases of veins and lymphatics (CCS 121)	NQ	0.20%	NQ	0.06%	-	-	-	-	-	-
Pneumonia (CCS 122)	-	-	NQ	0.24%	NQ	28.60%	-	-	-	-
Influenza (CCS 123)	NQ	0.06%	LF	LF	-	-	-	-	-	-
Acute and chronic tonsillitis (CCS 124)	LF	LF	LF	LF	-	-	-	-	-	-
Acute bronchitis (CCS 125)	-	-	LF	LF	NQ	1.65%	-	-	-	-
Other upper respiratory infections (CCS 126)	NQ	0.22%	LF	LF	-	-	-	-	-	-
Chronic obstructive pulmonary disease and bronchiectasis (CCS 127)	-	-	NQ	0.14%	NQ	21.60%	-	-	-	-
Asthma (CCS 128)	-	-	LF	LF	NQ	4.29%	-	-	-	-
Aspiration pneumonitis; food/vomitus (CCS 129)	5.00%	2.74%	NQ	0.08%	-	-	-	-	-	-
Pleurisy; pneumothorax; pulmonary collapse (CCS 130)	NQ	0.92%	NQ	0.21%	-	-	-	-	-	-
Respiratory failure; insufficiency; arrest (adult) (CCS 131)	-	-	NQ	0.16%	NQ	7.01%	-	-	-	-
Lung disease due to external agents (CCS 132)	NQ	0.05%	LF	LF	-	-	-	-	-	-
Other lower respiratory disease (CCS 133)	NQ	1.07%	NQ	0.18%	-	-	-	-	-	-
Other upper respiratory disease (CCS 134)	NQ	0.30%	NQ	0.07%	-	-	-	-	-	-
Intestinal infection (CCS 135)	NQ	2.29%	NQ	0.06%	-	-	-	-	-	-
Disorders of teeth and jaw (CCS 136)	NQ	0.05%	LF	LF	-	-	-	-	-	-
Diseases of mouth; excluding dental (CCS 137)	NQ	0.12%	LF	LF	-	-	-	-	-	-
Esophageal disorders (CCS 138)	NQ	1.07%	NQ	0.17%	-	-	-	-	-	-
Gastroduodenal ulcer (except hemorrhage) (CCS 139)	NQ	0.24%	NQ	0.15%	-	-	-	-	-	-
Gastritis and duodenitis (CCS 140)	NQ	0.89%	LF	LF	-	-	-	-	-	-
Other disorders of stomach and duodenum (CCS 141)	NQ	0.57%	NQ	0.08%	-	-	-	-	-	-
Appendicitis and other appendiceal conditions (CCS 142)	LF	LF	NQ	0.65%	-	-	-	-	-	-
Abdominal hernia (CCS 143)	NQ	0.24%	NQ	2.14%	-	-	-	-	-	-
Regional enteritis and ulcerative colitis (CCS 144)	NQ	0.26%	NQ	0.07%	-	-	-	-	-	-
Intestinal obstruction without hernia (CCS 145)	NQ	2.83%	NQ	1.23%	-	-	-	-	-	-
Diverticulosis and diverticulitis (CCS 146)	NQ	2.72%	NQ	0.80%	-	-	-	-	-	-
Anal and rectal conditions (CCS 147)	NQ	0.15%	NQ	0.29%	-	-	-	-	-	-

Case mix and service mix information by specialty cohort model for your hospital and the nation for hospital-wide readmission measure

