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 #: 1653 NQF Project: Population Health: Prevention Project
(for Endorsement Maintenance Review) Original Endorsement Date: Most Recent Endorsement Date:

BRIEF MEASURE INFORMATION

De.1 Measure Title: Pneumococcal Immunization (PPV 23)

Co.1.1 Measure Steward: Centers for Medicare and Medicaid Services

De.2 Brief Description of Measure: Inpatients age 65 years and older and 6-64 years of age who have a high risk condition who are screened for 23-valent Pneumococcal Polysaccharide Vaccine (PPV23)status and vaccinated prior to discharge if indicated.

2a1.1 Numerator Statement: Inpatient discharges who were screened for PPV23 status and received PPV23 prior to discharge if indicated.

2a1.4 Denominator Statement: Inpatient discharges 65 years of age and older and 6-64 years of age who have a high risk condition.

2a1.8 Denominator Exclusions: Excluded patients consist of the following; Patients who expire prior to hospital discharge, patients with an organ transplant during the current hospitalization and pregnant women. See attachments of the ICD-9 and ICD-10 tables for transplants and pregnancy.

1.1 Measure Type: Process
2a1. 25-26 Data Source: Administrative claims, Paper Records
2a1.33 Level of Analysis: Facility, Population : National, Population : Regional, Population : State

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)*: Prevention, Prevention : Immunization, Prevention : Screening
De.5 Cross Cutting Areas (*Check all the areas that apply)*: Population Health

1a.1 Demonstrated High Impact Aspect of Healthcare: Affects large numbers, A leading cause of morbidity/mortality

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

1a.3 Summary of Evidence of High Impact *(Provide epidemiologic or resource use data)*:
Streptococcus pneumonia (SP) remains a major cause of serious invasive illness such as pneumonia, meningitis, and bacteremia, with an estimated 44,000 cases and 5,000 deaths in 2009 among people of all ages in the US (ref #5). The same bacteria is also among the leading causes of relatively less serious and non-invasive illness such as acute otitis media and sinusitis (ref #5). Using various data sources in 2004-2005 and experts' opinion, and based on an analytic model, Huang et al. estimated that approximately 3.9 million cases of SP disease (invasive or non-invasive) occur annually, resulting in 4.9 million outpatient visits, 760,000 emergency department visits, and 2.4 million hospital days, for a total cost of $4.9 billion a year (ref #11). Severe forms of SP disease usually occur in the elderly (>65 years), who also account for a disproportionately higher share of the cost. People with chronic pulmonary disease such as COPD and emphysema, asthma, sickle cell disease, diabetes mellitus, functional or anatomic asplenia, HIV infection or immunocompromising disease, chronic heart disease, and cigarette smokers, are at a higher risk of invasive SP infections.

Huang, S A, Johnson K M, Ray G T, Wroe P, Lieu T, Moore M, Zell E, Linder J, Grijalva C, Metlay J, Finkelstein J A. Burden and cost of US pneumococcal disease 2004 [abstract]. In: IDSA 47th Annual Meeting; 2009 Oct 29- Nov 1; Philadelphia, PA: Session 105-Community Acquired Bacterial Infections including STD's and Mycobacteria on October 31, 2009.

1a.4 Citations for Evidence of High Impact cited in 1a.3: Centers for Disease Control [Internet]. Active Bacterial Core Surveillance (ABCs) Report emerging infectious program network Streptococcus pneumonia, 2009; [updated October 2010; cited 2010 Feb 8]. Available from http://www.cdc.gov/abcs/repots-findings/survreports/spneu09.pdf

Pilishvili T, Lexau C, Farley M, et al. Sustained Reductions in Invasive Pneumococcal Disease in the Era of Conjugate Vaccine. Clin Infect Dis 2010;201:32-41.

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 population-based surveillance study by Pilishvili et al. demonstrated that the expanded use of pneumococcal vaccine was associated with the reduction in invasive pneumococcal disease in a ten-year time period, 1998-2007. The overall incidence of invasive pneumococcal disease declined by 45%, from 24.4 to 13.5 cases per 100,000 population (Pilishvili). Johnstone et al. found that among patients hospitalized for pneumonia, history of prior pneumococcal vaccination was associated with lower mortality or ICU admission compared to patients who were not vaccinated (Johnstone). Dominguez et al. also demonstrated the effectiveness of pneumococcal vaccination for the elderly in case-control study in Catalonia, Spain (Dominguez).

Pilishvili T, Lexau C, Farley M, et al. Sustained Reductions in Invasive Pneumococcal Disease in the Era of Conjugate Vaccine. Clin Infect Dis 2010;201:32-41.

Johnstone J, Marrie TJ, Eurich DT, Majumdar SR. Effects of pneumococcal vaccination in hospitalized adults with community-acquired pneumonia. Arch Intern Med. 2007;167(18):1938-1943.

Dominguez A, Salleras L, Fedson DS, Isquierdo C, Ruiz L, Ciruela P, Fenoll A, and Casal J. Effectiveness of Pneumococcal Vaccination for Elderly People in Catalonia, Spain: A Case-Control Study. Clin Infect Dis 2005; 40:1250-1257.

