NATIONAL QUALITY FORUM

Measure Submission and Evaluation Worksheet 5.0

This form contains the information submitted by measure developers/stewards, organized according to NQF's measure evaluation criteria and process. The evaluation criteria, evaluation guidance documents, and a blank online submission form are available on the submitting standards web page.

NQF #: 1768 NQF Project: Readmissions Project

(for Endorsement Maintenance Review)
Original Endorsement Date: Most Recent Endorsement Date:

BRIEF MEASURE INFORMATION

De.1 Measure Title: Plan All-Cause Readmissions

Co.1.1 Measure Steward: National Committee for Quality Assurance

De.2 Brief Description of Measure: For members 18 years of age and older, the number of acute inpatient stays during the measurement year that were followed by an acute readmission for any diagnosis within 30 days and the predicted probability of an acute readmission. Data are reported in the following categories:

1. Count of Index Hospital Stays (IHS) (denominator)
2. Count of 30-Day Readmissions (numerator)
3. Average Adjusted Probability of Readmission
4. Observed Readmission (Numerator/Denominator)
5. Total Variance

Note: For commercial, only members 18–64 years of age are collected and reported; for Medicare, only members 18 and older are collected, and only members 65 and older are reported.

2a1.1 Numerator Statement: At least one acute readmission for any diagnosis within 30 days of the Index Discharge Date.

2a1.4 Denominator Statement: For commercial health plans, ages 18-64 as of the Index Discharge Date. For Medicare and Special Needs Plans, ages 18 and older as of the Index Discharge Date.

2a1.8 Denominator Exclusions: Exclude hospital stays where the Index Admission Date is the same as the Index Discharge Date and any inpatient stay with a discharge date in the 30 days prior to the Index Admission Date.

1.1 Measure Type: Outcome
2a1. 25-26 Data Source: Administrative claims
2a1.33 Level of Analysis: Health Plan

1.2-1.4 Is this measure paired with another measure? No

De.3 If included in a composite, please identify the composite measure (*title and NQF number if endorsed*):
N/A

STAFF NOTES (*issues or questions regarding any criteria*)

Comments on Conditions for Consideration:

Is the measure untested? Yes☐ No☐ If untested, explain how it meets criteria for consideration for time-limited endorsement:

1a. Specific national health goal/priority identified by DHHS or NPP addressed by the measure (*check De.5*):
5. Similar/related endorsed or submitted measures (*check 5.1*):
Other Criteria:

Staff Reviewer Name(s):

1. IMPACT, OPPORTUITY, EVIDENCE - IMPORTANCE TO MEASURE AND REPORT

Importance to Measure and Report is a threshold criterion that must be met in order to recommend a measure for endorsement. All three subcriteria must be met to pass this criterion. See guidance on evidence.
Measures must be judged to be important to measure and report in order to be evaluated against the remaining criteria. (evaluation criteria)

1a. High Impact: H☐ M☐ L☐ I ☐
(*The measure directly addresses a specific national health goal/priority identified by DHHS or NPP, or some other high impact aspect of healthcare.*)

De.4 Subject/Topic Areas *(Check all the areas that apply)*: Cancer, Cancer : Bladder, Cancer : Breast, Cancer : Colorectal, Cancer : Gynecologic, Cancer : Hematologic, Cancer : Liver, Cancer : Lung, Esophageal, Cancer : Pancreatic, Cancer : Prostate, Cancer : Skin, Cardiovascular, Cardiovascular : Acute Myocardial Infarction, Cardiovascular : Atrial Fibrillation, Cardiovascular : Congestive Heart Failure, Cardiovascular : Hyperlipidemia, Cardiovascular : Hypertension, Cardiovascular : Ischemic Heart Disease, Coronary Artery Disease, Cardiovascular : Percutaneous Coronary Intervention (PCI), Endocrine, Endocrine : Diabetes, GI, GI : Appendicitis, GI : Bleeding, GI : Cirrhosis, GI : Gall Bladder Disease, GI : Gastroenteritis, GI : Gastro-Esophageal Reflux Disease (GERD)/Peptic Ulcer, GI : Polyps, GU/GYN, GU/GYN : Gynecology, GU/GYN : Incontinence, GU/GYN : Male Genito-Urinary, HEENT, HEENT : Dental, HEENT : Ear Infection, HEENT : Eye, HEENT : Hearing, HEENT : Pharyngitis, Infectious Diseases, Infectious Diseases : Hepatitis, Infectious Diseases : Respiratory, Infectious Diseases : Sexually Transmitted, Infectious Diseases : Tuberculosis, Mental Health, Mental Health : Alcohol, Substance Use/Abuse, Mental Health : Depression, Mental Health : Domestic Violence, Mental Health : Serious Mental Illness, Mental Health : Suicide, Musculoskeletal, Musculoskeletal : Arthritis-Osteo, Musculoskeletal : Arthritis-Rheumatoid, Musculoskeletal : Functional Status, Musculoskeletal : Hip/Pelvic Fracture, Musculoskeletal : Joint Surgery, Musculoskeletal : Low Back Pain, Musculoskeletal : Osteoporosis, Neurology, Neurology : Dementia/Delirium, Neurology : Stroke/Transient Ischemic Attack (TIA), Prevention, Prevention : Development/Wellness, Prevention : Immunization, Prevention : Malnutrition, Prevention : Obesity, Prevention : Physical Activity, Prevention : Screening, Prevention : Tobacco Use, Pulmonary/Critical Care, Pulmonary/Critical Care : Asthma, Pulmonary/Critical Care : Chronic Obstructive Pulmonary Disease (COPD), Pulmonary/Critical Care : Critical Care, Pulmonary/Critical Care : Dyspnea, Pulmonary/Critical Care : Pneumonia, Pulmonary/Critical Care : Sleep/Sleep Apnea, Renal, Renal : Chronic Kidney Disease (CKD), Renal : End Stage Renal Disease (ESRD), Surgery, Surgery : Cardiac, Surgery : General Surgery, Surgery : Perioperative, Surgery : Thoracic, Surgery : Vascular
De.5 Cross Cutting Areas (*Check all the areas that apply)*: Care Coordination, Population Health, Safety

1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, High resource use, Patient/societal consequences of poor quality

1a.2 If "Other," please describe:

1a.3 Summary of Evidence of High Impact *(Provide epidemiologic or resource use data)*:
Discharge from a hospital is a critical transition point in a patient's care. Incomplete handoffs at discharge can lead to adverse events for patients and avoidable rehospitalization. Hospital readmissions may indicate poor care or missed opportunities to coordinate care better. Research shows that specific hospital-based initiatives to improve communication with beneficiaries and their caregivers, coordinate care after discharge and improve the quality of care during the initial admission can avert many readmissions (MedPac, 2007).

There is a plethora of evidence about adverse events in patients, and this measure aims to distinguish readmissions from complications of care and pre-existing comorbidities (Gallagher, 2005). Potentially preventable readmissions are defined as readmissions that are directly tied to conditions that could have been avoided in the inpatient setting. While not all preventable readmissions can be avoided, most potentially preventable readmissions can be prevented if the best quality of care is rendered and clinicians are using current standards of care (MedPAC, 2007).

In a 2009 academic study of preventable readmissions, the Jencks model (not endorsed by NQF) used Medicare FFS data to evaluate the 100 most frequent rehospitalizations using DRGs (73.2% of all rehospitalizations), making it a blend of the PacifiCare

and Yale models with respect to "cause" of the index discharge. The analysis observed a 19.6% rate of readmission. Importantly, 70% of readmissions were patients discharged for medical rather than surgical conditions. In hospital specific analyses, Jencks only used hospitals with at least 1000 discharges (Jencks, 2009).

According to the 2005 Medicare Provider Analysis and Review file data, 6.2% of the total readmissions were within 7 days of discharge, while 11.3% were within 15 days of discharge and 17.6% were within 30 days of discharge (MedPac, 2007). Additional analyses revealed that 5.2% of the 7-day readmissions were potentially preventable, while 8.8% of the 15-day readmissions were potentially preventable and 13.3% of the 30-day readmissions were potentially preventable. This equates to spending of $5 billion, $8 billion and $12 billion dollars respectively for potentially preventable readmissions (MedPac, 2007). In 2005, the average Medicare payment for a potentially preventable readmission totaled approximately $7,200 (almost $1,400 less than the payment for the original stay).

A Dartmouth-Hitchcock Medical Center found that hospital mortality was significantly higher for readmitted patients in the ICU. This retrospective cohort study further showed that a hospital's length of stay was higher for patients that were readmitted (Cook, 2006). Similarly, a UK study has shown that mortality was significantly higher for patients readmitted to the ICU as death rates were 1.5 to almost 10 times higher among readmission patients. Even after risk adjusting for disease and severity category studies found that the odds of death remained six and seven times higher among readmitted patients (Rosenberg, 2000).

In an American study, researchers found that while there is no strong correlation between the quality of care or 30-day mortality rates and socioeconomic status differences, patients of lower socioeconomic status have a risk ratio of 1.08 as compared with 1.02 risk ratio seen in their higher socioeconomic counterparts (Rathore, 2006).

Current studies have shown opportunities for improvement. While there is variability in the rates of potentially preventable readmissions, up to 50% of readmissions can be identified as preventable. Furthermore, while hospitals vary significantly in what they consider reasons for potentially preventable readmissions, randomized control trials have shown that patient education, pre-discharge assessment, and improved post-discharge care in the hospital accounts for between 12% and 75% of the factors that directly impact readmission rates (Benbassat, 2000).

The 2005 MedPac Report analyzed the admission trends for seven chronic conditions that comprise almost 30% of the spending on readmissions. For these seven conditions, heart failure, COPD, pneumonia, AMI, CABG, PTCA and other vascular conditions the readmission rates were 12.5%, 10.7%, 9.5%, 13.4%, 13.5%, 10.0% and 11.7%, respectively. These rates illustrate the substantial expenditure as well as a need for change in the quality of the care coordination for patients with these conditions (MedPac, 2007). Additionally, in 2005 the 30-day hospital readmission rates for Medicare patients ranged from 14% to 22%. If readmission rates were lowered to the levels achieved by the top performing regions, Medicare would save $1.9 billion annually (Commonwealth Fund, 2006).

In a case study in reducing hospital readmissions conducted by Catholic Healthcare Partners, 29 to 47% of elderly CHF patients were readmitted within 3 to 6 months of initial hospitalization (Commonwealth, 2008). MedPAC has shown that for 15-day readmission rates for CHF has an average of 12.5%. As roughly 20% of hospitals that treat patients who have CHF have been found to have inpatient readmission rates of more than 4%age points higher than expected (MedPAC, 2007). Along with MedPAC, many experts including the Institute for Healthcare Improvement concur that CHF can be considered a potentially preventable readmission (MedPAC, 2007and IHI, 2004).

As evidence has shown that since almost 30% of readmissions in the 15-day discharge period are from conditions related to CHF, COPD, and CABG, MedPAC believes it may be wise to focus on the DRGs with this high volume and high rates of readmission as hospitals can gain experience in measurements and further expansions can be assessed by the first groups of DRGs that were measured (MedPAC, 2007).

In one study, they conducted a systematic review of the research literature and summarized twenty-one randomized clinical trials of transitional care interventions targeting chronically ill adults. They identified nine interventions that demonstrated positive effects on measures related to hospital readmissions—a key focus of health reform. Most of the interventions led to reductions in readmissions through at least thirty days after discharge. All but one of these nine studies reported reductions in all-cause readmissions through at least thirty days after discharge. Three of the remaining eight interventions found positive, long-term effects in all-cause readmissions through six months or twelve months following the index hospital discharge. These include two

comprehensive discharge planning and follow-up interventions with home visits. One of the two demonstrated statistically significant reductions in rehospitalizations among patients hospitalized for common medical or surgical conditions through six months. The other reduced all-cause readmissions among hospitalized heart failure patients through twelve months. (Naylor 2011)

1a.4 Citations for Evidence of High Impact cited in 1a.3:

Benbassat J, Taragin M. 2000 Hospital readmissions as a measure of quality of health care. Arch Intern Med 160:1074-1081.
CDC. 2001. National Center for Health Statistics. National Hospital Ambulatory Medical Care Survey: 2001, Outpatient Department Summary.
Cook CK, Surgenor SD, and Corwin HL. 2006. Outcomes of Mechanically Ventilated Patients who require readmission to the intensive care unit. Chest 130(4):205S.
Friedman B, Basu J. 2004. The rate and cost of hospital readmissions for preventable conditions. Med Care Res Rev. 61:225-239.
Gallagher B, Cen L, and Hannan EL., Readmissions for Selected Infections Due to Medical Care: Expanding the Definition of a Patient Safety Indicator, 2005, http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=aps.section.1636 (October 13, 2008), Advances in Patient Safety: From Research to Implementation. AHRQ.
Halasyamani, L et al. 2006. Transition of Care for Hospitalized Elderly Patients—Development of a Discharge Checklist for Hospitalists. Journal of Hospital Medicine 1:354–360.
Institute for Healthcare Improvement 2004a. Reducing readmissions for heart failure patients: Hackensack University Medical Center. http://www.ihi.org.
Institute for Healthcare Improvement 2004b. The MedProvider inpatient care unit—congestive heart failure project. http://www.ihi.org.
Jencks, S. F., Williams, M. V., & Coleman, E. A. (2009). Rehospitalizations among patients in the Medicare fee-for-service program. N Engl J Med, 360(14), 1418-1428.
Jiang HJ, Andrews R, Stryer D, and Friedman B. 2005. Racial/Ethnic Disparities in Potentially Preventable Readmissions: The Case of Diabetes. American Journal of Public Health 95(9):1561-1567.
Kossovksy MP, Sarasin FP, Perneger TV, Chopard P, Sigaud P,and Gaspoz JM. 2000. Unplanned readmissions of patients with congestive heart failure: do they reflect in-hospital quality of care or patient characteristics? American Journal of Medicine 109(5).
Krumholz, H. M., et al. (2009). 2009 Measures Maintenance Technical Report: Acute Myocardial Infarction, Heart Failure, and Pneumonia 30-Day Risk-Standardized Readmission Measures: Yale-New Haven Health Services Corporation / Center for Outcomes Research & Evaluation (YNHHSC/CORE)o. Document Number)
Lagoe, R et al. 2001. Hospital Readmission: Predicting the Risk. Journal of Nursing Care Quality (JNCQ). 15 (4): 69-83.
MedPac, Report to the Congress: Promoting Greater Efficiency in Medicare, June 2007, http://www.medpac.gov/documents/Jun07_EntireReport.pdf (October 13, 2008).
Naylor MD, Aiken LH, Kurtzman ET, Olds DM, Hirschman KB: The importance of transitional care in achieving health reform. Health Affairs 2011, 30:746-754
The Commonwealth Fund. September 2006. The Commonwealth Fund Commission on a High Performance Health System, Why Not the Best? Results from a National Scorecard on U.S. Health System Performance.
The Commonwealth Fund. March 2008. The Commonwealth Fund Commission on a Case Study: Reducing Hospital Readmissions Among Heart Failure Patients at Catholic Healthcare Partners.
PacifiCare Inpatient Hospital Readmission Index Methodology, (2007).
Pope, G. C., Kautter, J., Ellis, R. P., Ash, A. S., Ayanian, J. Z., Lezzoni,
L. I., et al. (2004). Risk adjustment of Medicare capitation payments using the CMS-HCC model. Health Care Financ Rev, 25(4), 119-141.
Rathore SS, Masoudi FA, Wang Y, Curtis JP, Foody JM, Havranek EP, and Krumholz HM. 2006. Socioeconomic status, treatment, and outcomes among elderly patients hospitalized with heart failure: findings from the national heart failure project. Am Heart J. 152(2):371-378.
Rosenberg AL and C Watts. 2000. Patients Readmitted to ICUs. A systematic review of risk factors and outcomes. Critical Care Reviews. Chest 118: 492 - 502.
Ross, JS, Mulvey, GK, Stauffer, B, Patlolla, V, Bernheim, SM., Keenan, PS, et al. (2008). Statistical models and patient predictors of readmission for heart failure: a systematic review. Arch Intern Med, 168(13), 1371-1386.
Vinson JM, Rich MW, Sperry JC, Shah AS, McNamaara T. 1990. Early readmission of elderly patients with congestive heart failure. J Am Geriatr Soc 38(12):1290-5.
Weissman JS, Ayanian JZ, Chasan-Taber, Sherwood MJ, Roth C, Epstein AM. 999. Hospital readmissions and quality of care. Medical Care 37(5): 490-501.

1b. Opportunity for Improvement: H☐ M☐ L☐ I ☐
(*There is a demonstrated performance gap - variability or overall less than optimal performance*)

1b.1 Briefly explain the benefits (improvements in quality) envisioned by use of this measure:
A plan based measure to reduce readmission rates will decrease readmissions rates by improving post-discharge planning and preventive health services.

This measure relies on data that is available to health plans and is intended to be used to hold health plans (or where Medicare data or cross health plan data is available, all providers) accountable for readmissions. In this sense it is complementary to hospital focused measures, since by taking this broader perspective, it can include hospitalizations that occur to different hospitals than the hospital to which the initial admission occurred, can be used to foster joint accountability across entities (hospital, home care, specialty and primary care ambulatory care) as might be present in an accountable care organization or integrated delivery system. It also takes into account that even where a problem in hospital care or transition out of the hospital may have contributed to a preventable readmission, care in other sites may have contributed to the readmission as well.

1b.2 Summary of Data Demonstrating Performance Gap *(Variation or overall less than optimal performance across providers)*: [*For Maintenance – Descriptive statistics for performance results for this measure - distribution of scores for measured entities by quartile/decile, mean, median, SD, min, max, etc.*]
Medicare – Measurement Year 2010
Number of Health Plans 424
MEAN 0.164
STDEV 0.028
STDERR N/A
MIN 0.06
MAX 0.35
P10; 0.136
P25; 0.149
P50; 0.162
P75; 0.175
P90; 0.198

Commercial - Measurement Year 2010
Number of Health Plans 314
MEAN 0.083
STDEV 0.011
STDERR N/A
MIN 0.050
MAX 0.114
P10; 0.066
P25; 0.076
P50; 0.085
P75; 0.090
P90; 0.096

1b.3 Citations for Data on Performance Gap: [*For Maintenance – Description of the data or sample for measure results reported in 1b.2 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]
Section 1b.2 references NCQA's HEDIS data from the first year of measurement for this measure (2010). The data in section 1b.2 includes percentiles, mean, min, max, standard deviations and standard errors.

1b.4 Summary of Data on Disparities by Population Group: [*For Maintenance –Descriptive statistics for performance results for this measure by population group*]
We collect the data separately by age and gender cohorts to permit monitoring of potential disparities, however there is no specific evidence of disparity for these groups. The measure is not stratified by race/ethnic group or cohorts. NCQA has participated with IOM and others in attempting to include information on disparities in measure data collection. However, at the present time, this

data, at all levels (claims data, paper chart review, and electronic records), is not coded in a standard manner, and is incompletely captured. There are no consistent standards for what entity (physician, group, plan, and employer) should capture and report this data. While "requiring" reporting of the data could push the field forward, it has been our position that doing so would create substantial burden without generating meaningful results. We believe that the measure specifications should NOT require this unless absolutely necessary since the data needed to determine disparities cannot be ascertained from the currently available sources.