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Peritonitis and intestinal abscess (CCS 148)	NQ	0.12%	LF	LF	-	-	-	-	-	-
Biliary tract disease (CCS 149)	NQ	1.08%	NQ	2.99%	-	-	-	-	-	-
Other liver diseases (CCS 151)	NQ	0.70%	NQ	0.06%	-	-	-	-	-	-
Pancreatic disorders (not diabetes) (CCS 152)	NQ	1.15%	NQ	0.37%	-	-	-	-	-	-
Gastrointestinal hemorrhage (CCS 153)	10.00%	4.26%	NQ	0.23%	-	-	-	-	-	-
Noninfectious gastroenteritis (CCS 154)	NQ	1.15%	LF	LF	-	-	-	-	-	-
Other gastrointestinal disorders (CCS 155)	NQ	1.53%	NQ	0.70%	-	-	-	-	-	-
Nephritis; nephrosis; renal sclerosis (CCS 156)	LF	LF	LF	LF	-	-	-	-	-	-
Acute and unspecified renal failure (CCS 157)	6.00%	5.10%	NQ	0.24%	-	-	-	-	-	-
Chronic renal failure (CCS 158)	NQ	0.14%	LF	LF	-	-	-	-	-	-
Urinary tract infections (CCS 159)	NQ	8.13%	NQ	0.30%	-	-	-	-	-	-
Calculus of urinary tract (CCS 160)	NQ	0.42%	NQ	0.56%	-	-	-	-	-	-
Other diseases of kidney and ureters (CCS 161)	NQ	0.19%	NQ	0.16%	-	-	-	-	-	-
Other diseases or bladder and urethra (CCS 162)	NQ	0.11%	NQ	0.24%	-	-	-	-	-	-
Genitourinary symptoms and ill-defined conditions (CCS 163)	NQ	0.38%	NQ	0.18%	-	-	-	-	-	-
Hyperplasia of prostate (CCS 164)	NQ	0.14%	NQ	1.21%	-	-	-	-	-	-
Inflammatory conditions of male genital organs (CCS 165)	NQ	0.14%	LF	LF	-	-	-	-	-	-
Other male genital disorders (CCS 166)	LF	LF	NQ	0.08%	-	-	-	-	-	-
Nonmalignant breast conditions (CCS 167)	NQ	0.03%	LF	LF	-	-	-	-	-	-
Inflammatory diseases of female pelvic organs (CCS 168)	LF	LF	LF	LF	-	-	-	-	-	-
Endometriosis (CCS 169)	LF	LF	LF	LF	-	-	-	-	-	-
Prolapse of female genital organs (CCS 170)	LF	LF	NQ	1.38%	-	-	-	-	-	-
Menstrual disorders (CCS 171)	LF	LF	LF	LF	-	-	-	-	-	-
Ovarian cyst (CCS 172)	LF	LF	NQ	0.06%	-	-	-	-	-	-
Menopausal disorders (CCS 173)	LF	LF	NQ	0.05%	-	-	-	-	-	-
Other female genital disorders (CCS 175)	NQ	0.04%	NQ	0.23%	-	-	-	-	-	-
OB-related trauma to perineum and vulva (CCS 193)	-	-	LF	LF	-	-	-	-	-	-
Skin and subcutaneous tissue infections (CCS 197)	5.00%	3.94%	NQ	0.27%	-	-	-	-	-	-
Other inflammatory condition of skin (CCS 198)	NQ	0.06%	LF	LF	-	-	-	-	-	-
Chronic ulcer of skin (CCS 199)	NQ	0.43%	NQ	0.27%	-	-	-	-	-	-
Other skin disorders (CCS 200)	LF	LF	LF	LF	-	-	-	-	-	-
Infective arthritis and osteomyelitis (except that caused by TB/STD) (CCS 201)	NQ	0.24%	NQ	0.45%	-	-	-	-	-	-
Rheumatoid arthritis and related disease (CCS 202)	NQ	0.08%	NQ	0.09%	-	-	-	-	-	-
Osteoarthritis (CCS 203)	NQ	0.26%	NQ	16.30%	-	-	-	-	-	-
Other non-traumatic joint disorders (CCS 204)	NQ	0.33%	NQ	0.25%	-	-	-	-	-	-
Spondylosis; intervertebral disc disorders; other back problems (CCS 205)	NQ	1.36%	NQ	4.94%	-	-	-	-	-	-
Osteoporosis (CCS 206)	LF	LF	LF	LF	-	-	-	-	-	-
Pathological fracture (CCS 207)	NQ	0.48%	NQ	0.90%	-	-	-	-	-	-
Acquired foot deformities (CCS 208)	LF	LF	NQ	0.06%	-	-	-	-	-	-
Other acquired deformities (CCS 209)	LF	LF	NQ	0.66%	-	-	-	-	-	-