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.*]

It has long been demonstrated that pneumococcal vaccination is underutilized even among hospitalized. In a 2000 commentary article Fedson et al. emphasized the importance of pneumococcal and influenza vaccination among hospitalized patients (Fedson). Using a large national sample of 107,311 Medicare patients discharged in 1998 and 1999, Bratzler et al. found that these patients were poorly screened for pneumococcal and influenza vaccination. Among patients who were unvaccinated prior to admission, less than one percent received pneumococcal vaccine before hospital discharge (Bratzler). The rates of pneumococcal vaccination screening among hospitalized patients have progressively improved since those early observations. However, as shown on data posted on CMS Hospital Compare website, there is still a sizable number of providers whose rate of pneumococcal vaccination rates are less than optimal (Hausmann). The most recent national CMS rate is 93.3 (3Q2010).

Fedson DS, Houck PM, Bratzler DW. Hospital-based influenza and pneumococcal vaccination: Sutton's Law applied to prevention. Infect Control Hosp Epi. 2002;21:692-699.

Bratzler DW, Houck PM, Jiang H, et al. Failure to vaccinate Medicare inpatients: a missed opportunity. Arch Intern Med 2002;162:2349-2356.

Hausmann LR, Ibrahim SA, Mehrotra A, Nsa W, Bratzler DW, Mor MK, Fine MJ. Racial and ethnic disparities in pneumonia treatment and mortality. Med Care 2009; 47:1009-1017.

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*]

Fedson DS, Houck PM, Bratzler DW. Hospital-based influenza and pneumococcal vaccination: Sutton's Law applied to prevention. Infect Control Hosp Epi. 2002;21:692-699.

Bratzler DW, Houck PM, Jiang H, et al. Failure to vaccinate Medicare inpatients: a missed opportunity. Arch Intern Med 2002;162:2349-2356.

Hausmann LR, Ibrahim SA, Mehrotra A, Nsa W, Bratzler DW, Mor MK, Fine MJ. Racial and ethnic disparities in pneumonia treatment and mortality. Med Care 2009; 47:1009-1017.

1b.4 Summary of Data on Disparities by Population Group: [*For Maintenance –Descriptive statistics for performance results for this measure by population group*]

Using a large national sample of over one million patients discharged with a diagnosis of pneumonia, Hausmann et al. identified disparities across racial/ethnic groups in a number of performance measures (Hausmann). Pneumococcal vaccination/screening rate among white patients was clearly much larger (67.7%) than among African-American (53.8%) and Hispanic (52.9%). Ref #19. These differences remained statistically significant even after adjusting for many other factors through multivariate and multi-level analysis (Hausmann).

Hausmann LR, Ibrahim SA, Mehrotra A, Nsa W, Bratzler DW, Mor MK, Fine MJ. Racial and ethnic disparities in pneumonia treatment and mortality. Med Care 2009; 47:1009-1017.

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*]

Hausmann LR, Ibrahim SA, Mehrotra A, Nsa W, Bratzler DW, Mor MK, Fine MJ. Racial and ethnic disparities in pneumonia treatment and mortality. Med Care 2009; 47:1009-1017.

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 goal of this measure is to reduce the number of individuals infected with the pneumococcus bacteria each year. Vaccination with pneumococcal vaccine is cost saving, i.e., it both reduces medical expenses and improves health for all age groups and dempographic areas.

Pilishvili T, Lexau C, Farley M, et al. Sustained Reductions in Invasive Pneumococcal Disease in the Era of Conjugate Vaccine. Clin Infect Dis 2010;201:32-41.

1c.2-3 Type of Evidence *(Check all that apply)*:
Clinical Practice Guideline, 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 majority of published evidence demonstrates that pneumococcal vaccination saves lives and decreases illness, including invasive pneumococcal disease (i.e., bacteremia, meningitis or infection of other normally sterile sites).

We did not specify ´smokers´ in our population. CMS has collected PN-4, AMI-4 and HF-4, Adult Smoking Cessation Advice, since 2003 and learned many lessons. While it may seem easy to identify ´smokers´, i.e., anyone who has smoked in the last 12 months, this has proven to be quite difficult. After much discussion, it was agreed upon by CMS and the Immunizations TEP to not specify this group.

1c.5 Quantity of Studies in the Body of Evidence *(Total number of studies, not articles)*: According to the Cochrane review, there are 15 randomized controlled trials (RTCs) and 7 non-RCTs (contributing outcomes for culture-confirmed invasive pneumococcal disease [IPD] only).

Moberley S, Holden J, Tatham DP, Andrews RM. Vaccines for preventing pneumococcal infection in adults. Cochrane Database of Systematic Reviews 2008, Issue 1. Art. No.:CD000422. DOI: 10.1002/14651858.CD000422.pub.2

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*): The Cochrane review identified 15 RCTs comparing PPV against placebo which usually represents the strongest experimental design. The combined sample size of these RCTs was relatively high totalling 48,656 participants. A meta-analysis combining these RCTs found strong evidence of PPV efficacy against IPD. However, PPV was not associated with substantial reduction in all-cause mortality. Additionally, the Cochrane also reviewed 7 non-RCT studies involving 62,294 participants which demonstrated evidence of protection against IPD.