1b.5 Citations for Data on Disparities Cited in 1b.4: [*For Maintenance – Description of the data or sample for measure results reported in 1b.4 including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included*]
N/A

1c. Evidence (*Measure focus is a health outcome OR meets the criteria for quantity, quality, consistency of the body of evidence.*)
Is the measure focus a health outcome? Yes☐ No☐ If not a health outcome, rate the body of evidence.

Quantity: H☐ M☐ L☐ I ☐ Quality: H☐ M☐ L☐ I ☐ Consistency: H☐ M☐ L☐ I ☐

Quantity	Quality	Consistency	Does the measure pass subcriterion1c?
M-H	M-H	M-H	Yes☐
L	M-H	M	Yes☐ IF additional research unlikely to change conclusion that benefits to patients outweigh harms: otherwise No☐
M-H	L	M-H	Yes☐ IF potential benefits to patients clearly outweigh potential harms: otherwise No☐
L-M-H	L-M-H	L	No ☐

Health outcome – rationale supports relationship to at least one healthcare structure, process, intervention, or service	Does the measure pass subcriterion1c? Yes☐ IF rationale supports relationship

1c.1 Structure-Process-Outcome Relationship *(Briefly state the measure focus, e.g., health outcome, intermediate clinical outcome, process, structure; then identify the appropriate links, e.g., structure-process-health outcome; process- health outcome; intermediate clinical outcome-health outcome)*:
The health plan Plan All-Cause Readmissions measure is a utilization outcome measure. A number of studies, described below, have documented a link between clinical processes of care at hospitals and post-discharge in the community that influence readmission rate performance. The range of interventions include discharge planning, medication reconciliation, care transition measurement and programs, and post-discharge follow-up with community providers. Most of this work has focused on specific conditions with high readmission rates (e.g., CHF, AMI, pneumonia), but interventions have been applied to many types of discharges and there is a strong theoretical basis for expecting these interventions to apply across all hospital discharges.

A large number of interventional and observational studies, including a number of randomized controlled trials address prevention of readmissions. The most compelling evidence has been developed with patients who have congestive heart failure although diabetes and COPD, as well as some surgical procedures have been studied. While not uniformly positive in their outcomes, both observational and RCT's studies have shown significantly positive results, including studies involving nurse case management , physician follow-up visits , home visits , telephonic follow-up and care in a patient centered medical home reduced readmissions from 5 to nearly 30%.

Other studies focused on the hospital phase of care, have found that lower readmission rates are related to higher use of nurse transition care managers, overall hospital quality scores, higher patient satisfaction with care, "reengineering" of hospital discharge and use of a consulting pharmacist at discharge. While as noted, there are also a number of published studies showing no impact of some interventions designed to reduce readmissions, there is a strong and growing consensus that a substantial sub-set of readmissions are indeed, avoidable with more effective care either within the original admission, at the time of discharge, or in the ambulatory other settings. The strongest evidence is in the use of more stringent follow-up after discharge, using nurse care managers either from the hospital, home care agency, or primary care practice, in the days directly following discharge.

The 2005 MedPAC Report analyzed the admission trends for seven chronic conditions that comprise almost 30% of the spending on readmissions. For these seven conditions, heart failure, COPD, pneumonia, AMI, CABG, PTCA and other vascular conditions

the readmission rates were 12.5%, 10.7%, 9.5%, 13.4%, 13.5%, 10.0% and 11.7%, respectively. These rates illustrate the substantial expenditure as well as a need for change in the quality of the care coordination for patients with these conditions (MedPac, 2007). Additionally, in 2005 the 30-day hospital readmission rates for Medicare patients ranged from 14% to 22%. If readmission rates were lowered to the levels achieved by the top performing regions, Medicare would save $1.9 billion annually (Commonwealth Fund, 2006).

In a case study in reducing hospital readmissions conducted by Catholic Healthcare Partners, 29 to 47% of elderly CHF patients were readmitted within 3 to 6 months of initial hospitalization (Commonwealth, 2008). MedPAC has shown that for 15-day readmission rates for CHF has an average of 12.5%. As roughly 20% of hospitals that treat patients who have CHF have been found to have inpatient readmission rates of more than 4%age points higher than expected (MedPAC, 2007). Along with MedPAC, many experts including the Institute for Healthcare Improvement concur that CHF can be considered a potentially preventable readmission (MedPAC, 2007and IHI, 2004).

As evidence has shown that since almost 30% of readmissions in the 15-day discharge period are from conditions related to CHF, COPD, and CABG, MedPAC believes it may be wise to focus on the DRGs with this high volume and high rates of readmission as hospitals can gain experience in measurements and further expansions can be assessed by the first groups of DRGs that were measured (MedPAC, 2007).

1c.2-3 Type of Evidence *(Check all that apply)*:
Selected individual studies (rather than entire body of evidence)

1c.4 Directness of Evidence to the Specified Measure *(State the central topic, population, and outcomes addressed in the body of evidence and identify any differences from the measure focus and measure target population)*:
The evidence directly relates to the topic of readmissions and to the measurement population. The outcomes in the evidence are similar to the measure, because they look at readmissions within 30 days, they look at several causes for admission, and they are based on specific risk adjustment methodology.

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles)*: Three

1c.6 Quality of Body of Evidence (*Summarize the certainty or confidence in the estimates of benefits and harms to patients across studies in the body of evidence resulting from study factors. Please address: a) study design/flaws; b) directness/indirectness of the evidence to this measure (e.g., interventions, comparisons, outcomes assessed, population included in the evidence); and c) imprecision/wide confidence intervals due to few patients or events*): Systematic synthesis of research and expert opinion = Low

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):* The studies consistently point towards the costs of avoidable readmissions, and they point to how the health care system can be a factor in limiting readmissions.

1c.8 Net Benefit *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:
The studies show that reducing readmissions is synonymous with better care in the index admission stay and better planning upon discharge.

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? No

1c.10 If body of evidence graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias: N/A

1c.11 System Used for Grading the Body of Evidence: Other

1c.12 If other, identify and describe the grading scale with definitions: The evidence has not been graded.

1c.13 Grade Assigned to the Body of Evidence: N/A

1c.14 Summary of Controversy/Contradictory Evidence: The following are the main controversies:

1. Whether to use 30-day readmission versus another timeframe (e.g., 7, 14, 60, or 90 days).
2. What is the proper accountable entity?
3. Whether to measure readmission rates for specific conditions or for all conditions.
4. What risk adjustors to use.
5. How to identify planned readmissions and staged procedures.
6. Whether interventions to reduce 30-day readmission rates are effective.
7. Is a readmission percentage the right metric to use?
8. Are readmissions preventable? Is there a lower limit to the measure?

1. 30-day versus other follow-up period.

Some argue that a shorter or longer period may be appropriate to measure in addition or instead of 30-day readmission. The argument for shorter intervals is that a hospital's responsibility for and capacity to affect readmission declines the further one gets from the discharge date. Beyond 7 or 14 days and certainly after 30 days, readmission depends on community and system support and resources, although hospitals are part of this system. The research and quality monitoring literature has settled upon 30 days as the standard,

2. Accountable entity.

Most measurement has focused on the hospital as the accountable entity, and hospitals have significant influence on readmission decisions: they may be responsible for hospital acquired conditions or patient safety events resulting in readmission, medication reconciliation problems, or discharge planning problems. However, hospitals often are isolated from other community providers, limiting their capacity to influence patient behavior. Health plans, on the other hand define the available service networks and are in a position to monitor patients across settings and intervene to ensure accessibility of community services that may prevent readmission. We view health plans as an appropriate entity, especially for 30 day readmissions, and measurement for this group as complementary to hospital based measures and reporting.

3. Specific v. All Conditions

Readmission rates for specific conditions are perceived as more actionable: a hospital or health plan could implement interventions that target similarly situated cases to improve coordination and reduce readmission. However, many of the factors that influence readmission span all hospitalizations. Medication reconciliation and discharge planning and communication with community providers is appropriate for nearly all discharges. Thus, we would argue that a readmission measure for all-cause discharges provide an important composite measure of hospital and/or health plan performance.

4. Risk adjustors

The two NQF endorsed systems to date are DRG payment weight (Pacificare's 30-day hospital-based readmission rate for commercial populations, Mesure ID XXX) and the HCC conditions. Both attempt to address attributes of the patient's condition at time of discharge to adjust comparisons. DRG payment weight, however, is a measure of the resources used to treat a condition, which may not correlate with readmission problems: expensive hospitalizations can have low readmission rates, and inexpensive ones can have high readmission rates. The DRG approach also only focuses on the index condition and ignores relevant comorbidities. The HCC approach captures the full spectrum of conditions experienced in the past 12 months. Because our approach codes a dummy variable for the presence of the condition(s) instead of the payment weight, one does not need to depend on the correlation between resources and readmission processes.

5. How to identify planned readmissions and staged procedures.

Defining planned readmissions and staged procedures is difficult for specific conditions; moving to an all-cause discharge measure compounds the problem because so many different clinical or social circumstances may lead to planned readmission. What is certain is that identifying such events is error-prone whether excluded from the model or not. What is relevant for public reporting and monitoring purposes is that similar situated accountable entities, be they hospitals or health plans, are not unfairly penalized for differences in the rate of planned or staged readmissions. While such differences may be likely in some circumstances for hospitals (e.g., certain chemotherapies for cancers that require frequent readmission), they are unlikely across health plans, particularly health plans serving the same geographic areas.

6. Whether interventions to reduce readmissions are effective.

A large number of interventional and observational studies, including a number of randomized controlled trials address prevention of readmissions. The most compelling evidence has been developed with patients who have congestive heart failure although diabetes and COPD, as well as some surgical procedures have been studied. While not uniformly positive in their outcomes, both observational and RCT's studies have shown significantly positive results, including studies involving nurse case management , physician follow-up visits , home visits , telephonic follow-up and care in a patient centered medical home reduced readmissions from 5 to nearly 30%.

Other studies focused on the hospital phase of care, have found that lower readmission rates are related to higher use of nurse transition care managers, overall hospital quality scores, higher patient satisfaction with care, "reengineering" of hospital discharge and use of a consulting pharmacist at discharge. While as noted, there are also a number of published studies showing no impact of some interventions designed to reduce readmissions, there is a strong and growing consensus that a substantial sub-set of readmissions are indeed, avoidable with more effective care either within the original admission, at the time of discharge, or in the ambulatory other settings. The strongest evidence is in the use of more stringent follow-up after discharge, using nurse care managers either from the hospital, home care agency, or primary care practice, in the days directly following discharge.

7. Is a readmission percentage the right metric?

One powerful—and poorly recognized—influence on readmission rates is the local pattern of hospital utilization, irrespective of discharge planning and care coordination. Communities and health care systems that have higher underlying admission rates tend to have higher readmission rates, suggesting that they are more likely to rely on the hospital as a site of care. (Dartmouth Atlas 2011) Jencks has noted that a conceptual limit of the 30-day readmission rate is that hospitals that implement interventions to reduce hospitalizations overall (i.e., prevent the index admission itself) potentially penalize themselves by simultaneously reducing the denominator and numerator—they could address the readmission problem and yet have higher measured readmission rate. This is a sophisticated argument, but one that is hypothetical at this point. We argue that the 30-day readmission rate is just one of potentially many measures that could inform public policy and hospital and plan quality measurement. The plan all-cause readmission measure could complement a variety of other measures, be they hospital-based or a different measure altogether (e.g., number of readmissions as a proportion of all hospitalizations).

8. Are readmissions preventable? Is there a lower limit to the measure?

Even though research has shown potentially preventable readmissions can reach rates of 50%, retrospective audits have shown variations from 9% to 50%. While one evaluator identifies 31% potential preventable readmissions, another researcher considers only 15% as the rate of preventable readmissions. This wide variation may show the limited usefulness of this measure in the connection to quality improvement in facilities. The researchers postulate the reason for this variation is because of the inconsistency of the definition of a readmission as preventable and therefore limits the reliability of this measure (Benbassat, 2000). While lower SES has a correlation with higher readmission rates, researchers have cautioned that this may be attributed to access issues and without clinical data it is unclear whether the circumstances of readmissions were medically essential (Rathore, 2006).

The assumption that high readmission rates are always bad and that high rates of early follow-up are always good does not acknowledge the complex nature of patient care. For example, if the physicians in a region or health care system perform a higher proportion of surgical procedures in outpatient facilities, the remaining inpatient surgical patients will be likely to have higher severity of illness and, thus, higher risk of readmission. Whether patients are discharged to an inpatient rehabilitation or skilled nursing facility may influence how likely they are to be readmitted to the hospital; and health care systems that have implemented care transition models using telephone follow-up may have lower rates of early ambulatory clinician visits while still providing excellent care.

1c.15 Citations for Evidence other than Guidelines*(Guidelines addressed below)*:

Benbassat J, Taragin M. 2000 Hospital readmissions as a measure of quality of health care. Arch Intern Med 160:1074-1081.
CDC. 2001. National Center for Health Statistics. National Hospital Ambulatory Medical Care Survey: 2001, Outpatient Department Summary.
Cook CK, Surgenor SD, and Corwin HL. 2006. Outcomes of Mechanically Ventilated Patients who require readmission to the intensive care unit. Chest 130(4):205S.
Friedman B, Basu J. 2004. The rate and cost of hospital readmissions for preventable conditions. Med Care Res Rev. 61:225-239.

Gallagher B, Cen L, and Hannan EL., Readmissions for Selected Infections Due to Medical Care: Expanding the Definition of a Patient Safety Indicator, 2005, http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=aps.section.1636 (October 13, 2008), Advances in Patient Safety: From Research to Implementation. AHRQ.
Halasyamani, L et al. 2006. Transition of Care for Hospitalized Elderly Patients—Development of a Discharge Checklist for Hospitalists. Journal of Hospital Medicine 1:354–360.
Institute for Healthcare Improvement 2004a. Reducing readmissions for heart failure patients: Hackensack University Medical Center. http://www.ihi.org.
Institute for Healthcare Improvement 2004b. The MedProvider inpatient care unit—congestive heart failure project. http://www.ihi.org.
Jencks, S. F., Williams, M. V., & Coleman, E. A. (2009). Rehospitalizations among patients in the Medicare fee-for-service program. N Engl J Med, 360(14), 1418-1428.
Jiang HJ, Andrews R, Stryer D, and Friedman B. 2005. Racial/Ethnic Disparities in Potentially Preventable Readmissions: The Case of Diabetes. American Journal of Public Health 95(9):1561-1567.
Kossovksy MP, Sarasin FP, Perneger TV, Chopard P, Sigaud P,and Gaspoz JM. 2000. Unplanned readmissions of patients with congestive heart failure: do they reflect in-hospital quality of care or patient characteristics? American Journal of Medicine 109(5).
Krumholz, H. M., et al. (2009). 2009 Measures Maintenance Technical Report: Acute Myocardial Infarction, Heart Failure, and Pneumonia 30-Day Risk-Standardized Readmission Measures: Yale-New Haven Health Services Corporation / Center for Outcomes Research & Evaluation (YNHHSC/CORE)o. Document Number)
Lagoe, R et al. 2001. Hospital Readmission: Predicting the Risk. Journal of Nursing Care Quality (JNCQ). 15 (4): 69-83.
MedPac, Report to the Congress: Promoting Greater Efficiency in Medicare, June 2007, http://www.medpac.gov/documents/Jun07_EntireReport.pdf (October 13, 2008).
The Commonwealth Fund. September 2006. The Commonwealth Fund Commission on a High Performance Health System, Why Not the Best? Results from a National Scorecard on U.S. Health System Performance.
The Commonwealth Fund. March 2008. The Commonwealth Fund Commission on a Case Study: Reducing Hospital Readmissions Among Heart Failure Patients at Catholic Healthcare Partners.
PacifiCare Inpatient Hospital Readmission Index Methodology, (2007).
Pope, G. C., Kautter, J., Ellis, R. P., Ash, A. S., Ayanian, J. Z., Lezzoni,
L. I., et al. (2004). Risk adjustment of Medicare capitation payments using the CMS-HCC model. Health Care Financ Rev, 25(4), 119-141.
Rathore SS, Masoudi FA, Wang Y, Curtis JP, Foody JM, Havranek EP, and Krumholz HM. 2006. Socioeconomic status, treatment, and outcomes among elderly patients hospitalized with heart failure: findings from the national heart failure project. Am Heart J. 152(2):371-378.
Rosenberg AL and C Watts. 2000. Patients Readmitted to ICUs. A systematic review of risk factors and outcomes. Critical Care Reviews. Chest 118: 492 - 502.
Ross, JS, Mulvey, GK, Stauffer, B, Patlolla, V, Bernheim, SM., Keenan, PS, et al. (2008). Statistical models and patient predictors of readmission for heart failure: a systematic review. Arch Intern Med, 168(13), 1371-1386.
Vinson JM, Rich MW, Sperry JC, Shah AS, McNamaara T. 1990. Early readmission of elderly patients with congestive heart failure. J Am Geriatr Soc 38(12):1290-5.
Weissman JS, Ayanian JZ, Chasan-Taber, Sherwood MJ, Roth C, Epstein AM. 999. Hospital readmissions and quality of care. Medical Care 37(5): 490-501.
Goodman, D, Fisher, E, Chang, C. Dartmouth Atlas Project, 2011. After Hospitalization: A Dartmouth Atlas Report on Post-Acute Care for Medicare Beneficiaries. Sept. 2011.

1c.16 Quote verbatim, the specific guideline recommendation *(Including guideline # and/or page #)*:
N/A

1c.17 Clinical Practice Guideline Citation: N/A

1c.18 National Guideline Clearinghouse or other URL: N/A

1c.19 Grading of Strength of Guideline Recommendation. Has the recommendation been graded? No

1c.20 If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:

1c.21 System Used for Grading the Strength of Guideline Recommendation: Other

1c.22 If other, identify and describe the grading scale with definitions: N/A

1c.23 Grade Assigned to the Recommendation: N/A

1c.24 Rationale for Using this Guideline Over Others: NCQA convened an expert panel of diverse stakeholders to review the evidence for this measure. The panel determined the measure was scientifically sound using the full body of evidence for this measure concept.

Based on the NQF descriptions for rating the evidence, what was the developer's assessment of the quantity, quality, and consistency of the body of evidence?
1c.25 Quantity: Moderate 1c.26 Quality: Moderate1c.27 Consistency: Moderate

Was the threshold criterion, *Importance to Measure and Report*, met?
(*1a & 1b must be rated moderate or high and 1c yes*) Yes☐ No☐
Provide rationale based on specific subcriteria:

For a new measure if the Committee votes NO, then STOP.
For a measure undergoing endorsement maintenance, if the Committee votes NO because of 1b. (no opportunity for improvement), it may be considered for continued endorsement and all criteria need to be evaluated.