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Systemic lupus erythematosus and connective tissue disorders (CCS 210)	NQ	0.04%	LF	LF	-	-	-	-	-	-
Other connective tissue disease (CCS 211)	NQ	0.98%	NQ	0.45%	-	-	-	-	-	-
Other bone disease and musculoskeletal deformities (CCS 212)	NQ	0.14%	NQ	0.54%	-	-	-	-	-	-
Cardiac and circulatory congenital anomalies (CCS 213)	-	-	NQ	0.07%	-	-	10.00%	0.08%	-	-
Digestive congenital anomalies (CCS 214)	LF	LF	LF	LF	-	-	-	-	-	-
Genitourinary congenital anomalies (CCS 215)	LF	LF	LF	LF	-	-	-	-	-	-
Nervous system congenital anomalies (CCS 216)	-	-	LF	LF	-	-	-	-	LF	LF
Other congenital anomalies (CCS 217)	LF	LF	NQ	0.18%	-	-	-	-	-	-
Joint disorders and dislocations; trauma-related (CCS 225)	LF	LF	NQ	0.20%	-	-	-	-	-	-
Fracture of neck or femur (hip) (CCS 226)	NQ	0.28%	NQ	8.00%	-	-	-	-	-	-
Spinal cord injury (CCS 227)	-	-	NQ	0.05%	-	-	-	-	LF	LF
Skull and face fractures (CCS 228)	NQ	0.15%	NQ	0.07%	-	-	-	-	-	-
Fracture of upper limb (CCS 229)	NQ	0.47%	NQ	1.30%	-	-	-	-	-	-
Fracture of lower limb (CCS 230)	NQ	0.41%	NQ	1.89%	-	-	-	-	-	-
Other fractures (CCS 231)	NQ	2.26%	NQ	0.74%	-	-	-	-	-	-
Sprains and strains (CCS 232)	NQ	0.19%	NQ	0.16%	-	-	-	-	-	-
Intracranial injury (CCS 233)	-	-	NQ	0.46%	-	-	-	-	NQ	8.65%
Crushing injury or internal injury (CCS 234)	NQ	0.27%	NQ	0.11%	-	-	-	-	-	-
Open wounds of head; neck; and trunk (CCS 235)	NQ	0.12%	LF	LF	-	-	-	-	-	-
Open wounds of extremities (CCS 236)	NQ	0.08%	NQ	0.09%	-	-	-	-	-	-
Complication of device; implant or graft (CCS 237)	NQ	2.68%	NQ	5.08%	-	-	-	-	-	-
Complications of surgical procedures or medical care (CCS 238)	NQ	2.67%	NQ	1.69%	-	-	-	-	-	-
Superficial injury; contusion (CCS 239)	NQ	0.52%	LF	LF	-	-	-	-	-	-
Burns (CCS 240)	NQ	0.04%	NQ	0.05%	-	-	-	-	-	-
Poisoning by psychotropic agents (CCS 241)	NQ	0.11%	LF	LF	-	-	-	-	-	-
Poisoning by other medications and drugs (CCS 242)	NQ	0.42%	LF	LF	-	-	-	-	-	-
Poisoning by nonmedicinal substances (CCS 243)	NQ	0.05%	LF	LF	-	-	-	-	-	-
Other injuries and conditions due to external causes (CCS 244)	NQ	0.66%	NQ	0.05%	-	-	-	-	-	-
Syncope (CCS 245)	10.00%	3.30%	NQ	0.08%	-	-	-	-	-	-
Fever of unknown origin (CCS 246)	NQ	0.43%	LF	LF	-	-	-	-	-	-
Lymphadenitis (CCS 247)	LF	LF	LF	LF	-	-	-	-	-	-
Gangrene (CCS 248)	NQ	0.07%	NQ	0.63%	-	-	-	-	-	-
Shock (CCS 249)	LF	LF	LF	LF	-	-	-	-	-	-
Nausea and vomiting (CCS 250)	NQ	0.40%	LF	LF	-	-	-	-	-	-
Abdominal pain (CCS 251)	NQ	0.86%	LF	LF	-	-	-	-	-	-
Malaise and fatigue (CCS 252)	NQ	0.45%	LF	LF	-	-	-	-	-	-
Allergic reactions (CCS 253)	NQ	0.14%	LF	LF	-	-	-	-	-	-
Administrative/social admission (CCS 255)	LF	LF	LF	LF	-	-	-	-	-	-
Medical examination/evaluation (CCS 256)	LF	LF	LF	LF	-	-	-	-	-	-
Other aftercare (CCS 257)	LF	LF	LF	LF	-	-	-	-	-	-
Other screening for suspected conditions (not mental disorders or infectious disease) (CCS 258)	LF	LF	LF	LF	-	-	-	-	-	-

Case mix and service mix information by specialty cohort model for your hospital and the nation for hospital-wide readmission measure

Risk Factor	Percentage of admissions									
	Medicine Hospital	Medicine Nation	Surgery/Gynecology Hospital	Surgery/Gynecology Nation	Cardiorespiratory Hospital	Cardiorespiratory Nation	Cardiovascular Hospital	Cardiovascular Nation	Neurology Hospital	Neurology Nation
Residual codes; unclassified (CCS 259)	5.00%	1.14%	LF	LF	-	-	-	-	-	-
Delirium, dementia, and amnestic and other cognitive disorders (CCS 653)	NQ	1.31%	LF	LF	-	-	-	-	-	-
Alcohol-related disorders (CCS 660)	NQ	0.30%	LF	LF	-	-	-	-	-	-
Substance-related disorders (CCS 661)	NQ	0.36%	LF	LF	-	-	-	-	-	-
Screening and history of mental health and substance abuse codes (CCS 663)	NQ	0.13%	LF	LF	-	-	-	-	-	-

NQ = Hospital had no qualifying cases for that specialty cohort model.

"-" = Condition indicator not included in specialty cohort model.

LF = Low Frequency (condition categories in each model with fewer than 1,000 admissions in 2010 national data are grouped together into a single "low frequency CCS combined" risk variable).

NATIONAL QUALITY FORUM

Defining Affordability

Overview and Approach

The National Quality Strategy identifies affordable care as one of its core aims in addition to better care and healthy communities. However, this is a subjective concept that is dependent on a given stakeholder's perspective. Additionally, terms such as value, efficiency, cost, and resource use are sometimes used interchangeably with "affordability" and although these may be interrelated there are distinct differences warranting clarity. Therefore, in an effort to promote a shared understanding the Measure Applications Partnership (MAP) appointed a time-limited Affordability Task Force (Task Force) to establish a consensus-based definition for affordability; this definition will facilitate identifying a family of measures to assess and monitor progress against this national aim.

In addition to building on prior consensus driven work which defined and applied several of these terms in the context of performance measurement (see Defining Affordability Background Brief), the Task Force actively solicited direct input from a diverse set of stakeholders on how affordability should best be measured through a two-week public comment period. The feedback obtained was used to inform Task Force's discussions during their November 14, 2013 web meeting and in the developing the content of this report. Specifically, commenters were asked:

- How does your organization define affordability? Please provide a brief description.
- Please provide a brief definition for each term in your definition of affordability.
- Based on your definition of affordability above, what information or data is needed to assess affordability?
- Does your organization currently collect information on affordability? If yes, what types of data do you collect and how?
- Please provide any additional feedback here you wish to offer that MAP should consider in defining affordability through multiple stakeholder perspectives.

Coupling broad stakeholder input with earlier foundational work in this field, the Task Force developed a patient-centered definition of affordability. In doing so, the Task Force considered each stakeholder's vantage point and their contribution to affordable care. Additionally they examined how affordability related to other commonly used terms and described how affordability could be measured.

Affordability: Conceptual Model & Definitions

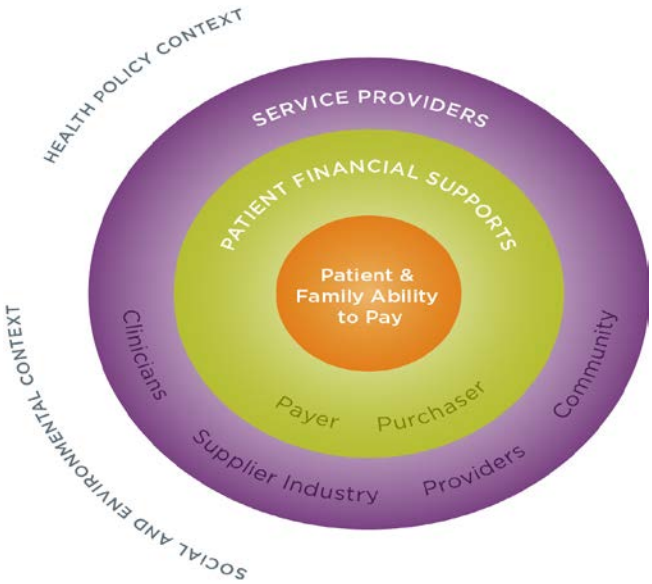
The Task Force defined affordability as: **the patient and family's ability to pay for needed healthcare and health services without undue burden,** including contributions towards premiums and/or cost sharing (e.g., co-payments, co-insurance, and deductibles).[1] The Task Force noted that healthcare costs have skyrocketed while incomes have largely remained stagnant resulting in patients and families having to dedicate an increasing share of their income to cover their healthcare expenditures. Importantly, a patient's ability to pay for care impacts whether or not they receive needed services and how they manage their health overall, as they may be forced to choose between healthcare and other necessities.

There are many influencing factors impacting affordability including the social, environmental, and policy context in which patients and others who impact their health live and interact. These interrelationships are illustrated in Figure 1.

In this model, the consumer and family are at the core. For the patient, affordable care is defined as the ability to pay for needed healthcare services without undue burden or hardship, such as the threat of bankruptcy or inability to meet basic needs for food or shelter. Ideally, patients are at the forefront of their healthcare decisions and engage in a shared decision-making process with their providers about needed services. Moving outward, the next ring reflects stakeholders who provide financial support on behalf of the patient. Public and private payers (e.g., government and insurance companies) and purchasers (e.g., businesses and employers) frequently act as financial intermediaries on behalf of patients and families. The outer ring includes stakeholders who provide direct or indirect care for the patient including clinicians, providers (e.g., hospitals or other facilities), suppliers/industry, and the community. For example, a patient diagnosed with breast cancer may have health insurance provided by her employer. Her employer helps to defray part of the cost of the insurance coverage while the payer covers the bills for her treatment. This patient will have interactions with a number of service providers, possibly a hospital visit to undergo a lumpectomy, follow up appointments with her surgeon, oncologist, and primary care provider, and radiation and chemotherapy treatments. How the service providers interact with and treat the patient can have a significant impact on resources used and thus affordability. Providers have the opportunity to recommend less costly treatments that offer similar outcomes as well as the responsibility to recommend only services that are truly needed. In the example above, a clinician may prescribe the patient a generic chemotherapy medication that will provide the same outcome but save the patient and her financial intermediaries valuable resources.

For each set of stakeholder group, the Task Force outlined how they influence affordability and identified key measurement opportunities drawing on their perspectives.

Figure 1. Stakeholder Relationships



Relationship to Value, Efficiency, and Resource Use

Although affordability is influenced by cost, value, and efficiency important distinctions exist between these terms as described below:

Cost of care (resource use) is a measure of the total healthcare spending, including total resource use and unit price(s), by payor or consumer, for a healthcare service or group of healthcare services, associated with a specified patient population, time period, and unit(s) of clinical accountability[2].

Efficiency is defined broadly as the resource use (or cost) associated with a specific level of performance with respect to the other five Institute of Medicine (IOM) aims of quality: safety, timeliness, effectiveness, equity, and patient-centeredness. Time is used to define efficiency when determining efficiency of throughput processes or applying time-driven activity based costing methods.[3]The Task Force noted that while time and activity based costing works well for providers' time, which accounts for the majority of health care costs, it is not as effective for capturing the costs of supplies (e.g., drugs or devices) and fixed costs (e.g., CT scanners or physical capital). Existing measures do not discern these types of costs.

Value is a preference-weighted assessment of efficiency (i.e., clinical quality and cost performance) by a specified stakeholder, such as an individual patient, consumer organization, payer, provider, government, or society[4].