2. RELIABILITY & VALIDITY - SCIENTIFIC ACCEPTABILITY OF MEASURE PROPERTIES

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. (evaluation criteria)
Measure testing must demonstrate adequate reliability and validity in order to be recommended for endorsement. Testing may be conducted for data elements and/or the computed measure score. Testing information and results should be entered in the appropriate field. Supplemental materials may be referenced or attached in item 2.1. See guidance on measure testing.

S.1 Measure Web Page *(In the future, NQF will require measure stewards to provide a URL link to a web page where current detailed specifications can be obtained*). Do you have a web page where current detailed specifications for this measure can be obtained? No

S.2 If yes, provide web page URL:

2a. RELIABILITY. Precise Specifications and Reliability Testing: H☐ M☐ L☐ I☐

2a1. Precise Measure Specifications. (*The measure specifications precise and unambiguous.*)

2a1.1 Numerator Statement *(Brief, narrative description of the measure focus or what is being measured about the target population, e.g., cases from the target population with the target process, condition, event, or outcome)*:
At least one acute readmission for any diagnosis within 30 days of the Index Discharge Date.

2a1.2 Numerator Time Window *(The time period in which the target process, condition, event, or outcome is eligible for inclusion)*:
All acute inpatient stays with an admission date on or between January 2 and December 31 of the measurement year.

2a1.3 Numerator Details *(All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, codes with descriptors, and/or specific data collection items/responses*:
Acute-to-acute transfers: Keep the original admission date as the Index Admission Date, but use the transfer's discharge date as the Index Discharge Date.
Exclude acute inpatient hospital discharges with a principal diagnosis for codes that identify maternity related inpatient discharges for the following ICD-9CM codes:
- Pregnancy: 630-679, V22, V23, V28
- Conditions originating in the perinatal period: 760-779, V21, V29-V39
For each IHS, determine if any of the acute inpatient stays have an admission date within 30 days after the Index Discharge Date.

2a1.4 Denominator Statement *(Brief, narrative description of the target population being measured)*:
For commercial health plans, ages 18-64 as of the Index Discharge Date. For Medicare and Special Needs Plans, ages 18 and older as of the Index Discharge Date.

2a1.5 Target Population Category *(Check all the populations for which the measure is specified and tested if any)*: Adult/Elderly Care

2a1.6 Denominator Time Window *(The time period in which cases are eligible for inclusion)*:
Identify all acute inpatient stays with a discharge date on or between January 1 and December 1 of the measurement year.

2a1.7 Denominator Details (*All information required to identify and calculate the target population/denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
The denominator for this measure is based on acute discharges, not members.

- Identify all acute inpatient stays with a discharge date on or between January 1 and December 1 of the measurement year.
- Acute-to-acute transfers: Keep the original admission date as the Index Admission Date, but use the Transfer's discharge date as the index Discharge Date.
- Calculate continuous enrollment.
- Assign each acute inpatient stay to one age and gender category.

2a1.8 Denominator Exclusions *(Brief narrative description of exclusions from the target population)*:
Exclude hospital stays where the Index Admission Date is the same as the Index Discharge Date and any inpatient stay with a discharge date in the 30 days prior to the Index Admission Date.

2a1.9 Denominator Exclusion Details *(All information required to identify and calculate exclusions from the denominator such as definitions, codes with descriptors, and/or specific data collection items/responses)*:
Exclude the hospital and inpatient stays for the following reasons.
- Inpatient stays with discharges for death
- Acute inpatient discharge with a principal diagnosis for pregnancy or for any other condition originating in the perinatal period in for the following ICD-9CM codes

Pregnancy: 630-679, V22, V23, V28
Conditions originating in the perinatal period: 760-779, V21, V29-V39

2a1.10 Stratification Details/Variables *(All information required to stratify the measure results including the stratification variables, codes with descriptors, definitions, and/or specific data collection items/responses)*:
The measure includes a table that stratifies the five reporting data elements by age and gender. The five elements are:
1. Count of Index Stays
2. Count of 30-Day Readmissions
3. Average Adjusted Probability
4. Observed Readmission (Numerator/Denominator)
5. Total Variance

The age stratifications are:
Commercial: 18-44, 45-54, 55-64, Total
Medicare: 65-74, 75-84, 85+., Total

The measure is also stratified by gender.

Values are reported for each stratification.

2a1.11 Risk Adjustment Type *(Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in 2a1.13)*: Stratification by risk category/subgroup 2a1.12 If "Other," please describe:

2a1.13 Statistical Risk Model and Variables *(Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development should be addressed in 2b4.)*:
Indirect standardization, using logistic regression

Uses the CC and HCC models to identify comorbidities and attaches weights to each statistically significant comorbidity by product line and age grouping.

We estimated a stepwise logistic regression. The binary dependent variable was coded 1 for index hospital stays that had a subsequent readmission within 30 days, and 0 otherwise. The independent variables in the models were:
- age-gender cohort:
Commercial: male 18-44, female 18-44, male 45-54, female 45-54, male 55-64 (reference group), female 55-64.
In year 1, the model for Medicare used:
Medicare 18 and older: male 18-44, female 18-44, male 45-54, female 45-54, male 55-64, female 55-64. male 65-74 (reference group), female 65-74, male 75-84, female 75-84, male 85+, female 85+.
In year 2, the model for Medicare will use: male 65-74 (reference group), female 65-74, male 75-84, female 75-84, male 85+, female 85+.
- Major surgery: 1=index hospital stay was for major surgery (see code list in algorithm); 0, otherwise.
- Discharge Clinical Condition (CC) from the HCC classification system: 1=index hospital stay was for the CC; 0, otherwise.
Note: each index hospital stay is coded into exactly one CC and is based only on the primary diagnosis.
- Comorbid Hierarchical Clinical Condition (HCC): 1=index hospital stay had the associated comorbidity (HCC) indicated through any diagnosis on a face to face claim/encounter for the 12 months prior to the index hospital stay discharge date; 0, otherwise.

2a1.14-16 Detailed Risk Model Available at Web page URL (or attachment). Include coefficients, equations, codes with descriptors, definitions, and/or specific data collection items/responses. Attach documents only if they are not available on a webpage and keep attached file to 5 MB or less. NQF strongly prefers you make documents available at a Web page URL. Please supply login/password if needed:
Attachment
NQF_Weights Table for PCR Measures (Updated).pdf

2a1.17-18. Type of Score: Other Rate/Proportion and Count: The Counts are the number of index hospital stays (denominator) and stays with a subsequent 30-day readmission (numerator). The Rate/Proportions are the average adjusted probability of readmission (expected rate) and the observed rate of readmission (numerator / denominator).

2a1.19 Interpretation of Score *(Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)*: Better quality = Lower score

2a1.20 Calculation Algorithm/Measure Logic*(Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.)*:
Look at denominator details, numerator details and the risk adjustment methodology for the measure logic in sections 2a1.7 and 2a1.13.

The calculation for continuous enrollment is as follows:
Step 1: Determine the eligible population. For commercial health plans, ages 18-64 as of the Index Discharge Date. For Medicare and Special Needs Plans, ages 18 and older as of the Index Discharge Date.

Step 2: Determine number discharges meeting the denominator criteria as specified in Section 2a1.7 above.

Step 3: Determine the number of patients who meet the numerator criteria as specified in section 2a1.3 above. The numerator includes all patients in the denominator population who had acute inpatient stays with an admission date on or between January 1 and December 31 of the measurement year.

Step 4: Determine the number of exclusions Step 3 as specified in section 2a1.8. Patients with hospital stays where the Index Admission Date is the same as the Index Discharge Date and any inpatient stay with a discharge date in the 30 days prior to the Index Admission Date are exclusions.

Step 5: Calculate the rate

The risk adjustment calculation is:
Surgeries:
Determine if the member underwent surgery during the inpatient stay. Download the list of codes from the NCQA Web site for the surgery codes for risk adjustment and use it to identify surgeries. Consider an IHS to include a surgery if at least one procedure code is present from any provider between the admission and discharge dates.

Discharge Condition:
Assign a discharge Clinical Condition (CC) category code to IHS based on its primary discharge diagnosis. For acute-to-acute transfers, use the transfer's primary Discharge diagnosis. Exclude diagnoses that cannot be mapped.

Comorbidities: This is determined by performing the following steps:

Step 1: Identify all diagnoses for face-to-face encounters during the classification period. Exclude the primary discharge diagnosis on the IHS.

Description // CPT // UB Revenue
Outpatient // 92002,92004, 92012, 92014, 98925-98929, 98940-98942, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99384-99387, 99394-99397, 99401-99404, 99411, 99412, 99420, 99429, 99455, 99456 // 051x, 0520-0523, 0526-0529, 057x-059x, 082x-085x, 088x, 0982, 0983

Nonacute Inpatient // 99304-99310, 99315, 99316, 99318, 99324-99328, 99334-99337 // 0118, 0128, 0138, 0148, 0158, 019x, 0524, 0525, 055x, 066x, 1001, 1002

Acute Inpatient // 99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99291 // 010x, 0110-0114, 0119, 0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x, 021x, 072x, 080x, 0987

ED // 99281-99285 // 045x, 0981
Step 2: Assign each diagnosis to one comorbid Clinical Condition (CC) category using Table CC—Comorbid. Exclude all diagnoses that cannot be assigned to a comorbid CC category. For members with no qualifying diagnoses from face-to-face encounters, skip to the Risk Adjustment Weighting section. All digits must match exactly when mapping diagnosis codes to the comorbid CCs.
Step 3: Determine HCCs for each comorbid CC identified. Refer to Table HCC—Rank. For each stay's comorbid CC list, match the comorbid CC code to the comorbid CC code in the table, and assign:
- The ranking group
- The rank
- The HCC
For comorbid CCs that do not match to Table HCC—Rank, use the comorbid CC as the HCC and assign a rank of 1.
Note: One comorbid CC can map to multiple HCCs; each HCC can have one or more comorbid CCs.
Step 4: Select only the highest ranked HCC in each ranking group using the Rank column (1 is the highest rank possible).
Drop all other HCCs in each ranking group, and de-duplicate the HCC list if necessary.
Example: Assume a stay with the following comorbid CCs: CC-15, CC-19 and CC-80 (assume no other CCs).
- CC-80 does not have a map to the ranking table and becomes HCC-80
- HCC-15 is part of Ranking Group 1 and HCC-19 is part of Ranking Groups Diabetes 1–Diabetes 4. Because CC-15 is ranked higher than CC-19 in Ranking Group Diabetes 1, the comorbidity is assigned as HCC-15 for Ranking Group 1. Because CC-19 is ranked higher in Ranking Groups Diabetes 2-4, the comorbidity is assigned as HCC-19 for these ranking groups.

The final comorbidities for this discharge include HCC-15, HCC-19 and HCC-80.

Example:

Ranking Group // CC // Description // Rank // HCC

NA // CC-80 // Congestive Heart Failure // NA // HCC-80

Diabetes 1 // CC-15 // Diabetes With Renal or Peripheral Circulatory Manifestation // 1 // HCC-15
Diabetes 1 // CC-16 // Diabetes With Neurologic or Other Specified Manifestation // 2 // HCC-16
Diabetes 1 // CC-17 // Diabetes With Acute Complications // 3 // HCC-17
Diabetes 1 // CC-18 // Diabetes With Ophthalmologic or Unspecified Manifestation // 4 // HC-18
Diabetes 1 // CC-19 // Diabetes without Complications // 5 // HCC-19

Diabetes 2 // CC-16 // Diabetes With Neurologic or Other Specified Manifestation // 1 // HCC-16
Diabetes 2 // CC-17 // Diabetes with Acute Complications // 2 // HCC-17
Diabetes 2 // CC-18 // Diabetes With Ophthalmologic or Unspecified Manifestation // 3 // HCC-18
Diabetes 2 // CC-19 // Diabetes Without Complication // 4 // HCC-19

Diabetes 3 // CC-17 // Diabetes With Acute Complications // 1 // HCC-17
Diabetes 3 // CC-18 // Diabetes With Ophthalmologic or Unspecified Manifestation // 2 // HCC-18
Diabetes 3 // CC-19 // Diabetes Without Complication // 3 // HCC-19

Diabetes 4 // CC-18 // Diabetes With Ophthalmologic or Unspecified Manifestation // 1 //HCC-18
Diabetes 4 // CC-18 // Diabetes Without Complication // 2 // HCC-19

Step 5: Identify combination HCCs.
Some combinations suggest a greater amount of risk when observed together. For example, when diabetes and CHF are present, an increased amount of risk is evident. Additional HCCs are selected to account for these relationships.

Compare each stay's list of unique HCCs to those listed as combinations and assign any additional HCC conditions.

For fully nested combinations (e.g., the diabetes/CHF combinations is nested in the diabetes/CHF/renal combination), use only the more comprehensive pattern. In this example, only the diabetes/CHF/renal combination is counted.

For overlapping combinations (e.g., the CHF, COPD combination overlaps with the CHR/ renal/diabetes combination), use both sets of combinations. In this example, both CHF/COPD and CHF/renal/diabetes combinations are counted.

Based on the combinations, a member can have none, one or more of these added HCCs.

Example: For a stay with comorbidities HCC-15, HCC-19 and HCC-80 (assume no other HCCs), assign HCC-901 in addition to HCC-15, HCC-19 and HCC-80. This does not replace HCC-15, HCC19 or HCC-80.

Example:
Combination: Diabetes and CHF
Comorbid HCC // Comorbid HCC // Comorbid HCC // Combination HCC
HCC-15 // HCC-80 // NA // HCC-901
HCC-16 // HCC-80 // NA // HCC-901
HCC-17 // HCC-80 // NA // HCC-901
HCC-18 // HCC-80 // NA // HCC-901
HCC-19 // HCC-80 // NA // HCC-901

For each IHS, use the following steps to identify risk adjustment weights based on presence of surgeries, discharge condition, comorbidity, age and gender.

Note: The final weights table will be released on November 15, 2011.

Step 1: For each IHS with a surgery, link the surgery weight.

For Medicare product lines ages 18-64:
For Medicare product lines ages 65 and older:
For commercial product lines:

Step 2: For each IHS with a discharge CC Category, link the primary discharge weights.
For Medicare product lines ages 18-64:
For Medicare product lines ages 65 and older:
For commercial product lines:

Step 3: For each IHS with a comorbidity HCC Category, link the weights.
For Medicare product lines ages 18-64:
For Medicare product lines ages 65 and older:
For commercial product lines:

Step 4: Link the age and gender weights for each IHS.
For Medicare product lines ages 18-64:
For Medicare product lines ages 65 and older:
For commercial product lines:

Step 5: Identify the base risk weight.
For Medicare product lines ages 18-64:
For Medicare product lines ages 65 and older:
For commercial product lines:

Step 6: Sum all weights associated with the IHS (i.e., presence of surgery, primary discharge diagnosis, comorbidities, age, gender and base risk weight).

Step 7: Use the formula below to calculate the adjusted probability of a readmission based on the sum of the weights for each IHS.
Adjusted probability of readmission = (e(?Weights for IHS)) Divided by (1+e (?Weights for IHS))
OR
Adjusted probability of readmission = [exp (sum of weights for IHS)] / [1 + exp (sum of weights for IHS)]
Note: “xp” refers to the exponential or antilog function.

Step 8: Use the formula below and the adjusted probability of readmission calculated in Step 7 to calculate the variance for each IHS.

Variance = Adjusted probability of readmission x (1—Adjusted probability of readmission)

Example: If the adjusted probability of readmission is 0.1518450741, then the variance is 0.1518450741 x 0.8481549259 = 0.1287881476.

2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:
Attachment
PCR 2012.docx

2a1.24 Sampling (Survey) Methodology. If measure is based on a sample (or survey), provide instructions for obtaining the sample, conducting the survey and guidance on minimum sample size (response rate):
N/A

2a1.25 Data Source *(Check all the sources for which the measure is specified and tested*). If other, please describe:
Administrative claims

2a1.26 Data Source/Data Collection Instrument (*Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.*): N/A

2a1.27-29 Data Source/data Collection Instrument Reference Web Page URL or Attachment:

2a1.30-32 Data Dictionary/Code Table Web Page URL or Attachment:

2a1.33 Level of Analysis (*Check the levels of analysis for which the measure is specified and tested)*: Health Plan

2a1.34-35 Care Setting *(Check all the settings for which the measure is specified and tested)*: Behavioral Health/Psychiatric : Inpatient, Hospital/Acute Care Facility

2a2. Reliability Testing. (*Reliability testing was conducted with appropriate method, scope, and adequate demonstration of reliability*.)

2a2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
HEDIS Health Plan performance data from 2010

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:
Reliability was estimated by using the beta-binomial model. The beta-binomial model assumes the plan score is a binomial random variable conditional on the plan´s true value that comes from the beta distribution. The beta distribution is usually defined by two parameters, alpha and beta. Alpha and beta can be thought of as intermediate calculations to get to the needed variance estimates. The beta distribution can be symmetric, skewed or even U-shaped.
Reliability used here is the ratio of signal to noise. The signal in this case is the proportion of the variability in measured performance that can be explained by real differences in performance. A reliability of zero implies that all the variability in a measure is attributable to measurement error. A reliability of one implies that all the variability is attributable to real differences in performance. The higher the reliability score, the greater is the confidence with which one can distinguish the performance of one health plan from another. A reliability score greater than or equal to 0.7 is considered very good.

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Commercial Observed 0.9661
Commercial Expected 0.81844
Medicare Observed 0.96579
Medicare Expected 0.88541

2b. VALIDITY. Validity, Testing, including all Threats to Validity: H☐ M☐ L☐ I ☐

2b1.1 Describe how the measure specifications *(measure focus, target population, and exclusions)* are consistent with the evidence cited in support of the measure focus (*criterion 1c)* and identify any differences from the evidence:
The measure focuses on reducing readmissions. The evidence is consistent with the focus, scope and logic of this measure. NCQA's measure looks at all-cause readmissions within 30 days of discharge, whereas other evidence-based studies look at specific diagnoses as a base for readmissions.

2b2. Validity Testing. (*Validity testing was conducted with appropriate method, scope, and adequate demonstration of validity.)*

2b2.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
Commercial: 1,002,193
Medicare: 397,410

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:
NCQA assessed the validity of the model through a review model fit statistics, including the R-squared and c-statistic.

NCQA tested the measure for face validity using a panel of stakeholders with specific expertise in geriatrics, measurement and risk adjustment. This panel included representatives from key stakeholder groups, including CMS, AARP, family physicians, health plans, state representatives and researchers. A separate panel of risk adjustment experts reviewed the measure testing and first year measure collection results. All panelists assessed: whether the results were consistent with expectations, whether the measure represented quality care, the risk adjustment methodology, and whether we were measuring the most important aspect of care in this area.