The Task Force affirmed that affordability should be defined from consumer lens and integrates, as a core concept, the ability to pay for needed services. Affordability is influenced by the actions of other stakeholder groups, for example, what percentage of insurance premiums are passed from employers to consumers or the cost of providing services charged by providers. These factors, among others, contribute to a consumer's assessment of their ability to pay. The Task Force emphasized the importance of recognizing these interdependencies and the need to hold costs down across the system in order to sustain or make care more affordable.

Measuring Affordability

Patients and families need information to gauge how much they will spend on needed healthcare services. This includes, but may not be limited to, information on prices and out-of-pocket costs (e.g., share of insurance premiums, co-payments, co-insurance, and deductibles), proportion of income spent on health and healthcare services, and access to care. Transparent measures of cost and quality from the patient's standpoint are critical for measuring affordability to consumers and can help drive improvements in affordability. A current challenge in publicly reporting information on affordability is that consumers often associate higher costs with higher clinical quality[5] underscoring the need to show cost data in the context of meaningful health outcomes data. More research is needed to understand what types of measures would be most meaningful to consumers and how to best present this information in way that is understandable and actionable.

Stakeholder Preferences and Measurement Opportunities

While the key measure of affordability should be from the perspective of the consumer, the Task Force recognized that affordability depends on an individual's circumstances and the affordability and sustainability of care will ultimately be determined by the actions of all stakeholders. For example, coverage under a very generous health plan could be affordable from the standpoint of the patient and family, but if the features of the plan do not encourage efficiency, and the activities of providers delivering services under the plan are inefficient in delivering quality care, then the plan may be quite costly from the standpoint of employers, taxpayers, or others paying the excess costs of making health care affordable to the consumer. As a result, employers may reduce wages, and governments may have

to raise taxes or forego paying for other important public priorities. Higher financial pressures from inefficient care also make it more difficult to sustain affordable coverage for consumers over time.

Consequently, measurement of affordability should reflect the ability and responsibility of all stakeholders to improve the quality of care while minimizing costs. This is essential to maximizing the ability of all consumers to afford the healthcare they need and be confident they can receive the best possible care. The Task Force considered the preferences of each group, drawing from their direct feedback and input of the task force. The Task Force then defined measurement opportunities from each stakeholder perspective and the accountability of each stakeholder group to help promote affordable care, noting the need to distinguish measures of affordability (and measures of the components of affordability) from issues such as incentives and transparency that can lead to increased efficiency and affordability. While incentives can help spur movement towards affordability, they are not the same as achieving the goal of affordable care.

Community Preferences:

Communities want to improve healthcare affordability and increase access to healthcare services in their markets. Communities are interested in lowering costs while eliminating health disparities and addressing equity, chronic disease management, health promotion and disease prevention, and patient safety. Measurement opportunities from the community perspective include total cost of care and associated clinical quality outcomes at the population level for an overall assessment of efficiency. Communities may be accountable for promoting public health and providing supports to improve care transitions.

Provider Preferences

Providers are concerned about delivering higher quality care while lowering costs. Providers want to improve care processes and outcomes and to show the value of the services provided. However, payments can be limited by contracts or (in the case of government programs), payment regulations that restrict payment amounts or the kinds of services are covered. Providers can influence affordability by avoiding unnecessary services, inefficiently delivered services, excess administrative costs, prices that are too high, missed healthcare prevention opportunities, and fraud.[6] Measurement opportunities from the provider perspective include efficiency and overuse. Providers can be held accountable by demonstrating the efficiency of their services.

Clinician Preferences

Clinicians want to ensure that outcomes are meaningful to them and to their patients, including return to health, improved functional status, and efficiency of service delivery. Clinicians are interested in promoting affordability by decreasing administrative burden and delivering the best care in the most efficient manner. Additionally, they want to decrease inefficiencies and fragmentation by increasing care coordination and cooperation between clinicians and with providers. Key measurement opportunities include measures of these aspects of quality and efficiency. Improvements in these measures could be supported by clear clinical guidelines as well as aligning incentives with performance rather than volume. Such reforms could support clinicians becoming more accountable for providing high quality care at the lowest possible cost while promoting safety, care coordination, and population health.

Public and Private Payer Preferences

Public and private payers need to identify and assess resource use at different levels, including at the episode, individual provider, community, and national levels. Payers need information to purchase healthcare services based on value, ensuring the populations they are responsible for receive high-quality care that is not wasteful or harmful and thus maximizing their ability to support affordable care**.**

Payers are interested in understanding variations across markets and purchasers as well as differences in location, age, family size, health status, and income. Payers are concerned about covering the costs of healthcare services while maintaining or improving take-home wages and competiveness (private payers) or jeopardizing the ability to adequately fund other public programs (public payers). Payers are implementing new payment models intended to provide incentives to reduce waste and inefficiency to improve health outcomes while significantly slowing spending growth. Key measurement opportunities include pairing information on cost and price together with quality, and increasing the transparency of this information to members. Particularly useful for payers would be measures that show how affordability for consumers can be achieved at the lowest overall cost, for example through innovative designs of benefits and provider payment systems. Payers are accountable for providing their beneficiaries high quality care that addresses their health care needs while limiting costs.