2b2.3 Testing Results *(Statistical results, assessment of adequacy in the context of norms for the test conducted; if face validity, describe results of systematic assessment)*:
Measure fit statistics indicated high predictive validity of the risk adjustment model, relative to norms in this type of risk adjustment. This measure was deemed valid by the expert panels.

POTENTIAL THREATS TO VALIDITY. (*All potential threats to validity were appropriately tested with adequate results.*)

2b3. Measure Exclusions. (*Exclusions were supported by the clinical evidence in 1c or appropriately tested with results demonstrating the need to specify them.*)

2b3.1 Data/Sample for analysis of exclusions *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
NCQA currently allows health plans for optional exclusion to their results. NCQA does not conduct the annual analysis applied to a sample. In measure development, field testing and any re-analysis for update, we investigate and validate the effect reliability exclusion applied to the eligible denominator.

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)*:
N/A

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*
N/A

2b4. Risk Adjustment Strategy. (*For outcome measures, adjustment for differences in case mix (severity) across measured entities was appropriately tested with adequate results.*)

2b4.1 Data/Sample *(Description of the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
The risk adjustment methodology was applied to all the submissions collected by NCQA for measurement year 2010.

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:
This measure incorporates risk adjustment. The purpose of risk adjustment is to rule out clinical differences between health plans in the types of cases treated as a cause for observed differences between health plans on the measure.

The model includes a vector of interaction terms for a member's age and gender. Readmission rates are known to increase with age, and there are some differences in readmission rates between males and females.

Major surgery is a dummy variable indicating whether the admission is classified as primarily medical or mainly surgical in nature. Surgical cases are less likely to result in readmission within 30 days (Jencks et al., 2009).

Dummy variables for each of the predictive CCs (clinical condition categories using CMS' Clinical Condition categories risk adjustment system) were included and capture the effect of the primary discharge diagnosis on risk of readmission.

Dummy variables for the predictive comorbid conditions, using the HCC captures the presence of concurrent conditions in the 360 days prior to the index admission. Comorbid conditions raise the complexity of cases and increase the risk for readmission. Using the HCC's "trumping logic" ensures that particular conditions are not double-counted. The HCCs also allow for specific interactions (e.g., cardiovascular and diabetes). Using HCCs enhances the measure's alignment with the Yale/CMS process for hospital-based measurement.

2b4.3 Testing Results *(Statistical risk model: Provide quantitative assessment of relative contribution of model risk factors; risk model performance metrics including cross-validation discrimination and calibration statistics, calibration curve and risk decile plot, and assessment of adequacy in the context of norms for risk models. Risk stratification: Provide quantitative assessment of relationship of risk factors to the outcome and differences in outcomes among the strata)*:
Medicare and SNP testing results
LR 2 (Likelihood Ratio), d.f., (p-value) = 18308.8, 125 (<0.0001)
R2 =0.0450
Max Rescaled R2 = 0.0786
c-statistic = 0.666

Commercial testing results
LR 2 (Likelihood Ratio), d.f., (p-value) = 67494.8325, 122, (<.0001)
R2 = 0.0651
Max Rescaled R2 = 0.1339
c-statistic = 0.7300

Because the model used data for two years, we evaluated whether health plans that appeared in both years of data experienced substantial change in their rankings. We ranked plans that appeared in both years and did not have extreme changes in their number of hospitalizations (for Medicare, change of greater than 50%; for commercial, change of greater than 20%) according to their E/O ratios (expected to observed). We then divided the pool of health plan organizations (n=16 MA; n=44 Commercial) into quintiles for each year. We next assessed how often health plans changed quintiles between year 1 and year 2.

Among MA health plans, at least 75% of health plans stayed in the same quintile or changed by only one quintile; this is slightly lower than for commercial (83%). Restricting to health plans with at least 500 hospitalizations, however, improves the rates to about 85% for both MA and commercial health plans.

About 80% of health plans will remain in the same quintile year to year or change to an adjacent quintile in either direction. However, particularly for MA health plans, movement of one quintile was the most common result (about 44% overall, and 54% when restricted to health plans with at least 500 admissions).

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: N/A

2b5. Identification of Meaningful Differences in Performance. (*The performance measure scores were appropriately analyzed and discriminated meaningful differences in quality.*)

2b5.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:
Comparison of means and percentiles; analysis of variance against established benchmarks.

2b5.3 Results *(Provide measure performance results/scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*:
First -year measure collection was conducted for all ages 18 and older in the Medicare and commercial product lines.
Medicare - Measurement Year 2010
Number of Health Plans 424
Mean Index Hospital Stays
MEAN 0.164
STDEV 0.028
STDERR N/A

MIN 0.06
MAX 0.35
P10; 0.136
P25; 0.149
P50; 0.162
P75; 0.175
P90; 0.198

Commercial - Measurement Year 2010
Number of Health Plans 314
Mean Index Hospital Stays
MEAN 0.083
STDEV 0.011
STDERR N/A
MIN 0.050
MAX 0.114
P10; 0.066
P25; 0.076
P50; 0.085
P75; 0.090
P90; 0.096

2b6. Comparability of Multiple Data Sources/Methods. (*If specified for more than one data source, the various approaches result in comparable scores.*)

2b6.1 Data/Sample *(Describe the data or sample including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included)*:
N/A

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)*:
N/A

2b6.3 Testing Results *(Provide statistical results, e.g., correlation statistics, comparison of rankings; assessment of adequacy in the context of norms for the test conducted)*:
N/A

2c. Disparities in Care: H☐ M☐ L☐ I ☐ NA☐ (*If applicable, the measure specifications allow identification of disparities.*)

2c.1 If measure is stratified for disparities, provide stratified results *(Scores by stratified categories/cohorts)*: The measure is not stratified to detect disparities.

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:
N/A

2.1-2.3 Supplemental Testing Methodology Information:

Steering Committee: Overall, was the criterion, *Scientific Acceptability of Measure Properties*, met?
(*Reliability and Validity must be rated moderate or high*) Yes☐ No☐
Provide rationale based on specific subcriteria:

If the Committee votes No, STOP

3. USABILITY

Extent to which intended audiences (e.g., consumers, purchasers, providers, policy makers) can understand the results of the measure and are likely to find them useful for decision making. (evaluation criteria)

C.1 Intended Purpose/ Use *(Check all the purposes and/or uses for which the measure is intended)*: Public Reporting, Quality Improvement with Benchmarking (external benchmarking to multiple organizations)

3.1 Current Use *(Check all that apply; for any that are checked, provide the specific program information in the following questions)*: Public Reporting, Payment Program, Quality Improvement with Benchmarking (external benchmarking to multiple organizations), Quality Improvement (Internal to the specific organization)

3a. Usefulness for Public Reporting: H☐ M☐ L☐ I ☐
(*The measure is meaningful, understandable and useful for public reporting.*)

3a.1. Use in Public Reporting - disclosure of performance results to the public at large *(If used in a public reporting program, provide name of program(s), locations, Web page URL(s)).* If not publicly reported in a national or community program, state the reason AND plans to achieve public reporting, potential reporting programs or commitments, and timeline, e.g., within 3 years of endorsement: [*For Maintenance – If not publicly reported, describe progress made toward achieving disclosure of performance results to the public at large and expected date for public reporting; provide rationale why continued endorsement should be considered.*]
The measure is used by CMS in public reporting and pay-for-performance for Medicare Advantage health plans through its Star Rating system. This measure will be used in public reporting for Medicare Advantage and commercial health plans in HEDIS 2012 and State of Health Care 2012. The measure will be a candidate for inclusion in NCQA's Health Plan Ranking project with Consumers Union in 2012.

3a.2.Provide a rationale for why the measure performance results are meaningful, understandable, and useful for public reporting. If usefulness was demonstrated (e.g., focus group, cognitive testing), describe the data, method, and results: HEDIS measures adhere to the desirable attributes of scientific acceptability, feasibility and usability. The measures provide performance rates that are audited for consistency and accuracy.The observed and expected rates are standard metrics for readmission rates (and other risk-adjusted measures), and any additional reporting rates (e.g., observed-to-expected ratio, risk standardized readmission rates) are derived from these metrics. CMS is using the risk standardized readmission rate for this health plan measure for Medicare 65 and older populations for public reporting in the Star Rating program.

3.2 Use for other Accountability Functions (payment, certification, accreditation). If used in a public accountability program, provide name of program(s), locations, Web page URL(s): It is not used in NCQA's Health Plan Accreditation program.

3b. Usefulness for Quality Improvement: H☐ M☐ L☐ I ☐
(*The measure is meaningful, understandable and useful for quality improvement.*)

3b.1. Use in QI. If used in quality improvement program, provide name of program(s), locations, Web page URL(s):
[*For Maintenance – If not used for QI, indicate the reasons and describe progress toward using performance results for improvement*].
This measure is a measure in the Healthcare Effectiveness Data and Information Set (HEDIS), but is not used in NCQA's Health Plan Accreditation program. A measure typically has to reported for at least 3 years before inclusion in accreditation.

3b.2. Provide rationale for why the measure performance results are meaningful, understandable, and useful for quality improvement. If usefulness was demonstrated *(e.g., QI initiative),* describe the data, method and results:
Upon review of public comment results, the Committee on Performance Measurement approved the NCQA staff recommendation to add the measure to HEDIS. After reviewing first-year analysis results, the CPM approved the staff recommendation to publicly report the measure. The measure was deemed usable and feasible.

Overall, to what extent was the criterion, *Usability*, met? H☐ M☐ L☐ I ☐
Provide rationale based on specific subcriteria:

4. FEASIBILITY

Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)

4a. Data Generated as a Byproduct of Care Processes: H☐ M☐ L☐ I ☐

4a.1-2 How are the data elements needed to compute measure scores generated? *(Check all that apply).*
Data used in the measure are:
Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims)

4b. Electronic Sources: H☐ M☐ L☐ I ☐

4b.1 Are the data elements needed for the measure as specified available electronically *(Elements that are needed to compute measure scores are in defined, computer-readable fields)*: ALL data elements are in a combination of electronic sources

4b.2 If ALL data elements are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources:

4c. Susceptibility to Inaccuracies, Errors, or Unintended Consequences: H☐ M☐ L☐ I ☐

4c.1 Identify susceptibility to inaccuracies, errors, or unintended consequences of the measurement identified during testing and/or operational use and strategies to prevent, minimize, or detect. If audited, provide results:
All measures that are used in NCQA programs are audited.

4d. Data Collection Strategy/Implementation: H☐ M☐ L☐ I ☐

A.2 Please check if either of the following apply (*regarding proprietary measures*): Proprietary measure
4d.1 Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues *(e.g., fees for use of proprietary measures)*:
NCQA´s multi-stakeholder advisory panels examined an analysis of the measure after its first year of reporting. The measure was deemed appropriate for public reporting. NCQA has processes to ensure coding and specifications are clear and updated when needed.
We have made the following modifications based on the first year of reporting:
- Added a step to collect variance (to support public reporting and related confidence intervals)
- Use the formula below and the adjusted probability of readmission calculated in Step 7 to calculate the variance for each IHS.

Variance = Adjusted probability of readmission x (1—Adjusted probability of readmission)
Example: If the adjusted probability of readmission is 0.1518450741, then the variance is 0.1518450741 x 0.8481549259 = 0.1287881476.
- For Medicare, we are re-estimating the risk adjustment model for age <65 and age 65 and older. Each age group will have its own risk adjustment model. Only the age 65 and older are being used in CMS this year and will be publicly reported by NCQA in 2012. These updated risk models/weights will be available Nov 15, 2011 and will be sent to NQF upon receipt from our data vendor.
- For commercial, we re-estimated the risk adjustment weights for the age <65 population. Commercial health plans will report the measure only for ages 18-65; we dropped the age 65 and older because of small numbers and representativeness problems in our reference data set. The risk model submitted contains the new risk adjustment weights for 2012.

Overall, to what extent was the criterion, *Feasibility*, met? H☐ M☐ L☐ I ☐
Provide rationale based on specific subcriteria:

OVERALL SUITABILITY FOR ENDORSEMENT

Does the measure meet all the NQF criteria for endorsement? Yes☐ No☐
Rationale:

If the Committee votes No, STOP.
If the Committee votes Yes, the final recommendation is contingent on comparison to related and competing measures.

5. COMPARISON TO RELATED AND COMPETING MEASURES

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure before a final recommendation is made.

5.1 If there are related measures *(either same measure focus or target population)* or competing measures *(both the same measure focus and same target population*), list the NQF # and title of all related and/or competing measures:
0329 : Risk-Adjusted 30-Day All-Cause Readmission Rate
0330 : Hospital 30-day, all-cause, risk-standardized readmission rate following heart failure hospitalization for patients 18 and older
0505 : Hospital 30-day all-cause risk-standardized readmission rate (RSRR) following acute myocardial infarction (AMI) hospitalization.
0506 : Thirty-day all-cause risk standardized readmission rate following pneumonia hospitalization.
0695 : Hospital 30-Day Risk-Standardized Readmission Rates following Percutaneous Coronary Intervention (PCI)
0698 : 30-Day Post-Hospital AMI Discharge Care Transition Composite Measure
0699 : 30-Day Post-Hospital HF Discharge Care Transition Composite Measure

5a. Harmonization

5a.1 If this measure has EITHER the same measure focus OR the same target population as NQF-endorsed measure(s): Are the measure specifications completely harmonized? No

5a.2 If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden:
NCQA harmonized nearly all components with the PacifiCare and Yale-CMS measures. The differences are that the measure focuses on all-cause discharges and incorporates risk weights for the index condition using the HCC system.

5b. Competing Measure(s)

5b.1 If this measure has both the same measure focus and the same target population as NQF-endorsed measure(s): Describe why this measure is superior to competing measures *(e.g., a more valid or efficient way to measure quality);* OR provide a rationale for the additive value of endorsing an additional measure. *(Provide analyses when possible)*:
N/A

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner): National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005

Co.2 Point of Contact: Bob, Rehm, Assistant Vice President, Performance Measurement, Rehm@ncqa.org, 202-955-1728-

Co.3 Measure Developer if different from Measure Steward: National Committee for Quality Assurance, 1100 13th Street NW, Suite 1000, Washington, District Of Columbia, 20005

Co.4 Point of Contact: Bob, Rehm, Assistant Vice President, Performance Measurement, Rehm@ncqa.org, 202-955-1728-

Co.5 Submitter: Dawn, Alayon, MPH, CPH, Senior Health Care Analyst, alayon@ncqa.org, 202-955-3533-, National Committee for Quality Assurance

Co.6 Additional organizations that sponsored/participated in measure development:

Co.7 Public Contact: Bob, Rehm, Assistant Vice President, Performance Measurement, Rehm@ncqa.org, 202-955-1728-, National Committee for Quality Assurance

ADDITIONAL INFORMATION

Workgroup/Expert Panel involved in measure development

Ad.1 Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.
GMAP Members
Wade Aubry, BCBS Association
Arlene Bierman, University of Toronto and St. Michael's Hospital
Joyce Dubow, AARP
Peter Hollmann, BCBS of Rhode Island
Jerry Johnson, University of Pennsylvania
David Martin, Ovations
Adrienne Mims, Alliant Health Solutions | Georgia Medical Care
Steven Phillips, Sierra Health Services, Inc.
Scott Sarran, BCBS of Illinois
Eric G Tangalos, Mayo Clinic
Joan Weiss, Health Resources and Services Administration
Neil Wenger, UCLA Division of General Internal Medicine and RAND

Risk Adjustment Subgroup
Arlene Ash, University of Massachusetts Medical School
Peter Bach, Memorial Sloan-Kettering Cancer Center
Mary Kay Dugan, Battelle Centers for Public Health Research and Evaluation
Ann Elixhauser, AHRQ
Jeffrey Geppert, Battelle Centers for Public Health Research and Evaluation
Richard Kronick, University of California, San Diego
Patrick Romano, University of California, Davis
Jonathan Weiner, Johns Hopkins School of Public Health

The NCQA Geriatric Measurement Advisory Panel advised NCQA during measure development. They evaluated the way staff specified measures, assessed the content validity of measures, and reviewed field test results. As you can see from the list, the MAP consisted of a balanced group of experts, including representatives from CMS, AARP, universities and health plans. Note that, in addition to the MAP, we also vetted these measures with a host of other stakeholders, as is our process. Thus, our measures are the result of consensus from a broad and diverse group of stakeholders, in addition to the MAP.

Ad.2 If adapted, provide title of original measure, NQF # if endorsed, and measure steward. Briefly describe the reasons for adapting the original measure and any work with the original measure steward: N/A

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.3 Year the measure was first released: 2010
Ad.4 Month and Year of most recent revision: 10, 2011
Ad.5 What is your frequency for review/update of this measure? Approximately every 3 years, sooner if the risk adjustment methodology requires dataset updates
Ad.6 When is the next scheduled review/update for this measure? 08, 2012

Ad.7 Copyright statement:

Ad.8 Disclaimers:

Ad.9 Additional Information/Comments: Added a step to collect variance:
Use the formula below and the adjusted probability of readmission calculated in Step 7 to calculate the variance for each IHS.
Variance = Adjusted probability of readmission x (1—Adjusted probability of readmission)
Example: If the adjusted probability of readmission is 0.1518450741, then the variance is 0.1518450741 x 0.8481549259 = 0.1287881476.

Changed measure to public reporting status for Commercial 18-64 years of age, and for Medicare 65 years of age and older.

Date of Submission (*MM/DD/YY*): 10/31/2011

These are the risk adjustment weights to be used for the second year of data collection (HEDIS 2012).NOTE: CCs or HCCs not listed receive a weight of ZERO (i.e., 0.0000).
The weights, diagnosis mappings to CCs, and implementation of the HCC ranking are available at the following link: http://www.ncqa.org/tabid/1415/Default.aspx.