Purchaser Preferences

Purchasers want to offer efficient and high-value healthcare services that are affordable to their employee and sustainable to the business, the locality, the state, or the nation. Employers are concerned about paying salaries and insurance premiums while maintaining competitiveness in the marketplace. Additionally, purchasers want to offer healthcare services to employees that improve health and productivity while reducing absenteeism and limiting lost work time. Key measurement opportunities for private purchasers include total cost of care, employer contribution, and information pairing cost and clinical quality. Similarly, key measurement opportunities for public purchasers include total cost of care, taxpayer contribution, and information pairing cost and clinical quality.

Supplier/Industry Preferences

Supplier/industry products and services are an integral part of ensuring overall healthcare quality and affordability as organizations that support the healthcare field with device and diagnostic products, medications, tools, and other information and resources. Suppliers are interested in reducing costs through improved manufacturing and logistics processes[7] while maintaining incentives for innovation[8] and research and development, which can be slow, expensive, and difficult to generalize to broad patient populations.[9] Suppliers are also interested in decreasing costs by increasing safety, such as preventing adverse drug events. Key measurement opportunities include efficiency, safety, and overuse.

Next Steps: MAP Affordability Family of Measures

With definitions and stakeholder perspectives considered, MAP will define an Affordability Family of Measures—related sets of available measures and gaps that will address the affordability concepts discussed here while promoting alignment of measurement across settings and the public and private sectors. The family of measures will create a comprehensive picture of affordability considering all perspectives. The family will include measures related to cost drivers and other key components of cost, including measures of inefficiencies that may result in poorer health outcomes at a higher price. Recognizing that there is much work to be done, the Affordability Family of Measures will build on existing measures of quality, cost, and efficiency. The Task Force will begin by identifying high-leverage opportunities from key drivers of cost and then identify available measures and critical measure gaps. The Task Force will establish a path forward to expand on these initial measures and will consider barriers to measurement.

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[1] Blumberg LJ, Holahan J, Hadley J, et al. Setting a standard of affordability for health insurance coverage *Health Affairs. 2007:* 26(4): w463–w473.

[2] National Quality Forum (NQF). *Measurement Framework: Evaluating Efficiency Across Patient-Focused Episodes of Care.* Washington, DC:NQF;2010.

[3] National Quality Forum. *National Voluntary Consensus Standards for Cost and Resource Use*. Washington, DC;2012.

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[5] RWJF. *Counting Change*.

[6] IOM.*The Healthcare Imperative: Lowering Costs and Improving Outcomes: Workshop Series Summary.*

[7] Ebel T, Larsen E, Shah K, et al. *Building New Strengths in the Healthcare Supply Chain*. McKinsey and Company; 2013. Available at McKinsey white paper - building new strenghts in healthcare supply chain VF.pdf. Last accessed October 2013.

[8] Jayadev A, Stiglitz J. Two ideas to increase innovation and reduce pharmaceutical costs and prices.*Health Aff (Millwood)*. 2009;28(1):w165-168.

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NATIONAL QUALITY FORUM

2014 MAP Pre-Rulemaking Input from the Dual Eligible Beneficiaries Workgroup

In providing input to HHS regarding the selection of measures for Federal payment and public reporting programs, MAP considers how the programs may impact the quality of care delivered to Medicare-Medicaid dual eligible beneficiaries. This heterogeneous group consists of 9.2 million Americans eligible for both Medicare and Medicaid and includes many of the poorest and sickest individuals covered by either program.

Measuring High-Quality Care for Dual Eligible Beneficiaries

The MAP Dual Eligible Beneficiaries Workgroup has identified the subject areas in which performance measurement can provide the most leverage in improving quality of care: **quality of life, care coordination, screening and assessment, mental health and substance use,** and **structural measures**. The workgroup has also recognized that the following issues are strongly related to achieving high-quality care in the dual eligible beneficiary population, regardless of the type of care being provided: setting goals for care, chronicity of care, cognitive status, and care transitions, and communication.

The workgroup has identified a Family of Measures for Dual Eligible Beneficiaries that includes 57 of the best available measures reflecting the priorities for quality of care; the majority of the measures are in use across HHS programs. Specifically,

- 30 of the measures in the family are currently in use in two or more HHS programs,
- 9 additional measures are in use in one HHS program, and
- 9 of the measures are under consideration in the current pre-rulemaking cycle for potential inclusion across 10 Federal programs.

In addition to available measures, the workgroup has identified the following highest-priority measure gaps for the Dual Eligible Beneficiaries Family of Measures:

- Goal-directed, person-centered care planning and implementation,
- Shared decision-making,
- Systems to coordinate healthcare with non-medical community resources and service providers,
- Beneficiary sense of control/autonomy/self-determination,
- Psychosocial needs,
- Community integration/inclusion and participation, and
- Optimal functioning (e.g., improving when possible, maintaining, managing decline).

The table in your meeting materials titled MAP Family of Measures for Dual Eligible Beneficiaries includes details about the measures in the family. This table also identifies which of the measures are under consideration in 2014 pre-rulemaking, the relevant workgroups' recommendations, and current uses in Federal programs.