		Commercial Year 2	Medicare Year 2	
		18-64	18-64	65+
	N index hospital stays	1,002,193	200,856	1,445,129
	R-squared	0.0651	0.0415	0.0321
	Max-rescaled R-Square	0.1339	0.0723	0.0583
	c-statistic	0.7300	0.6610	0.6490
	Intercept	-2.7238	-2.2423	-2.442
	Age-Gender			
	m18_44	0.0254	0.0000	--
	f18_44	0.0505	0.0000	--
	m45_54	0.0000	-0.1502	--
	f45_54	0.0000	-0.1910	--
	m55_64	-0.0299	-0.2095	--
	f55_64	-0.0714	-0.2429	--
	m65_74	0.0000	--	0.0000
	f65_74	0.0000	--	-0.0441
	m75_84	0.0000	--	0.0501
	f75_84	0.0000	--	0.0311
	m85+	0.0000	--	0.1120
	f85+	0.0000	--	0.0529
	Major Surgery	-0.3836	-0.1546	-0.1789
Discharge Condition Description	**Discharge CC**			
HIV/AIDS	CC-PCR-1	0.4421	0.0000	0.4819
Septicemia/Shock	CC-PCR-2	0.0000	0.0000	0.0000
Central Nervous System Infection	CC-PCR-3	0.1438	0.0000	0.0000
Tuberculosis	CC-PCR-4	0.0000	0.4153	0.2252
Opportunistic Infections	CC-PCR-5	0.0000	0.4153	0.2252
Other Infectious Diseases	CC-PCR-6	-0.3501	0.0000	-0.0805
Metastatic Cancer and Acute Leukemia	CC-PCR-7	0.6801	0.4022	0.3269
Lung, Upper Digestive Tract, and Other Severe Cancers	CC-PCR-8	0.5130	0.4579	0.3205
Lymphatic, Head and Neck, Brain, and Other Major Cancers	CC-PCR-9	0.6825	0.6999	0.5747
Breast, Prostate, Colorectal and Other Cancers and Tumors	CC-PCR-10	0.1450	0.0000	0.0836
Other Respiratory and Heart Neoplasms	CC-PCR-11	0.1450	0.0000	0.0836
Other Digestive and Urinary Neoplasms	CC-PCR-12	0.1450	0.0000	0.0836
Other Neoplasms	CC-PCR-13	-0.4191	-0.5889	-0.3135
Benign Neoplasms of Skin, Breast, Eye	CC-PCR-14	-0.4191	-0.5889	-0.3135
Diabetes with Renal or Peripheral Circulatory Manifestation	CC-PCR-15	0.5485	0.3404	0.4180
Diabetes with Neurologic or Other Specified Manifestation	CC-PCR-16	0.2310	0.0000	-0.0904
Diabetes with Acute Complications	CC-PCR-17	-0.1941	0.0000	0.0000
Diabetes with Ophthalmologic or Unspecified Manifestation	CC-PCR-18	-0.3317	-0.2652	0.0000
Diabetes without Complication	CC-PCR-19	-0.3317	-0.2652	0.0000
Protein-Calorie Malnutrition	CC-PCR-21	0.5516	0.0000	0.2454
Other Significant Endocrine and Metabolic Disorders	CC-PCR-22	0.5003	0.0000	0.2474
Disorders of Fluid/Electrolyte/Acid-Base Balance	CC-PCR-23	0.2480	0.0000	0.0702
Other Endocrine/Metabolic/Nutritional Disorders	CC-PCR-24	0.0000	0.0000	0.0000
End-Stage Liver Disease	CC-PCR-25	0.6934	0.3433	0.3888
Cirrhosis of Liver	CC-PCR-26	0.6934	0.3433	0.3888
Chronic Hepatitis	CC-PCR-27	0.6934	0.3433	0.3888
Acute Liver Failure/Disease	CC-PCR-28	0.6934	0.3433	0.3888
Other Hepatitis and Liver Disease	CC-PCR-29	0.5474	0.3756	0.2453
Gallbladder and Biliary Tract Disorders	CC-PCR-30	0.1442	0.0000	0.0000
Intestinal Obstruction/Perforation	CC-PCR-31	0.1280	0.0000	-0.0830
Pancreatic Disease	CC-PCR-32	0.1406	0.0000	0.0000
Inflammatory Bowel Disease	CC-PCR-33	0.4389	0.2520	0.3018
Peptic Ulcer, Hemorrhage, Other Specified Gastrointestinal Disorders	CC-PCR-34	0.1465	0.0000	0.0000
Appendicitis	CC-PCR-35	-0.1672	0.0000	0.0000
Other Gastrointestinal Disorders	CC-PCR-36	0.1932	-0.1018	-0.0411
Bone/Joint/Muscle Infections/Necrosis	CC-PCR-37	0.0000	0.0000	0.0000
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	CC-PCR-38	0.3499	0.0000	0.0000
Disorders of the Vertebrae and Spinal Discs	CC-PCR-39	-0.2743	-0.2159	-0.3172
Osteoarthritis of Hip or Knee	CC-PCR-40	-0.2743	-0.2159	-0.3172
Osteoporosis and Other Bone/Cartilage Disorders	CC-PCR-41	-0.2743	-0.2159	-0.3172
Congenital/Developmental Skeletal and Connective Tissue Disorders	CC-PCR-42	-0.2743	-0.2159	-0.3172
Other Musculoskeletal and Connective Tissue Disorders	CC-PCR-43	-0.2743	-0.2159	-0.3172
Severe Hematological Disorders	CC-PCR-44	0.4224	0.2784	0.1976
Disorders of Immunity	CC-PCR-45	0.4224	0.2784	0.1976
Coagulation Defects and Other Specified Hematological Disorders	CC-PCR-46	0.4224	0.2784	0.1976
Iron Deficiency and Other/Unspecified Anemias and Blood Disease	CC-PCR-47	0.4224	0.2784	0.1976

These are the risk adjustment weights to be used for the second year of data collection (HEDIS 2012).NOTE: CCs or HCCs not listed receive a weight of ZERO (i.e., 0.0000).
The weights, diagnosis mappings to CCs, and implementation of the HCC ranking are available at the following link: http://www.ncqa.org/tabid/1415/Default.aspx.

		Commercial Year 2	Medicare Year 2	
		18-64	18-64	65+
Delirium and Encephalopathy	CC-PCR-48	0.3007	0.0000	0.2142
Dementia/Cerebral Degeneration	CC-PCR-49	0.8287	0.0000	0.1675
Nonpsychotic Organic Brain Syndromes/Conditions	CC-PCR-50	1.0748	0.4750	0.5128
Drug/Alcohol Psychosis	CC-PCR-51	0.9534	0.0000	0.0000
Drug/Alcohol Dependence	CC-PCR-52	1.8835	0.1491	0.0000
Drug/Alcohol Abuse, Without Dependence	CC-PCR-53	1.8835	0.1491	0.0000
Schizophrenia	CC-PCR-54	0.7539	0.2046	0.2051
Major Depressive, Bipolar, and Paranoid Disorders	CC-PCR-55	0.7539	0.2046	0.2051
Reactive and Unspecified Psychosis	CC-PCR-56	0.7539	0.2046	0.2051
Personality Disorders	CC-PCR-57	0.2348	0.0000	0.1984
Depression	CC-PCR-58	0.6858	0.0000	0.0000
Anxiety Disorders	CC-PCR-59	0.6858	0.0000	0.0000
Other Psychiatric Disorders	CC-PCR-60	0.2348	0.0000	0.1984
Profound Mental Retardation/Developmental Disability	CC-PCR-61	0.0000	0.0000	0.0000
Severe Mental Retardation/Developmental Disability	CC-PCR-62	0.0000	0.0000	0.0000
Moderate Mental Retardation/Developmental Disability	CC-PCR-63	0.0000	0.0000	0.0000
Mild Mental Retardation, Autism, Down's Syndrome	CC-PCR-64	0.0000	0.0000	0.0000
Other Developmental Disability	CC-PCR-65	0.0000	0.0000	0.0000
Attention Deficit Disorder	CC-PCR-66	0.0000	0.0000	0.0000
Quadriplegia, Other Extensive Paralysis	CC-PCR-67	0.3106	0.0000	0.2436
Paraplegia	CC-PCR-68	0.3106	0.0000	0.2436
Spinal Cord Disorders/Injuries	CC-PCR-69	0.3106	0.0000	0.2436
Muscular Dystrophy	CC-PCR-70	0.0000	0.0000	0.0000
Polyneuropathy	CC-PCR-71	0.4154	0.0000	0.0000
Multiple Sclerosis	CC-PCR-72	0.0000	-0.2191	-0.1022
Parkinson's and Huntington's Diseases	CC-PCR-73	0.0000	-0.2191	-0.1022
Seizure Disorders and Convulsions	CC-PCR-74	0.0000	-0.2191	-0.1022
Coma, Brain Compression/Anoxic Damage	CC-PCR-75	0.0000	-0.2191	-0.1022
Mononeuropathy, Other Neurological Conditions/Injuries	CC-PCR-76	0.0000	-0.2191	-0.1022
Respirator Dependence/Tracheostomy Status	CC-PCR-77	0.0000	0.0000	0.0000
Respiratory Arrest	CC-PCR-78	0.0000	0.0000	0.0000
Cardio-Respiratory Failure and Shock	CC-PCR-79	0.0000	0.0984	0.1470
Congestive Heart Failure	CC-PCR-80	0.2346	0.1683	0.1466
Acute Myocardial Infarction	CC-PCR-81	0.3067	0.0000	0.1875
Unstable Angina and Other Acute Ischemic Heart Disease	CC-PCR-82	0.2596	0.0000	0.0872
Angina Pectoris/Old Myocardial Infarction	CC-PCR-83	0.2596	0.0000	0.0872
Coronary Atherosclerosis/Other Chronic Ischemic Heart Disease	CC-PCR-84	0.2596	0.0000	0.0872
Heart Infection/Inflammation, Except Rheumatic	CC-PCR-85	0.6567	0.3280	0.4681
Valvular and Rheumatic Heart Disease	CC-PCR-86	0.6567	0.3280	0.4681
Major Congenital Cardiac/Circulatory Defect	CC-PCR-87	0.0000	0.0000	0.0000
Other Congenital Heart/Circulatory Disease	CC-PCR-88	0.0000	0.0000	0.0000
Hypertensive Heart and Renal Disease or Encephalopathy	CC-PCR-89	0.0000	0.0000	0.0000
Hypertensive Heart Disease	CC-PCR-90	-0.1097	0.0000	-0.0705
Hypertension	CC-PCR-91	-0.1097	0.0000	-0.0705
Specified Heart Arrhythmias	CC-PCR-92	-0.1097	0.0000	-0.0705
Other Heart Rhythm and Conduction Disorders	CC-PCR-93	-0.1097	0.0000	-0.0705
Other and Unspecified Heart Disease	CC-PCR-94	-0.1097	0.0000	-0.0705
Cerebral Hemorrhage	CC-PCR-95	0.3591	0.0000	0.2334
Ischemic or Unspecified Stroke	CC-PCR-96	0.0000	-0.2249	-0.1588
Precerebral Arterial Occlusion and Transient Cerebral Ischemia	CC-PCR-97	0.0000	-0.2249	-0.1588
Cerebral Atherosclerosis and Aneurysm	CC-PCR-98	0.4373	0.0000	0.0000
Cerebrovascular Disease, Unspecified	CC-PCR-99	0.0000	0.0000	0.0000
Hemiplegia/Hemiparesis	CC-PCR-100	0.0000	0.0000	0.0000
Cerebral Palsy and Other Paralytic Syndromes	CC-PCR-101	0.0000	0.0000	0.0000
Speech, Language, Cognitive, Perceptual Deficits	CC-PCR-102	0.0000	0.0000	0.0000
Cerebrovascular Disease Late Effects, Unspecified	CC-PCR-103	0.0000	0.0000	0.0000
Vascular Disease with Complications	CC-PCR-104	0.0000	0.0901	0.0000
Vascular Disease	CC-PCR-105	0.0000	0.0901	0.0000
Other Circulatory Disease	CC-PCR-106	0.0000	0.0901	0.0000
Cystic Fibrosis	CC-PCR-107	0.0000	0.0000	0.0000
Chronic Obstructive Pulmonary Disease	CC-PCR-108	0.0000	0.1505	0.0782
Fibrosis of Lung and Other Chronic Lung Disorders	CC-PCR-109	0.0000	0.1505	0.0782
Asthma	CC-PCR-110	-0.1557	-0.1637	-0.1600
Aspiration and Specified Bacterial Pneumonias	CC-PCR-111	-0.1559	-0.1355	-0.0787
Pneumococcal Pneumonia, Emphysema, Lung Abscess	CC-PCR-112	-0.1559	-0.1355	-0.0787
Viral and Unspecified Pneumonia, Pleurisy	CC-PCR-113	-0.1559	-0.1355	-0.0787
Pleural Effusion/Pneumothorax	CC-PCR-114	0.7280	0.3990	0.4941
Other Lung Disorders	CC-PCR-115	-0.1560	-0.4118	-0.2151

These are the risk adjustment weights to be used for the second year of data collection (HEDIS 2012).NOTE: CCs or HCCs not listed receive a weight of ZERO (i.e., 0.0000).
The weights, diagnosis mappings to CCs, and implementation of the HCC ranking are available at the following link: http://www.ncqa.org/tabid/1415/Default.aspx.

		Commercial Year 2	Medicare Year 2	
		18-64	18-64	65+
Legally Blind	CC-PCR-116	0.0000	0.0000	0.0000
Major Eye Infections/Inflammations	CC-PCR-117	0.0000	0.0000	0.0000
Retinal Detachment	CC-PCR-118	0.0000	0.0000	0.0000
Proliferative Diabetic Retinopathy and Vitreous Hemorrhage	CC-PCR-119	0.0000	0.0000	0.0000
Diabetic and Other Vascular Retinopathies	CC-PCR-120	0.0000	0.0000	0.0000
Retinal Disorders, Except Detachment and Vascular Retinopathies	CC-PCR-121	0.0000	0.0000	0.0000
Glaucoma	CC-PCR-122	0.0000	0.0000	0.0000
Cataract	CC-PCR-123	0.0000	0.0000	0.0000
Other Eye Disorders	CC-PCR-124	0.0000	0.0000	0.0000
Significant Ear, Nose, and Throat Disorders	CC-PCR-125	0.0000	0.0000	0.0000
Hearing Loss	CC-PCR-126	-0.4744	-0.2516	-0.5222
Other Ear, Nose, Throat, and Mouth Disorders	CC-PCR-127	-0.4744	-0.2516	-0.5222
Kidney Transplant Status	CC-PCR-128	0.4877	0.0000	0.1196
Dialysis Status	CC-PCR-130	0.4877	0.0000	0.1196
Renal Failure	CC-PCR-131	0.4877	0.0000	0.1196
Nephritis	CC-PCR-132	0.6062	0.0000	0.3959
Urinary Obstruction and Retention	CC-PCR-133	0.1013	0.0000	0.0000
Incontinence	CC-PCR-134	0.0000	0.0000	0.0000
Urinary Tract Infection	CC-PCR-135	0.1013	0.0000	0.0000
Other Urinary Tract Disorders	CC-PCR-136	0.1013	0.0000	0.0000
Female Infertility	CC-PCR-137	0.0000	0.0000	0.0000
Pelvic Inflammatory Disease and Other Specified Female Genital Disorders	CC-PCR-138	-0.3416	-0.5836	-0.4175
Other Female Genital Disorders	CC-PCR-139	0.0000	0.0000	0.0000
Male Genital Disorders	CC-PCR-140	-0.3416	-0.5836	-0.4175
Ectopic Pregnancy	CC-PCR-141	0.0000	0.0000	0.0000
Miscarriage/Abortion	CC-PCR-142	0.0000	0.0000	0.0000
Completed Pregnancy With Major Complications	CC-PCR-143	0.0000	0.0000	0.0000
Completed Pregnancy With Complications	CC-PCR-144	0.0000	0.0000	0.0000
Completed Pregnancy Without Complications (Normal Delivery)	CC-PCR-145	0.0000	0.0000	0.0000
Uncompleted Pregnancy With Complications	CC-PCR-146	0.0000	0.0000	0.0000
Uncompleted Pregnancy With No or Minor Complications	CC-PCR-147	0.0000	0.0000	0.0000
Decubitus Ulcer of Skin	CC-PCR-148	0.2432	0.0000	0.1901
Chronic Ulcer of Skin, Except Decubitus	CC-PCR-149	0.2432	0.0000	0.1901
Extensive Third-Degree Burns	CC-PCR-150	0.0000	0.0000	0.0000
Other Third-Degree and Extensive Burns	CC-PCR-151	0.0000	0.0000	0.0000
Cellulitis, Local Skin Infection	CC-PCR-152	-0.3100	-0.1386	-0.1099
Other Dermatological Disorders	CC-PCR-153	-0.3100	-0.1386	-0.1099
Severe Head Injury	CC-PCR-154	0.0000	0.0000	0.0000
Major Head Injury	CC-PCR-155	0.0000	0.0000	0.0000
Concussion or Unspecified Head Injury	CC-PCR-156	0.0000	0.0000	0.0000
Vertebral Fractures	CC-PCR-157	0.0000	0.0000	0.1002
Hip Fracture/Dislocation	CC-PCR-158	0.0000	0.0000	0.0540
Major Fracture, Except of Skull, Vertebrae, or Hip	CC-PCR-159	0.4608	0.0000	0.1288
Internal Injuries	CC-PCR-160	0.0000	0.0000	0.0000
Traumatic Amputation	CC-PCR-161	0.0000	0.0000	-0.1499
Other Injuries	CC-PCR-162	0.0000	0.0000	-0.1499
Poisonings and Allegic Reactions	CC-PCR-163	-0.1586	-0.1335	-0.2506
Major Complications of Medical Care and Trauma	CC-PCR-164	0.2343	0.0000	0.0000
Other Complications of Medical Care	CC-PCR-165	0.2343	0.0000	0.0000
Major Symptoms, Abnormalities	CC-PCR-166	-0.2412	-0.2029	-0.2367
Minor Symptoms, Signs, Findings	CC-PCR-167	0.1923	0.0000	-0.0812
Extremely Low Birthweight Neonates	CC-PCR-168	0.0000	0.0000	0.0000
Very Low Birthweight Neonates	CC-PCR-169	0.0000	0.0000	0.0000
Serious Perinatal Problem Affecting Newborn	CC-PCR-170	0.0000	0.0000	0.0000
Other Perinatal Problems Affecting Newborn	CC-PCR-171	0.0000	0.0000	0.0000
Normal, Single Birth	CC-PCR-172	0.0000	0.0000	0.0000
Major Organ Transplant Status	CC-PCR-174	0.7677	0.3754	0.3568
Other Organ Transplant/Replacement	CC-PCR-175	0.7677	0.3754	0.3568
Artificial Openings for Feeding or Elimination	CC-PCR-176	0.0000	0.0000	-0.1492
Amputation Status, Lower Limb/Amputation	CC-PCR-177	0.0000	0.0000	0.0000
Amputation Status, Upper Limb	CC-PCR-178	0.0000	0.0000	0.0000
Post-Surgical States/Aftercare/Elective	CC-PCR-179	0.0000	0.0000	0.0000
Radiation Therapy	CC-PCR-180	2.1079	1.3839	1.4866
Chemotherapy	CC-PCR-181	2.1079	1.3839	1.4866
Rehabilitation	CC-PCR-182	0.0858	0.0000	-0.1735
Screening/Observation/Special Exams	CC-PCR-183	0.0000	0.0000	0.0000
History of Disease	CC-PCR-184	0.0000	0.0000	0.0000

These are the risk adjustment weights to be used for the second year of data collection (HEDIS 2012).NOTE: CCs or HCCs not listed receive a weight of ZERO (i.e., 0.0000).
The weights, diagnosis mappings to CCs, and implementation of the HCC ranking are available at the following link: http://www.ncqa.org/tabid/1415/Default.aspx.