Input on Federal Programs and Measures Under Consideration

The MAP Dual Eligible Beneficiaries Workgroup generally supports the setting-specific workgroups' 2014 pre-rulemaking recommendations. The Dual Eligible Beneficiaries Workgroup encourages efforts to align incentives across programs, care settings, and throughout communities to address care coordination, transitions of care, and transmission of information. The workgroup also urges widespread use of measures to address shared decision-making, particularly the available hospice and palliative care measures. The workgroup stressed the importance of appropriate preventive services for all individuals and the challenges faced in providing this care to individuals who do not identify a primary care provider and/or most frequently receive care from specialty providers and facilities. The group would like the opportunity for MAP to evaluate measures for primary care medical homes in future pre-rulemaking.

Post-Acute Care/Long-Term Care Programs

Of the four measures from the Dual Eligible Beneficiaries Family of Measures under consideration for PAC/LTC programs, the PAC/LTC Workgroup supported three for the End-Stage Renal Disease Quality Incentive Program and conditionally supported one for the Inpatient Rehabilitation Facilities Quality Reporting Program. The Dual Eligible Beneficiaries Workgroup strongly encourages aligning incentives across specialized settings to promote care coordination, specifically with ancillary entities and support services. Measures to address issues across programs should align when possible, but more importantly, measures should be specified and appropriate for each setting of care.

Hospital Programs

Three measures from the family are under consideration for hospital programs. The Dual Eligible Beneficiaries Workgroup did not object to the Hospital Workgroup's lack of support for the use of NQF #0028 Preventive Care & Screening: Tobacco Use: Screening & Cessation Intervention in the Inpatient Psychiatric Hospital Quality Reporting program. Both workgroups suggest alternative Joint Commission measures for feasibility purposes. The Dual Eligible Beneficiaries Workgroup also supports potential programmatic structure changes to the Hospital Readmission Reduction Program to make stratified comparisons among peer groups if NQF #1798 Hospital-Wide All-Cause Unplanned Readmission Measure is implemented.

The Dual Eligible Beneficiaries Workgroup offered additional feedback on two measure concepts under consideration for the Outpatient Quality Reporting Program that were not supported by the Hospital Workgroup: 1) No Individual Psychotherapy and 2) Group Therapy. They noted some psychiatric services must be individualized, and fully-developed measures to assess evidence-based therapies might be useful. However, the measures under consideration relate more to a historical billing problem than they do with the quality of outpatient psychiatric care. Measure development should focus on other concepts in the fields of mental and behavioral health, and an IOM panel will be convened on this topic in 2014.

Clinician Programs

The Dual Eligible Beneficiaries Workgroup notes that the two measures from the family of measures under consideration for clinician programs were both supported by the Clinician Workgroup. The Dual Eligible Beneficiaries Workgroup offers continued collaboration in the identification of a cross-cutting set of core measures for clinicians and encourages programmatic structures that would increase the number of clinicians reporting measures relevant to dual eligible beneficiaries.

NATIONAL QUALITY FORUM

MAP Previously Identified Measure Gaps

This document provides a synthesis of previously identified measure gaps compiled from all prior MAP reports. The gaps are grouped by NQS priority.

Safety

- Composite measure of most significant Serious Reportable Events

Healthcare-Associated Infections

- Ventilator-associated events for acute care, post-acute care, long-term care hospitals and home health settings
- Pediatric population: special considerations for ventilator-associated events and C. difficile
- Infection measures reported as rates, rather than ratios (more meaningful to consumers)
- Sepsis (healthcare-acquired and community-acquired) incidence, early detection, monitoring, and failure to rescue related to sepsis
- Post-discharge follow-up on infections in ambulatory settings
- Vancomycin Resistant Enterococci (VRE) measures (e.g., positive blood cultures, appropriate antibiotic use)

Medication and Infusion Safety

- Adverse drug events
    - Injury/mortality related to inappropriate drug management
    - Total number of adverse drug events that occur within all settings (including administration of wrong medication or wrong dosage and drug-allergy or drug-drug interactions)
- Inappropriate medication use
    - Polypharmacy and use of unnecessary medications for all ages, especially high-risk medications
    - Antibiotic use for sinusitis
    - Use of sedatives, hypnotics, atypical-antipsychotics, pain medications (consideration for individuals with dementia, Alzheimer's, or residing in long-term care settings)
- Medication management
    - Patient-reported measures of understanding medications (purpose, dosage, side effects, etc.)
    - Medication documentation, including appropriate prescribing and comprehensive medication review
    - Persistence of medications (patients taking medications) for secondary prevention of cardiovascular conditions
    - Role of community pharmacist or home health provider in medication reconciliation
- Blood incompatibility

Perioperative/Procedural Safety

- Air embolism
- Anesthesia events (inter-operative myocardial infarction, corneal abrasion, broken tooth, etc.)
- Perioperative respiratory events, blood loss, and unnecessary transfusion
- Altered mental status in perioperative period

Venous Thromboembolism

- VTE outcome measures for ambulatory surgical centers and post-acute care/long-term care settings

- Adherence to VTE medications, monitoring of therapeutic levels, medication side effects, and recurrence

Falls and Immobility

- Standard definition of falls across settings to avoid potential confusion related to two different fall rates
- Structural measures of staff availability to ambulate and reposition patients, including home care providers and home health aides