		Commercial Year 2	Medicare Year 2	
		18-64	18-64	65+
Comorbid condition description	**Comorbid HCC**			
HIV/AIDS	HCC_RRU001	0.1546	0.1723	0.2431
Septicemia/Shock	HCC_RRU002	0.1088	0.1103	0.0864
Opportunistic Infections	HCC_RRU005	0.2517	0.1564	0.1650
Metastatic Cancer and Acute Leukemia	HCC_RRU007	0.9385	0.5564	0.4955
Lung, Upper Digestive Tract, and Other Severe Cancers	HCC_RRU008	0.6268	0.2601	0.3403
Lymphatic, Head and Neck, Brain, and Other Major Cancers	HCC_RRU009	0.6450	0.2318	0.2769
Breast, Prostate, Colorectal and Other Cancers and Tumors	HCC_RRU010	0.1886	0.1359	0.0635
Diabetes with Renal or Peripheral Circulatory Manifestation	HCC_RRU015	0.2045	0.2006	0.1653
Diabetes with Neurologic or Other Specified Manifestation	HCC_RRU016	0.2170	0.2016	0.1931
Diabetes with Ophthalmologic or Unspecified Manifestation	HCC_RRU017	0.0000	0.1688	0.1444
Diabetes without Complication	HCC_RRU018	0.1519	0.1216	0.1156
Protein-Calorie Malnutrition	HCC_RRU019	0.0827	0.0962	0.1092
End-Stage Liver Disease	HCC_RRU021	0.2852	0.1991	0.1774
Cirrhosis of Liver	HCC_RRU025	0.3774	0.4089	0.3031
Chronic Hepatitis	HCC_RRU026	0.1274	0.2122	0.1533
Intestinal Obstruction/Perforation	HCC_RRU027	0.0000	0.1520	0.1299
Pancreatic Disease	HCC_RRU031	0.3062	0.2285	0.1691
Inflammatory Bowel Disease	HCC_RRU032	0.2728	0.2120	0.1525
Bone/Joint/Muscle Infections/Necrosis	HCC_RRU033	0.2582	0.2385	0.1539
Rheumatoid Arthritis and Inflammatory Connective Tissue Disease	HCC_RRU037	0.1601	0.0931	0.1108
Severe Hematological Disorders	HCC_RRU038	0.1697	0.0752	0.0953
Disorders of Immunity	HCC_RRU044	0.2372	0.2545	0.2268
Drug/Alcohol Psychosis	HCC_RRU045	0.1111	0.1769	0.1564
Drug/Alcohol Dependence	HCC_RRU051	0.1856	0.4010	0.1337
Schizophrenia	HCC_RRU052	0.2545	0.2344	0.1658
Major Depressive, Bipolar, and Paranoid Disorders	HCC_RRU054	1.0910	0.3759	0.2520
Quadriplegia, Other Extensive Paralysis	HCC_RRU055	0.1492	0.1589	0.1258
Paraplegia	HCC_RRU067	0.1721	0.0000	0.1693
Spinal Cord Disorders/Injuries	HCC_RRU068	0.2031	0.0000	0.1153
Muscular Dystrophy	HCC_RRU069	0.2553	0.1095	0.1670
Polyneuropathy	HCC_RRU070	0.0000	0.0000	0.0000
Multiple Sclerosis	HCC_RRU071	0.1164	0.0612	0.0432
Parkinsons and Huntingtons Diseases	HCC_RRU072	0.0000	0.1189	0.0000
Seizure Disorders and Convulsions	HCC_RRU073	0.2556	0.1315	0.0996
Coma, Brain Compression/Anoxic Damage	HCC_RRU074	0.0901	0.0928	0.0904
Respirator Dependence/Tracheostomy Status	HCC_RRU075	0.2015	0.0000	0.0562
Respiratory Arrest	HCC_RRU077	0.0000	0.1216	0.2451
Cardio-Respiratory Failure and Shock	HCC_RRU078	0.0000	0.1647	0.2565
Congestive Heart Failure	HCC_RRU079	0.1457	0.1535	0.1355
Acute Myocardial Infarction	HCC_RRU080	0.2501	0.2331	0.2687
Unstable Angina and Other Acute Ischemic Heart Disease	HCC_RRU081	0.1238	0.2788	0.2153
Angina Pectoris/Old Myocardial Infarction	HCC_RRU082	0.0767	0.1899	0.1217
Specified Heart Arrhythmias	HCC_RRU083	0.0853	0.0540	0.0445
Cerebral Hemorrhage	HCC_RRU092	0.1440	0.1715	0.1494
Ischemic or Unspecified Stroke	HCC_RRU095	0.0741	0.2074	0.1518
Hemiplegia/Hemiparesis	HCC_RRU096	0.0000	0.1543	0.1298
Cerebral Palsy and Other Paralytic Syndromes	HCC_RRU100	0.1152	0.0000	0.0930
Vascular Disease with Complications	HCC_RRU101	0.1609	0.0000	0.0886
Vascular Disease	HCC_RRU104	0.2884	0.2709	0.2193
Cystic Fibrosis	HCC_RRU105	0.1921	0.1033	0.1010
Chronic Obstructive Pulmonary Disease	HCC_RRU107	0.3503	0.0000	0.0000
Aspiration and Specified Bacterial Pneumonias	HCC_RRU108	0.1260	0.1369	0.1736
Pneumococcal Pneumonia, Emphysema, Lung Abscess	HCC_RRU111	0.0000	0.1109	0.1298
Proliferative Diabetic Retinopathy and Vitreous Hemorrhage	HCC_RRU112	0.0000	0.0000	0.0000
Dialysis Status	HCC_RRU119	0.0000	0.0000	0.1028
Renal Failure	HCC_RRU130	0.4396	0.4054	0.4630
Decubitus Ulcer of Skin	HCC_RRU131	0.2728	0.2589	0.2582
Chronic Ulcer of Skin, Except Decubitus	HCC_RRU132	0.0000	0.0000	0.1037
Major Head Injury	HCC_RRU148	0.1259	0.1921	0.1239
Vertebral Fractures without Spinal Cord Injury	HCC_RRU149	0.1213	0.1241	0.1349
Hip Fracture/Dislocation	HCC_RRU155	0.0000	0.0000	0.0976
Major Complications of Medical Care and Trauma	HCC_RRU157	0.1893	0.2239	0.1384
Major Organ Transplant Status	HCC_RRU158	0.1031	0.0000	0.0837
Artificial Openings for Feeding or Elimination	HCC_RRU161	0.0000	0.0000	0.0674
Amputation Status, Lower Limb/Amputation Complications	HCC_RRU164	0.2236	0.1822	0.0996
Diabetes and CHF	HCC_RRU174	0.0000	0.2389	0.1610
Diabetes and Cerebrovascular Disease	HCC_RRU176	0.1465	0.1588	0.0924

These are the risk adjustment weights to be used for the second year of data collection (HEDIS 2012).NOTE: CCs or HCCs not listed receive a weight of ZERO (i.e., 0.0000).
The weights, diagnosis mappings to CCs, and implementation of the HCC ranking are available at the following link: http://www.ncqa.org/tabid/1415/Default.aspx.

		Commercial Year 2	Medicare Year 2	
		18-64	18-64	65+
COPD, Cerebrovascular Disease (CVD), CAD	HCC_RRU177	0.0000	0.1820	0.1474
Renal Failure and CHF	HCC_RRU901	0.0000	0.0000	-0.0412
Renal Failure, CHF, and Diabetes Combination	HCC_RRU902	0.0718	0.0000	-0.0268
COPD, Cerebrovascular Disease (CVD), CAD	HCC_RRU904	0.0000	0.0000	-0.0565
Renal Failure and CHF	HCC_RRU905	0.0000	0.0000	-0.0520
Renal Failure, CHF, and Diabetes Combination	HCC_RRU906	0.0000	0.0000	-0.0559

Table 1: Number of Index Hospital Stays (Denominator Events) in First Year of Health Plan Submissions (HEDIS 2011).

Hospital Stays		Commercial									
	Age Cohort	N (plans)	mean	std	min	p10	p25	p50	p75	p90	max
	Total 1844	315	1513.8	2680.5	5	89	194	630	1514	3765	21150
	Total 4554	315	1488.8	2443.1	7	103	220	632	1551	3892	16302
	Total 5564	315	1860.7	3139.0	6	117	276	752	2052	4679	21307
	Total 6574	314	453.1	847.6	1	21	50	176.5	482	1180	7705
	Total 7584	302	198.4	528.5	1	3	11	51.5	177	406	5029
	Total 85+	253	95.2	288.5	1	2	5	24	66	157	3100
	Total All Ages	315	5581.7	9471.4	23	358	787	2189	6114	14437	70039

Table 2: Expected, Observed, and Observed-to-Expeced Ratios, Unweighted and Weighted, in First Year of Health Plan Submissions (HEDIS 2011)

Unweighted v. Weighted	Metric	Commercial									
		Age Cohort	N (plans)	mean	std	min	p10	p25	p50	p75	p90	max
Unweighted	Expected	Total 1844	315	0.0815	0.0113	0.0570	0.0667	0.0747	0.0806	0.0879	0.0954	0.1275
		Total 4554	315	0.0859	0.0115	0.0511	0.0695	0.0796	0.0869	0.0938	0.0986	0.1298
		Total 5564	315	0.0931	0.0134	0.0542	0.0753	0.0826	0.0944	0.1020	0.1082	0.1430
		Total 6574	314	0.0631	0.0178	0.0222	0.0464	0.0524	0.0625	0.0709	0.0774	0.1997
		Total 7584	302	0.0369	0.0130	0.0139	0.0235	0.0286	0.0359	0.0422	0.0488	0.1150
		Total 85+	253	0.0263	0.0099	0.0076	0.0177	0.0206	0.0246	0.0293	0.0352	0.0978
		Total All Ages	315	0.0831	0.0108	0.0500	0.0665	0.0763	0.0848	0.0904	0.0957	0.1140
	Observed	Total 1844	315	0.0777	0.0572	0.0000	0.0521	0.0659	0.0733	0.0831	0.0934	1.0000
		Total 4554	315	0.0843	0.0538	0.0000	0.0631	0.0731	0.0826	0.0897	0.0982	0.9865
		Total 5564	315	0.0927	0.0524	0.0000	0.0690	0.0802	0.0897	0.1002	0.1089	0.9597
		Total 6574	314	0.0891	0.0778	0.0000	0.0364	0.0572	0.0809	0.1053	0.1304	1.0000
		Total 7584	302	0.0833	0.1231	0.0000	0.0000	0.0148	0.0527	0.1050	0.1795	1.0000
		Total 85+	253	0.0693	0.0992	0.0000	0.0000	0.0000	0.0294	0.1045	0.1786	0.5000
		Total All Ages	315	0.0843	0.0520	0.0429	0.0671	0.0747	0.0815	0.0880	0.0949	0.9780
	Observed-to-Expected	Total 1844	315	0.9663	0.7261	0.0000	0.6529	0.8020	0.8930	1.0528	1.2524	12.6955
		Total 4554	315	0.9903	0.5887	0.0000	0.7420	0.8287	0.9352	1.0731	1.2571	10.5434
		Total 5564	315	1.0054	0.4562	0.0000	0.7318	0.8391	0.9493	1.1220	1.3170	7.8522
		Total 6574	314	1.4706	1.3427	0.0000	0.5513	0.9018	1.2940	1.7401	2.3257	17.6086
		Total 7584	302	2.3994	4.0924	0.0000	0.0000	0.4239	1.4979	2.8197	4.6640	36.6732
		Total 85+	253	2.5566	3.5219	0.0000	0.0000	0.0000	1.0371	4.0481	6.8619	24.0936
		Total All Ages	315	1.0240	0.5318	0.5899	0.8050	0.8817	0.9468	1.0912	1.2862	9.7467
Weighted	Expected	Total 1844	315	0.0836	0.3709	0.0570	0.0706	0.0780	0.0837	0.0883	0.0954	0.1275
		Total 4554	315	0.0883	0.3633	0.0511	0.0745	0.0853	0.0889	0.0932	0.0978	0.1298
		Total 5564	315	0.0966	0.4726	0.0542	0.0776	0.0923	0.0981	0.1022	0.1079	0.1430
		Total 6574	314	0.0641	0.2076	0.0222	0.0491	0.0570	0.0659	0.0711	0.0753	0.1997
		Total 7584	302	0.0367	0.1050	0.0139	0.0247	0.0330	0.0368	0.0420	0.0445	0.1150
		Total 85+	253	0.0264	0.0503	0.0076	0.0184	0.0238	0.0265	0.0304	0.0314	0.0978
		Total All Ages	315	0.0852	0.7573	0.0500	0.0695	0.0816	0.0863	0.0909	0.0969	0.1140
	Observed	Total 1844	315	0.0741	0.5429	0.0000	0.0637	0.0688	0.0731	0.0793	0.0838	1.0000
		Total 4554	315	0.0823	0.5570	0.0000	0.0726	0.0769	0.0828	0.0874	0.0931	0.9865
		Total 5564	315	0.0919	0.7063	0.0000	0.0799	0.0858	0.0904	0.0985	0.1065	0.9597
		Total 6574	314	0.0775	0.6285	0.0000	0.0459	0.0594	0.0732	0.0955	0.1114	1.0000
		Total 7584	302	0.0605	0.5875	0.0000	0.0179	0.0274	0.0492	0.0813	0.1179	1.0000
		Total 85+	253	0.0606	0.4755	0.0000	0.0082	0.0135	0.0558	0.1045	0.1181	0.5000
		Total All Ages	315	0.0818	1.0379	0.0429	0.0729	0.0754	0.0810	0.0861	0.0923	0.9780
	Observed-to-Expected	Total 1844	315	0.8954	7.5101	0.0000	0.7758	0.8304	0.8770	0.9232	1.0776	12.6955
		Total 4554	315	0.9408	7.1299	0.0000	0.8197	0.8620	0.9136	1.0033	1.1056	10.5434
		Total 5564	315	0.9614	7.7338	0.0000	0.8013	0.8732	0.9316	1.0220	1.1438	7.8522
		Total 6574	314	1.2242	10.4571	0.0000	0.7623	0.8645	1.1874	1.4498	1.7858	17.6086
		Total 7584	302	1.6740	16.0874	0.0000	0.4304	0.8007	1.5364	2.4644	2.8362	36.6732
		Total 85+	253	2.3690	18.6238	0.0000	0.2822	0.6437	1.8339	3.9367	4.5568	24.0936
		Total All Ages	315	0.9718	13.5467	0.5899	0.8342	0.8913	0.9273	1.0191	1.2097	9.7467

Table 1: Number of Index Hospital Stays (Denominator Events) in First Year of Health Plan Submissions (HEDIS 2011).

Hospital Stays		Medicare									
	Age Cohort	N (plans)	mean	std	min	p10	p25	p50	p75	p90	max
	Total 1844	378	61.7	124.8	1	3	7	21	56	145	1190
	Total 4554	400	125.9	225.3	1	7	17	46	123.5	328.5	1630
	Total 5564	410	245.7	432.6	1	11.5	35	103	245	609	3609
	Total 6574	424	1084.7	2093.1	1	47	122.5	335	1218.5	2682	20035
	Total 7584	422	1181.7	2507.5	1	38	90	285	1330	3077	20956
	Total 85+	420	603.2	1402.1	1	14	37	146.5	612	1477	14723
	Total All Ages	424	3269.7	6466.2	7	165	340.5	956	3644	8192	55811

Table 2: Expected, Observed, and Observed-to-Expeced Ratios, Unweighted and Weighted, in First Year of Health Plan Submissions (HEDIS 2011)

Unweighted v. Weighted	Metric	Medicare									
		Age Cohort	N (plans)	mean	std	min	p10	p25	p50	p75	p90	max
Unweighted	Expected	Total 1844	378	0.2466	0.0506	0.1005	0.1898	0.2208	0.2425	0.2666	0.2944	0.4981
		Total 4554	400	0.2188	0.0399	0.0870	0.1719	0.1992	0.2190	0.2386	0.2612	0.4331
		Total 5564	410	0.1969	0.0388	0.0709	0.1567	0.1757	0.1952	0.2145	0.2342	0.5718
		Total 6574	424	0.1465	0.0251	0.0532	0.1207	0.1323	0.1437	0.1578	0.1771	0.3441
		Total 7584	422	0.1585	0.0258	0.0415	0.1312	0.1453	0.1585	0.1706	0.1845	0.3824
		Total 85+	420	0.1624	0.0239	0.0276	0.1387	0.1504	0.1622	0.1721	0.1860	0.3247
		Total All Ages	424	0.1640	0.0266	0.0554	0.1371	0.1494	0.1619	0.1750	0.1981	0.3542
	Observed	Total 1844	378	0.1599	0.1344	0.0000	0.0000	0.0847	0.1525	0.2157	0.3000	1.0000
		Total 4554	400	0.1492	0.1072	0.0000	0.0000	0.1000	0.1480	0.1923	0.2333	1.0000
		Total 5564	410	0.1489	0.0901	0.0000	0.0551	0.1143	0.1471	0.1739	0.2213	1.0000
		Total 6574	424	0.1312	0.0490	0.0000	0.0858	0.1082	0.1280	0.1486	0.1831	0.5000
		Total 7584	422	0.1508	0.0703	0.0000	0.1019	0.1250	0.1437	0.1668	0.2063	1.0000
		Total 85+	420	0.1527	0.1010	0.0000	0.0667	0.1194	0.1471	0.1752	0.2141	1.0000
		Total All Ages	424	0.1419	0.0449	0.0000	0.1084	0.1248	0.1406	0.1576	0.1774	0.6667
	Observed-to-Expected	Total 1844	378	0.6426	0.5617	0.0000	0.0000	0.3574	0.6220	0.8402	1.1877	4.3049
		Total 4554	400	0.6775	0.4875	0.0000	0.0000	0.4675	0.6584	0.8378	1.0380	4.2178
		Total 5564	410	0.7587	0.4627	0.0000	0.3206	0.5933	0.7412	0.8610	1.1102	6.3388
		Total 6574	424	0.9048	0.3509	0.0000	0.6113	0.7650	0.8945	1.0051	1.1698	3.8350
		Total 7584	422	0.9660	0.4993	0.0000	0.6448	0.7994	0.9209	1.0642	1.2622	6.9074
		Total 85+	420	0.9507	0.6195	0.0000	0.4114	0.7410	0.9080	1.0859	1.3299	5.7024
		Total All Ages	424	0.8769	0.2905	0.0000	0.6600	0.7779	0.8723	0.9532	1.0614	3.4367
Weighted	Expected	Total 1844	378	0.2532	0.2209	0.1005	0.2233	0.2356	0.2534	0.2654	0.2786	0.4981
		Total 4554	400	0.2265	0.2900	0.0870	0.2001	0.2073	0.2293	0.2410	0.2525	0.4331
		Total 5564	410	0.1992	0.3593	0.0709	0.1742	0.1855	0.1996	0.2116	0.2275	0.5718
		Total 6574	424	0.1454	0.5721	0.0532	0.1268	0.1350	0.1439	0.1548	0.1677	0.3441
		Total 7584	422	0.1594	0.5737	0.0415	0.1420	0.1493	0.1613	0.1684	0.1792	0.3824
		Total 85+	420	0.1644	0.3787	0.0276	0.1479	0.1563	0.1662	0.1726	0.1810	0.3247
		Total All Ages	424	0.1626	1.0753	0.0554	0.1427	0.1518	0.1623	0.1727	0.1848	0.3542
	Observed	Total 1844	378	0.1706	0.4438	0.0000	0.1057	0.1429	0.1677	0.1954	0.2405	1.0000
		Total 4554	400	0.1577	0.4743	0.0000	0.1061	0.1318	0.1598	0.1832	0.1971	1.0000
		Total 5564	410	0.1550	0.5626	0.0000	0.1158	0.1379	0.1553	0.1688	0.1866	1.0000
		Total 6574	424	0.1298	0.8424	0.0000	0.1059	0.1183	0.1271	0.1379	0.1570	0.5000
		Total 7584	422	0.1448	0.9072	0.0000	0.1226	0.1355	0.1416	0.1579	0.1668	1.0000
		Total 85+	420	0.1504	0.7846	0.0000	0.1234	0.1387	0.1510	0.1670	0.1815	1.0000
		Total All Ages	424	0.1425	1.4338	0.0000	0.1205	0.1320	0.1407	0.1562	0.1643	0.6667
	Observed-to-Expected	Total 1844	378	0.6732	1.6907	0.0000	0.4481	0.5703	0.6680	0.7653	0.8928	4.3049
		Total 4554	400	0.6969	2.0376	0.0000	0.5031	0.5868	0.7186	0.7917	0.8965	4.2178
		Total 5564	410	0.7806	2.7547	0.0000	0.5987	0.6877	0.7783	0.8393	0.9483	6.3388
		Total 6574	424	0.8953	5.3160	0.0000	0.7522	0.8156	0.8968	0.9587	1.0429	3.8350
		Total 7584	422	0.9146	7.1054	0.0000	0.7788	0.8129	0.9005	0.9950	1.0588	6.9074
		Total 85+	420	0.9245	7.2074	0.0000	0.7477	0.8091	0.9149	1.0185	1.0941	5.7024
		Total All Ages	424	0.8811	9.4640	0.0000	0.7440	0.7923	0.8763	0.9444	1.0224	3.4367