Obstetrical Adverse Events

- Obstetrical adverse event index
- Measures using National Health Safety Network (NHSN) definitions for infections in newborns

Pain Management

- Effectiveness of pain management balanced by monitoring for potentially inappropriate use of opiods
- Assessment of depression with pain

Patient & Family Engagement

Person-Centered Communication

- Information provided at appropriate times
- Information is aligned with patient preferences
- Patient understanding of information, not just receiving information (considerations for cultural sensitivity, ethnicity, language, religion, multiple chronic conditions, frailty, disability, medical complexity)
- Outreach to patients to ensure they have the tools and resources needed to self-manage their care

Shared Decision-Making and Care Planning

- Person-centered care plan, created early in the care process, with identified goals for all people
- Integration of patient/family values in care planning
- Plan agreed to by the patient and provider and given to patient, including advanced care plan
- Plan shared among all providers seeing the patient (integrated); multidisciplinary
- Identified primary provider responsible for the care plan
- Fidelity to care plan and attainment of goals
    - Treatment consistent with advanced care plan
- Social care planning addressing social, practical, and legal needs of patient and caregivers
- Grief and bereavement care planning

Advanced Illness Care

- Symptom management (pain, nausea, shortness of breath, nutrition)
- Comfort at end of life

Patient-Reported Measures

- Functional status
    - Particularly for individuals with multiple chronic conditions
    - Optimal functioning (e.g., improving when possible, maintaining, managing decline)
- Pain and symptom management
- Health-related quality of life
- Patient activation/engagement

Healthy Living

- Well-being
- Healthy lifestyle behaviors
- Social and environmental determinants of health
- Social connectedness for people with long-term services and supports needs
- Sense of control/autonomy/self-determination
- Safety risk assessment

Care Coordination

Communication

- Sharing information across settings
    - Address both the sending and receiving of adequate information
    - Sharing medical records (including advance directives) across all providers
    - Documented consent for care coordination
    - Coordination between inpatient psychiatric care and alcohol/substance abuse treatment
- Effective and timely communication (e.g., provider-to-patient/family, provider-to-provider)
    - Survey/composite measure of provider perspective of care coordination
- Comprehensive care coordination survey that looks across episode and settings (includes all ages; recognizes accountability of the multidisciplinary team)

Care Transitions

- Measures of patient transition to next provider/site of care across all settings, beyond hospital transitions (e.g., primary care to specialty care, clinician to community pharmacist, nursing home to home health) as well as transitions to community services
- Timely communication of discharge information to all parties (e.g., caregiver, primary care physician)
- Transition planning
    - Outcome measures for after care
    - Primary care follow-up after discharge measures (e.g., patients keeping follow-up appointments)
    - Access to needed social supports

System and Infrastructure Support

- Interoperability of EHRs to enhance communication
- Measures of "systemness," including accountable care organizations and patient-centered medical homes
- Structures to connect health systems and benefits (e.g., coordinating Medicare and Medicaid benefits, connecting to long-term supports and services)

Avoidable Admissions and Readmissions

- Shared accountability and attribution across the continuum
- Community role; patient's ability to connect to available resources

Affordability

- Ability to obtain follow-up care
- Utilization benchmarking (e.g., outpatient/ED/nursing facility)
- Total cost of care
- Consideration of patient out of pocket cost
- Appropriateness for admissions, treatment, over-diagnosis, under-diagnosis, misdiagnosis, imaging, procedures
- Chemotherapy appropriateness, including dosing
- Ensuring end-of-life care is consistent with patient preferences
- Use of radiographic imaging in the pediatric population

Prevention and Treatment for the Leading Causes of Mortality

Primary and Secondary Prevention

- Lipid control
- Outcomes of smoking cessation interventions
- Lifestyle management (e.g., physical activity/exercise, diet/nutrition)
- Cardiometabolic risk
- Modify Prevention Quality Indicators (PQI) measures to assess accountable care organizations; modify population to include all patients with the disease (if applicable)

Cancer

- Cancer- and stage-specific survival as well as patient-reported measures
- Complications such as febrile neutropenia and surgical site infection
- Transplants: bone marrow and peripheral stem cells
- Staging measures for lung, prostate, and gynecological cancers
- Marker/drug combination measures for marker-specific therapies, performance status of patients undergoing oncologic therapy/pre-therapy assessment
- Disparities measures, such as risk-stratified process and outcome measures, as well as access measures
- Pediatric measures, including hematologic cancers and transitions to adult care

Cardiovascular Conditions

- Appropriateness of coronary artery bypass graft and PCI at the provider and system levels of analysis
- Early identification of heart failure decompensation
- ACE/ARB, beta blocker, statin persistence (patients taking medications) for ischemic heart disease

Depression

- Suicide risk assessment for any type of depression diagnosis
- Assessment and referral for substance use
- Medication adherence and persistence for all behavioral health conditions

Diabetes

- Measures addressing glycemic control for complex patients (e.g., geriatric population, multiple chronic conditions) at the clinician, facility, and system levels of analysis
- Pediatric glycemic control
- Sequelae of diabetes

Musculoskeletal

- Evaluating bone density, and prevention and treatment of osteoporosis in ambulatory settings