Plan All-Cause Readmissions (PCR)

SUMMARY OF CHANGES TO HEDIS 2012

- Clarified that a principal diagnosis is required for the pregnancy exclusion in the denominator and numerator criteria.
- Clarified and re-ordered the steps to identify risk adjustment determination and weighting.
- Added CPT codes 92002, 92004, 92012, 92014, 98925–98929, 98940–98942 to Table PCR-B.
- Added UB Revenue codes 1001, 1002 to Table PCR-B.

Description

For members 18 years of age and older, the number of acute inpatient stays during the measurement year that were followed by an acute readmission for any diagnosis within 30 days and the predicted probability of an acute readmission. Data are reported in the following categories:

1. Count of Index Hospital Stays (IHS) (denominator)
2. Count of 30-Day Readmissions (numerator)
3. Average Adjusted Probability of Readmission

Definitions

IHS	Index hospital stay. An acute inpatient stay with a discharge on or between January 1 and December 1 of the measurement year. Exclude stays that meet the exclusion criteria in the denominator section.
Index Admission Date	The IHS admission date.
Index Discharge Date	The IHS discharge date. The index discharge date must occur on or between January 1 and December 1 of the measurement year.
Index Readmission Stay	An acute inpatient stay for any diagnosis with an admission date within 30 days of a previous Index Discharge Date.
Index Readmission Date	The admission date associated with the Index Readmission Stay.
Classification Period	365 days prior to and including an Index Discharge Date.

Risk Adjustment Tables

Table	Table Description
HCC-Surg	Surgery codes for Risk Adjustment Determination
PCR-DischCC	Discharge Clinical Condition category codes for Risk Adjustment Determination
CC-Comorbid	Comorbid Clinical Condition category codes for Risk Adjustment Determination Step 2
HCC -Rank	HCC rankings for Risk Adjustment Determination Step 3
HCC-Comb	Combination HCCs for Risk Adjustment Determination Step 5
PCR-MA-DischCC-Weight	MA and SNP primary discharge weights for Risk Adjustment Weighting Step 2
PCR-MA-ComorbHCC-Weight	MA and SNP comorbidity weights for Risk Adjustment Weighting Step 3
PCR-Comm-DischCC-Weight	Commercial primary discharge weights for Risk Adjustment Weighting Step 2
PCR-Comm-ComorbHCC-Weight	Commercial comorbidity weights for Risk Adjustment Weighting Step 3
PCR-MA-OtherWeights	MA and SNP base risk, surgery, age and gender weights for Risk Adjustment Weighting Steps 1, 4, 5
PCR-Comm-OtherWeights	Commercial base risk, surgery, age and gender weights for Risk Adjustment Weighting Steps 1, 4, 5

Note: *The Risk Adjustment tables will be released on November 15, 2011, and posted to www.ncqa.org.*

Eligible Population

Product line	Commercial, Medicare (report each product line separately)
Ages	18 years and older as of the Index Discharge Date.
Continuous enrollment	365 days prior to the Index Discharge Date through 30 days after the Index Discharge Date.
Allowable gap	No more than one gap in enrollment of up to 45 days during the 365 days prior to the Index Discharge Date and no gap during the 30 days following the Index Discharge date.
Anchor date	Index Discharge Date.
Benefit	Medical.
Event/ diagnosis	An acute inpatient discharge on or between January 1 and December 1 of the measurement year. The denominator for this measure is based on discharges, not members. Include all acute inpatient discharges for members who had one or more discharges on or between January 1 and December 1 of the measurement year. The organization should follow the steps below to identify acute inpatient stays.

Administrative Specification

Denominator The eligible population.

Step 1 Identify all acute inpatient stays with a discharge date on or between January 1 and December 1 of the measurement year.

Include acute admissions to behavioral healthcare facilities. Exclude nonacute inpatient rehabilitation services, including nonacute inpatient stays at rehabilitation facilities.

Step 2 ***Acute-to–acute transfers:*** Keep the original admission date as the Index Admission Date, but use the transfer's discharge date as the Index Discharge Date.

Step 3 Exclude hospital stays where the Index Admission Date is the same as the Index Discharge Date.

Step 4 Exclude any acute inpatient stay with a discharge date in the 30 days prior to the Index Admission Date.

Step 5 Exclude stays for the following reasons.

- Inpatient stays with discharges for death
- Acute inpatient discharge with a principal diagnosis for pregnancy or for any other condition originating in the perinatal period in Table PCR-A.

Table PCR-A: Codes to Identify Maternity Related Inpatient Discharges

Description	ICD-9-CM Diagnosis
Pregnancy	630-679, V22, V23, V28
Conditions originating in the perinatal period	760-779, V21, V29-V39

Step 6 Calculate continuous enrollment.

Step 7 Assign each acute inpatient stay to one age and gender category. Refer to Table PCR-2/3.

Risk Adjustment Determination

For each IHS, use the following steps to identify risk adjustment categories based on presence of surgeries, discharge condition, comorbidity, age and gender.

Surgeries Determine if the member underwent surgery during the inpatient stay. Download the list of codes from the NCQA Web site (Table HCC-Surg) and use it to identify surgeries. Consider an IHS to include a surgery if at least one procedure code in Table HCC-Surg is present from any provider between the admission and discharge dates.

Discharge Condition Assign a discharge Clinical Condition (CC) category code to the IHS based on its primary discharge diagnosis, using Table PCR-DischCC. For acute-to-acute transfers, use the transfer's primary discharge diagnosis.

Exclude diagnoses that cannot be mapped to Table PCR-DischCC.

Comorbidities

Step 1 Identify all diagnoses for face-to-face encounters (Table PCR-B) during the classification period. Exclude the primary discharge diagnosis on the IHS.

Table PCR-B: Codes to Identify Visit Type

Description	CPT	UB Revenue
Outpatient	92002, 92004, 92012, 92014, 98925-98929, 98940-98942, 99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99384-99387, 99394-99397, 99401-99404, 99411, 99412, 99420, 99429, 99455, 99456	051x, 0520-0523, 0526-0529, 057x-059x, 082x-085x, 088x, 0982, 0983
Nonacute inpatient	99304-99310, 99315, 99316, 99318, 99324-99328, 99334-99337	0118, 0128, 0138, 0148, 0158, 019x, 0524, 0525, 055x, 066x, 1001, 1002
Acute inpatient	99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99291	010x, 0110-0114, 0119, 0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x, 021x, 072x, 080x, 0987
ED	99281-99285	045x, 0981

Step 2 Assign each diagnosis to one comorbid Clinical Condition (CC) category using Table CC—Comorbid.

Exclude all diagnoses that cannot be assigned to a comorbid CC category. For members with no qualifying diagnoses from face-to-face encounters, skip to the Risk Adjustment Weighting section.

All digits must match exactly when mapping diagnosis codes to the comorbid CCs.

Step 3 Determine HCCs for each comorbid CC identified. Refer to Table HCC—Rank.

For each stay's comorbid CC list, match the comorbid CC code to the comorbid CC code in the table, and assign:

- The ranking group
- The rank
- The HCC.

For comorbid CCs that do not match to Table HCC—Rank, use the comorbid CC as the HCC and assign a rank of 1.

Note: *One comorbid CC can map to multiple HCCs; each HCC can have one or more comorbid CCs.*

Step 4 Select only the highest ranked HCC in each ranking group using the *Rank* column (1 is the highest rank possible).

Drop all other HCCs in each ranking group, and de-duplicate the HCC list if necessary.

Example *Assume a stay with the following comorbid CCs*: CC-15, CC-19 and CC-80 (assume no other CCs).

- CC-80 does not have a map to the ranking table and becomes HCC-80
- HCC-15 is part of Ranking Group 1 and HCC-19 is part of Ranking Groups Diabetes 1–Diabetes 4. Because CC-15 is ranked higher than CC-19 in Ranking Group Diabetes 1, the comorbidity is assigned as HCC-15 for Ranking Group 1. Because CC-19 is ranked higher in Ranking Groups Diabetes 2-4, the comorbidity is assigned as HCC-19 for these ranking groups.
- The final comorbidities for this discharge include HCC-15, HCC-19 and HCC-80.

Example: Table HCC—Rank

Ranking Group	CC	Description	Rank	HCC
NA	CC-80	Congestive Heart Failure	NA	HCC-80
Diabetes 1	CC-15	Diabetes With Renal or Peripheral Circulatory Manifestation	1	HCC-15
	CC-16	Diabetes With Neurologic or Other Specified Manifestation	2	HCC-16
	CC-17	Diabetes With Acute Complications	3	HCC-17
	CC-18	Diabetes With Ophthalmologic or Unspecified Manifestation	4	HCC-18
	CC-19	Diabetes Without Complications	5	HCC-19
Diabetes 2	CC-16	Diabetes With Neurologic or Other Specified Manifestation	1	HCC-16
	CC-17	Diabetes With Acute Complications	2	HCC-17
	CC-18	Diabetes With Ophthalmologic or Unspecified Manifestation	3	HCC-18
	CC-19	Diabetes Without Complication	4	HCC-19
Diabetes 3	CC-17	Diabetes With Acute Complications	1	HCC-17
	CC-18	Diabetes With Ophthalmologic or Unspecified Manifestation	2	HCC-18
	CC-19	Diabetes Without Complication	3	HCC-19
Diabetes 4	CC-18	Diabetes With Ophthalmologic or Unspecified Manifestation	1	HCC-18
	CC-19	Diabetes Without Complication	2	HCC-19

Step 5 Identify combination HCCs listed in Table HCC-Comb.

Some combinations suggest a greater amount of risk when observed together. For example, when diabetes *and* CHF are present, an increased amount of risk is evident. Additional HCCs are selected to account for these relationships.

Compare each stay's list of unique HCCs to those in the *HCC* column in Table HCC—Comb and assign any additional HCC conditions.

For fully nested combinations (e.g., the diabetes/CHF combinations is nested in the diabetes/CHF/renal combination), use only the more comprehensive pattern. In this example, only the diabetes/CHF/renal combination is counted.

For overlapping combinations (e.g., the CHF, COPD combination overlaps with the CHR/ renal/diabetes combination), use both sets of combinations. In this example, both CHF/COPD and CHF/renal/diabetes combinations are counted.

Based on the combinations, a member can have none, one or more of these added HCCs.

Example For a stay with comorbidities HCC-15, HCC-19 and HCC-80 (assume no other HCCs), assign HCC-901 in addition to HCC-15, HCC-19 and HCC-80. This *does not* replace HCC-15, HCC19 or HCC-80.

Example: Table HCC-Comb

Combination: Diabetes and CHF			
Comorbid HCC	Comorbid HCC	Comorbid HCC	Combination HCC
HCC-15	HCC-80	NA	HCC-901
HCC-16	HCC-80	NA	HCC-901
HCC-17	HCC-80	NA	HCC-901
HCC-18	HCC-80	NA	HCC-901
HCC-19	HCC-80	NA	HCC-901

Risk Adjustment Weighting

For each IHS, use the following steps to identify risk adjustment weights based on presence of surgeries, discharge condition, comorbidity, age and gender.

Note: *The final weights table will be released on November 15, 2011.*

Step 1 For each IHS with a surgery, link the surgery weight.

- *For Medicare Advantage and SNP product lines:* Use Table PCR-MA-OtherWeights
- *For commercial product lines:* Use Table PCR-Comm-OtherWeights

Step 2 For each IHS with a discharge CC Category, link the primary discharge weights.

- *For Medicare Advantage and SNP product lines:* Use Table PCR-MA-DischCC-Weight
- *For commercial product lines:* Use Table PCR-Comm-DischCC-Weight

Step 3 For each IHS with a comorbidity HCC Category, link the weights.

- *For Medicare Advantage and SNP product lines:* Use Table PCR-MA-ComorbHCC-Weight
- *For commercial product lines:* Use Table PCR-Comm-ComorbHCC-Weight

Step 4 Link the age and gender weights for each IHS.

- *For Medicare Advantage and SNP product lines:* Use Table PCR-MA-OtherWeights
- *For commercial product lines:* Use Table PCR-Comm-OtherWeights

Step 5 Identify the base risk weight.

- *For Medicare product lines:* Use Table PCR-MA-OtherWeights to determine the base risk weight
- *For commercial product lines:* Use Table PCR-Comm-OtherWeights to determine the base risk weight

Step 6 Sum all weights associated with the IHS (i.e., presence of surgery, primary discharge diagnosis, comorbidities, age, gender and base risk weight).

Step 7 Use the formula below to calculate the adjusted probability of a readmission based on the sum of the weights for each IHS.

Adjusted probability of readmission = $\frac{e^{(\Sigma WeightsForIHS)}}{1+e^{(\Sigma WeightsForIHS)}}$

OR

Adjusted probability of readmission = [exp (sum of weights for IHS)] / [1 + exp (sum of weights for IHS)]

Note: *"Exp" refers to the exponential or antilog function.*

Sample Table: PCR—Risk Adjustment Weighting

Member ID*	Admission Counter	Base Risk Weight	Age	Gender	Age and Gender Weight	Surgical Weight	ICD-9 Diagnosis Code	Discharge CC		HCC-PCR		Sum of Weights	Adjusted Probability
								Category	Weight	Category	Weight		
1250	1	-1.08883	67	Female	0.1000	-0.2800	250.4	15	0.0700	20	0.1400	-0.8600	0.2975838501
										25	0.2000		
4010	1	-1.08883	50.00	Male	0.1200	NA	007.4	5	0.0300	NA	NA	-0.9400	0.2811367377
4010	2	-1.08883	50.00	Male	0.1200	NA	298.00	77	0.0600	5	0.0100	-0.5700	0.3615068401
										47	0.3300		

*Each Member ID field with a value represents a unique IHS.

Numerator At least one acute readmission for any diagnosis within 30 days of the Index Discharge Date.

Step 1 Identify all acute inpatient stays with an admission date on or between January 2 and December 31 of the measurement year.

Step 2 ***Acute-to-acute transfers:*** Keep the original admission date as the Index Admission Date, but use the transfer's discharge date as the Index Discharge Date.

Step 3 Exclude acute inpatient hospital discharges with a principal diagnosis using the codes listed in Table PCR-A.

Step 4 For each IHS, determine if any of the acute inpatient stays have an admission date within 30 days after the Index Discharge Date.

Reporting: *Denominator*

Count the number of IHS for each age, gender and total combination and enter these values into the reporting table.

Reporting: *Risk Adjustment*

Step 1 Calculate the average adjusted probability for IHS for each age, gender and total combinations and the overall total.

Step 2 Enter these values into the reporting table and round to 10 decimal places.

Note: *Do not take the average of the cells in the reporting table.*

Example For the "18–44" age category:

- Identify all IHS by 18–44 year-old males and calculate the average adjusted probability
- Identify all IHS by 18–44 year-old females and calculate the average adjusted probability
- Identify all IHS by all 18–44 year-olds and calculate the average adjusted probability.

Repeat for each subsequent group.

Reporting: *Numerator*

Count the number of IHS with a readmission within 30 days for each age, gender and total combination and enter these values into the reporting table.

Table PCR-2/3: Plan All-Cause Readmissions Rates by Age, Gender and Risk Adjustment

Age	Sex	Count of Index Stays (Denominator)	Count of 30-Day Readmissions (Numerator)	Average Adjusted Probability
18-44	Male	_____	_____	_____
	Female	_____	_____	_____
	Total:	_____	_____	_____
45-54	Male	_____	_____	_____
	Female	_____	_____	_____
	Total:	_____	_____	_____
55-64	Male	_____	_____	_____
	Female	_____	_____	_____
	Total:	_____	_____	_____
65-74	Male	_____	_____	_____
	Female	_____	_____	_____
	Total:	_____	_____	_____
75-84	Male	_____	_____	_____
	Female	_____	_____	_____
	Total:	_____	_____	_____
85+	Male	_____	_____	_____
	Female	_____	_____	_____
	Total:	_____	_____	_____
Total	Male	_____	_____	_____
	Female	_____	_____	_____
	Total:	_____	_____	_____

Classification Tables

	Commercial 18-64								
	Correct		Incorrect		Percentages				
Probability Level	Event	Non-Event	Event	Non-Event	Correct	Sensitivity	Specificity	False Pos.	False Neg.
0.02	104000	0	898000	0	10.4	100	0	89.6	.
0.04	99846	139000	759000	4084	23.8	96.1	15.5	88.4	2.9
0.06	89823	345000	553000	14107	43.4	86.4	38.4	86	3.9
0.08	75654	540000	358000	28276	61.5	72.8	60.1	82.6	5
0.10	64934	646000	252000	38996	70.9	62.5	71.9	79.5	5.7
0.12	57097	703000	195000	46833	75.9	54.9	78.3	77.4	6.2
0.14	49687	748000	150000	54243	79.6	47.8	83.3	75.1	6.8
0.16	42938	786000	113000	60992	82.7	41.3	87.5	72.4	7.2
0.18	37423	810000	88139	66507	84.6	36	90.2	70.2	7.6
0.20	33255	827000	70934	70675	85.9	32	92.1	68.1	7.9
0.22	30015	839000	59677	73915	86.7	28.9	93.4	66.5	8.1
0.24	27450	847000	51678	76480	87.2	26.4	94.2	65.3	8.3
0.26	25283	853000	45528	78647	87.6	24.3	94.9	64.3	8.4
0.28	23397	857000	40790	80533	87.9	22.5	95.5	63.5	8.6
0.30	20783	863000	35635	83147	88.1	20	96	63.2	8.8
0.32	16852	869000	28853	87078	88.4	16.2	96.8	63.1	9.1
0.34	15352	873000	25390	88578	88.6	14.8	97.2	62.3	9.2
0.36	12308	879000	19648	91622	88.9	11.8	97.8	61.5	9.4
0.38	8671	885000	13540	95259	89.1	8.3	98.5	61	9.7
0.40	6577	889000	9451	97353	89.3	6.3	98.9	59	9.9
0.42	5421	891000	7087	98509	89.5	5.2	99.2	56.7	10
0.44	4649	893000	5583	99281	89.5	4.5	99.4	54.6	10
0.46	4139	894000	4608	99791	89.6	4	99.5	52.7	10
0.48	3727	894000	3839	100000	89.6	3.6	99.6	50.7	10.1
0.50	3323	895000	3252	101000	89.6	3.2	99.6	49.5	10.1
0.52	2848	896000	2742	101000	89.6	2.7	99.7	49.1	10.1
0.54	2568	896000	2310	101000	89.7	2.5	99.7	47.4	10.2
0.56	2331	896000	2012	102000	89.7	2.2	99.8	46.3	10.2
0.58	1915	897000	1676	102000	89.7	1.8	99.8	46.7	10.2
0.60	1586	897000	1342	102000	89.7	1.5	99.9	45.8	10.2
0.62	1340	897000	1099	103000	89.7	1.3	99.9	45.1	10.3
0.64	1111	897000	885	103000	89.7	1.1	99.9	44.3	10.3
0.66	881	898000	710	103000	89.6	0.8	99.9	44.6	10.3
0.68	664	898000	548	103000	89.6	0.6	99.9	45.2	10.3
0.70	516	898000	427	103000	89.6	0.5	100	45.3	10.3
0.72	390	898000	321	104000	89.6	0.4	100	45.1	10.3
0.74	288	898000	230	104000	89.6	0.3	100	44.4	10.3
0.76	207	898000	156	104000	89.6	0.2	100	43	10.4
0.78	149	898000	115	104000	89.6	0.1	100	43.6	10.4
0.80	110	898000	73	104000	89.6	0.1	100	39.9	10.4
0.82	73	898000	49	104000	89.6	0.1	100	40.2	10.4
0.84	44	898000	30	104000	89.6	0	100	40.5	10.4
0.86	20	898000	22	104000	89.6	0	100	52.4	10.4
0.88	10	898000	9	104000	89.6	0	100	47.4	10.4
0.90	5	898000	3	104000	89.6	0	100	37.5	10.4
0.92	4	898000	1	104000	89.6	0	100	20	10.4
0.94	2	898000	0	104000	89.6	0	100	0	10.4
0.96	0	898000	0	104000	89.6	0	100	.	10.4

Classification Tables

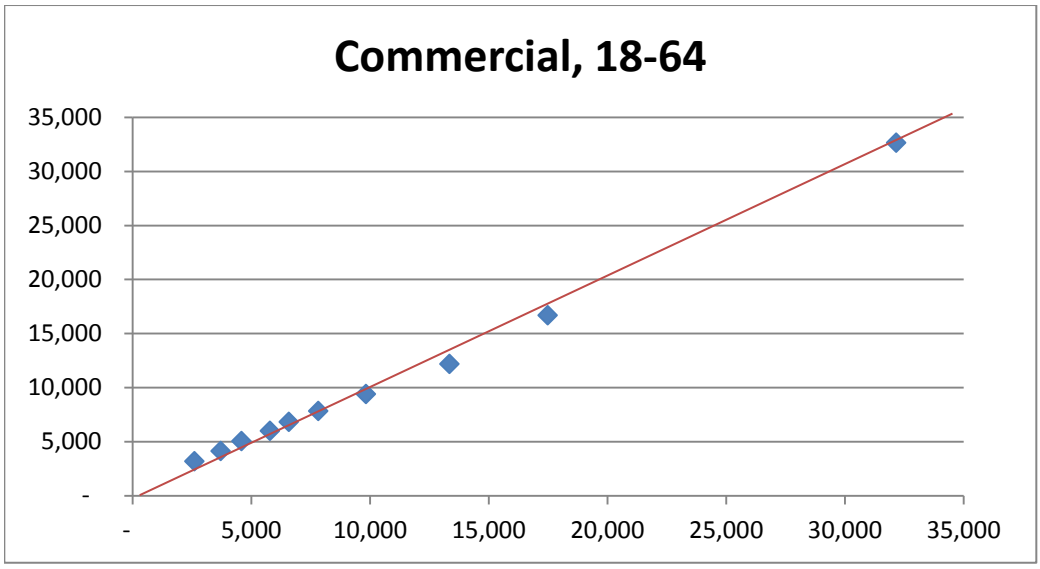
	Medicare 65+								
	Correct		Incorrect		Percentages				
Probability Level	Event	Non-Event	Event	Non-Event	Correct	Sensitivity	Specificity	False Pos.	False Neg.
0.02	199000	0	1250000	0	13.7	100	0	86.3	.
0.04	199000	20	1250000	0	13.7	100	0	86.3	0
0.06	196000	66412	1180000	2580	18.2	98.7	5.3	85.8	3.7
0.08	187000	200000	1050000	11627	26.8	94.1	16	84.8	5.5
0.10	165000	432000	814000	33796	41.3	83	34.7	83.2	7.3
0.12	138000	641000	605000	60137	54	69.7	51.5	81.4	8.6
0.14	113000	805000	442000	85829	63.5	56.8	64.6	79.7	9.6
0.16	89384	930000	317000	109000	70.5	45	74.6	78	10.5
0.18	68928	1020000	224000	130000	75.5	34.7	82	76.5	11.3
0.20	52159	1090000	157000	146000	79	26.3	87.4	75	11.8
0.22	38960	1140000	109000	160000	81.4	19.6	91.2	73.7	12.3
0.24	28770	1170000	76284	170000	83	14.5	93.9	72.6	12.7
0.26	21381	1190000	53428	177000	84	10.8	95.7	71.4	12.9
0.28	15843	1210000	37442	183000	84.8	8	97	70.3	13.1
0.30	11714	1220000	26291	187000	85.2	5.9	97.9	69.2	13.3
0.32	8733	1230000	18569	190000	85.6	4.4	98.5	68	13.4
0.34	6511	1230000	13287	192000	85.8	3.3	98.9	67.1	13.5
0.36	4887	1240000	9555	194000	85.9	2.5	99.2	66.2	13.5
0.38	3753	1240000	6819	195000	86	1.9	99.5	64.5	13.6
0.40	2828	1240000	4862	196000	86.1	1.4	99.6	63.2	13.6
0.42	2147	1240000	3538	196000	86.2	1.1	99.7	62.2	13.6
0.44	1648	1240000	2479	197000	86.2	0.8	99.8	60.1	13.7
0.46	1223	1240000	1775	197000	86.2	0.6	99.9	59.2	13.7
0.48	925	1250000	1255	198000	86.2	0.5	99.9	57.6	13.7
0.50	702	1250000	897	198000	86.2	0.4	99.9	56.1	13.7
0.52	525	1250000	659	198000	86.2	0.3	99.9	55.7	13.7
0.54	413	1250000	474	198000	86.3	0.2	100	53.4	13.7
0.56	300	1250000	323	198000	86.3	0.2	100	51.8	13.7
0.58	232	1250000	220	198000	86.3	0.1	100	48.7	13.7
0.60	165	1250000	154	198000	86.3	0.1	100	48.3	13.7
0.62	123	1250000	111	198000	86.3	0.1	100	47.4	13.7
0.64	93	1250000	73	199000	86.3	0	100	44	13.7
0.66	72	1250000	60	199000	86.3	0	100	45.5	13.7
0.68	52	1250000	38	199000	86.3	0	100	42.2	13.7
0.70	35	1250000	21	199000	86.3	0	100	37.5	13.7
0.72	21	1250000	12	199000	86.3	0	100	36.4	13.7
0.74	13	1250000	10	199000	86.3	0	100	43.5	13.7
0.76	9	1250000	4	199000	86.3	0	100	30.8	13.7
0.78	5	1250000	4	199000	86.3	0	100	44.4	13.7
0.80	4	1250000	1	199000	86.3	0	100	20	13.7
0.82	3	1250000	0	199000	86.3	0	100	0	13.7
0.84	3	1250000	0	199000	86.3	0	100	0	13.7
0.86	0	1250000	0	199000	86.3	0	100	.	13.7

Classification Tables

	Medicare 18-64								
	Correct		Incorrect		Percentages				
Probability Level	Event	Non-Event	Event	Non-Event	Correct	Sensitivity	Specificity	False Pos.	False Neg.
0.02	30581	0	170000	0	15.2	100	0	84.8	.
0.04	30574	210	170000	7	15.3	100	0.1	84.8	3.2
0.06	30376	4616	166000	205	17.4	99.3	2.7	84.5	4.3
0.08	29168	22809	147000	1413	25.9	95.4	13.4	83.5	5.8
0.10	26676	49620	121000	3905	38	87.2	29.1	81.9	7.3
0.12	23525	75027	95248	7056	49.1	76.9	44.1	80.2	8.6
0.14	20015	97734	72541	10566	58.6	65.4	57.4	78.4	9.8
0.16	16446	117000	53278	14135	66.4	53.8	68.7	76.4	10.8
0.18	13432	131000	39254	17149	71.9	43.9	76.9	74.5	11.6
0.20	10748	142000	28676	19833	75.8	35.1	83.2	72.7	12.3
0.22	8706	149000	21398	21875	78.5	28.5	87.4	71.1	12.8
0.24	7045	154000	16003	23536	80.3	23	90.6	69.4	13.2
0.26	5691	158000	12086	24890	81.6	18.6	92.9	68	13.6
0.28	4577	161000	9163	26004	82.5	15	94.6	66.7	13.9
0.30	3711	163000	7033	26870	83.1	12.1	95.9	65.5	14.1
0.32	2976	165000	5382	27605	83.6	9.7	96.8	64.4	14.3
0.34	2396	166000	4090	28185	83.9	7.8	97.6	63.1	14.5
0.36	1978	167000	3157	28603	84.2	6.5	98.1	61.5	14.6
0.38	1568	168000	2427	29013	84.3	5.1	98.6	60.8	14.7
0.40	1266	168000	1851	29315	84.5	4.1	98.9	59.4	14.8
0.42	1026	169000	1436	29555	84.6	3.4	99.2	58.3	14.9
0.44	819	169000	1110	29762	84.6	2.7	99.3	57.5	15
0.46	648	169000	852	29933	84.7	2.1	99.5	56.8	15
0.48	487	170000	646	30094	84.7	1.6	99.6	57	15.1
0.50	373	170000	479	30208	84.7	1.2	99.7	56.2	15.1
0.52	289	170000	372	30292	84.7	0.9	99.8	56.3	15.1
0.54	215	170000	261	30366	84.8	0.7	99.8	54.8	15.2
0.56	154	170000	185	30427	84.8	0.5	99.9	54.6	15.2
0.58	127	170000	136	30454	84.8	0.4	99.9	51.7	15.2
0.60	89	170000	97	30492	84.8	0.3	99.9	52.2	15.2
0.62	66	170000	67	30515	84.8	0.2	100	50.4	15.2
0.64	50	170000	50	30531	84.8	0.2	100	50	15.2
0.66	39	170000	33	30542	84.8	0.1	100	45.8	15.2
0.68	26	170000	25	30555	84.8	0.1	100	49	15.2
0.70	17	170000	18	30564	84.8	0.1	100	51.4	15.2
0.72	10	170000	11	30571	84.8	0	100	52.4	15.2
0.74	8	170000	6	30573	84.8	0	100	42.9	15.2
0.76	6	170000	2	30575	84.8	0	100	25	15.2
0.78	4	170000	2	30577	84.8	0	100	33.3	15.2
0.80	2	170000	1	30579	84.8	0	100	33.3	15.2
0.82	2	170000	1	30579	84.8	0	100	33.3	15.2
0.84	2	170000	1	30579	84.8	0	100	33.3	15.2
0.86	2	170000	1	30579	84.8	0	100	33.3	15.2
0.88	1	170000	1	30580	84.8	0	100	50	15.2
0.90	0	170000	0	30581	84.8	0	100	.	15.2

Hosmer-Lemeshow Tests

	Commercial 18-64				Medicare 65+				Medicare 18-64			
		Readmit				Readmit				Readmit		
Group	Total	Observed	Expected	Difference	Total	Observed	Expected	Difference	Total	Observed	Expected	Difference
1	100,483	2,606	3,177	(0.01)	144,491	7,126	8,695	(0.01)	20,176	1,138	1,332	(0.01)
2	100,499	3,708	4,126	(0.00)	144,513	10,531	11,582	(0.01)	20,087	1,514	1,692	(0.01)
3	100,215	4,591	5,050	(0.00)	144,516	12,923	13,281	(0.00)	20,086	1,929	1,969	(0.00)
4	101,004	5,791	5,998	(0.00)	144,307	15,087	14,887	0.00	20,087	2,207	2,246	(0.00)
5	100,184	6,582	6,815	(0.00)	144,512	17,031	16,685	0.00	20,086	2,639	2,537	0.01
6	100,221	7,825	7,840	(0.00)	144,511	19,547	18,702	0.01	20,086	2,945	2,848	0.00
7	100,221	9,829	9,410	0.00	144,511	22,257	21,131	0.01	20,086	3,367	3,218	0.01
8	100,219	13,351	12,192	0.01	144,516	25,825	24,229	0.01	20,083	3,856	3,694	0.01
9	100,222	17,488	16,680	0.01	144,513	30,012	28,741	0.01	20,085	4,674	4,451	0.01
10	98,925	32,159	32,642	(0.00)	144,739	38,259	40,668	(0.02)	19,994	6,312	6,594	(0.01)
Total	1,002,193	103,930	103,930	0.00	1,445,129	198,598	198,601	(0.00)	200,856	30,581	30,581	(0.00)
			Pr > ChiSq				Pr > ChiSq				Pr > ChiSq	
	$\chi^2_{(8)}$	413.5	<.0001		$\chi^2_{(8)}$	935.9	<.0001		$\chi^2_{(8)}$	110.0	<.0001	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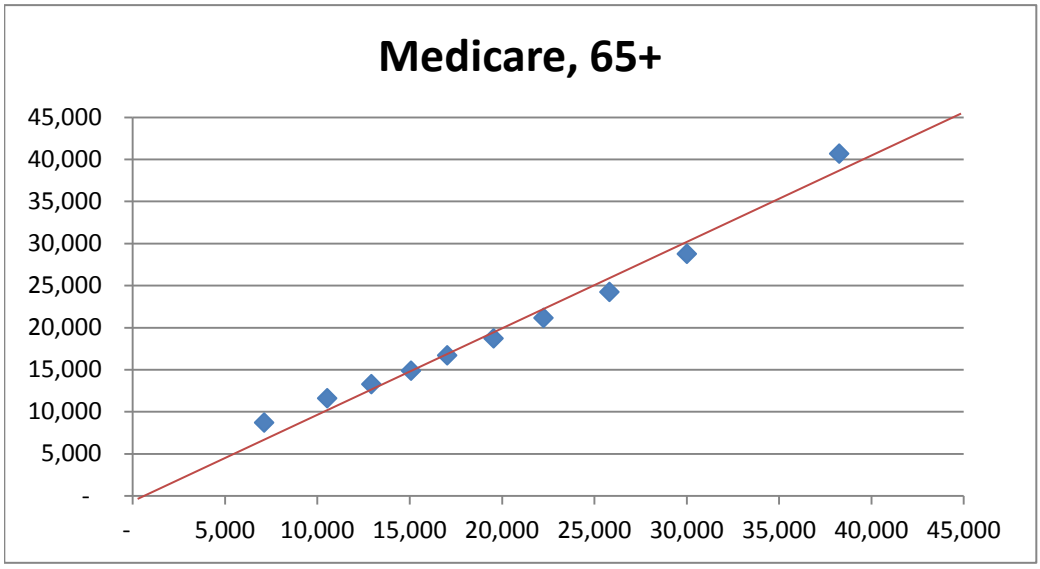
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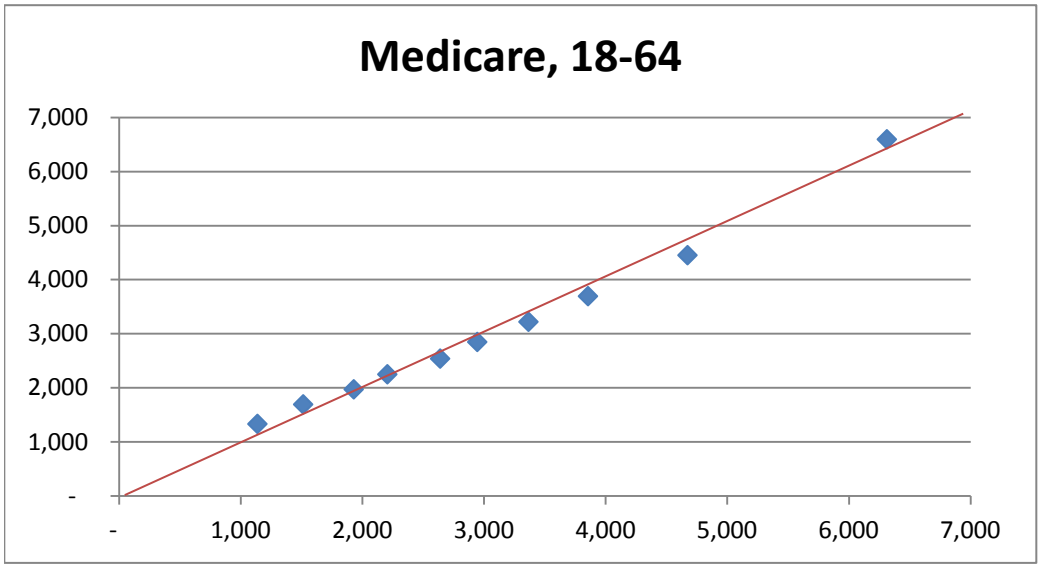
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