Moberley S, Holden J, Tatham DP, Andrews RM. Vaccines for preventing pneumococcal infection in adults. Cochrane Database of Systematic Reviews 2008, Issue 1. Art. No.:CD000422. DOI: 10.1002/14651858.CD000422.pub.2

1c.7 Consistency of Results across Studies *(Summarize the consistency of the magnitude and direction of the effect):* According to Cochrane review, both RTCs and non-RCTs provided strong and consistent evidence of the effectiveness of PPV against IPD.

Moberley S, Holden J, Tatham DP, Andrews RM. Vaccines for preventing pneumococcal infection in adults. Cochrane Database of Systematic Reviews 2008, Issue 1. Art. No.:CD000422. DOI: 10.1002/14651858.CD000422.pub.2

1c.8 Net Benefit *(Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms)*:
Among the 91.5 million US adults aged >or=50 years, 29,500 cases of invasive pneumococcal disease, 502,600 cases of nonbacteremic pneumococcal pneumonia, and 25,400 pneumococcal-related deaths are estimated to occur yearly; annual direct and indirect costs are estimated to total $3.7 billion and $1.8 billion, respectively. Pneumococcal disease remains a substantial burden among older US adults, despite increased coverage with PPV23 and indirect benefits afforded by vaccinating young children. Increasing the rates of pneumococcal vaccination can only have a positive benefit and holds the opportunity to decrease death and financial loss in the United States.

Waycker D, Strutton D, Edlesburg J, et al. Clinical and Econimic Burden of pneumococcal disease in older US adults. Vaccine. 2010 July 12;28(31):4955-60.

1c.9 Grading of Strength/Quality of the Body of Evidence. Has the body of evidence been graded? Yes

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 (I only answered Yes to 1c9 to be able to submit) Neither the Cochrane review nor the ACIP recommendations were graded.

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

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

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

1c.14 Summary of Controversy/Contradictory Evidence: N/A

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

Bratzler DW, Houck PM, Jiang H, et al. Failure to vaccinate Medicare inpatients: a missed opportunity. Arch Intern Med 2002;162:2349-2356.

Centers for Disease Control [Internet]. Active Bacterial Core Surveillance (ABCs) Report emerging infectious program network Streptococcus pneumonia, 2009; [updated October 2010; cited 2010 Feb 8]. Available from http://www.cdc.gov/abcs/repots-findings/survreports/spneu09.pdf

Centers for Disease Control and Prevention. Prevention of Pneumococcal Disease among Infants and Children—Use of 13-Valent Pneumococcal Conjugate Vaccine and 23-Valent Pneumococcal Polysaccharide Vaccine. MMWR December 10, 2010; 59(RR-11):1-18.

Fedson DS, Houck PM, Bratzler DW. Hospital-based influenza and pneumococcal vaccination: Sutton's Law applied to prevention. Infect Control Hosp Epi. 2002;21:692-699.

Fine MF, Smith MAA, Carson CA, Meffe P, Sankery SS, Weissfeld LA, Detsky AS, Kapoor WN. Efficacy of pneumococcal vaccination in adults: a meta-analysis of randomized controlled trials. Arch Intern Med. 1994 (December);154:2666-2677.

Gardner P, Schaffner W. Immunization of adults. N Engl J Med 1993;328:1252-8.

Huang, S A, Johnson K M, Ray G T, Wroe P, Lieu T, Moore M, Zell E, Linder J, Grijalva C, Metlay J, Finkelstein J A. Burden and cost of US pneumococcal disease 2004 [abstract]. In: IDSA 47th Annual Meeting; 2009 Oct 29- Nov 1; Philadelphia, PA: Session 105-Community Acquired Bacterial Infections including STD's and Mycobacteria on October 31, 2009.

Johnstone J, Marrie TJ, Eurich DT, Majumdar SR. Effects of pneumococcal vaccination in hospitalized adults with community-acquired pneumonia. Arch Intern Med. 2007;167(18):1938-1943.

Kissam S, Gifford DR, Patry G, et al. Is signed consent for influenza or pneumococcal polysaccharide vaccination required? Arch Intern Med 2004;164:13-16.

Pilishvili T, Lexau C, Farley M, et al. Sustained Reductions in Invasive Pneumococcal Disease in the Era of Conjugate Vaccine. Clin Infect Dis 2010;201:32-41.

Sisk JE. Moskowitz AJ, Whang W, et al. Cost effectiveness of vaccination against pneumococcal bacteremia among elderly people. JAMA. 1997;278:1333-1339.

Williams WW, Hickson MA, Kane MA, Kendal AP, Spika JS, Hinman AR. Immunization policies and vaccine coverage among adults: the risk for missed opportunities. Ann Intern Med 1988;108:616-25.

1c.16 Quote verbatim, the specific guideline recommendation *(Including guideline # and/or page #)*:
Recommendations from the Advisory Committee on Immunization Practices (ACIP) for prevention of invasive pneumococcal disease (IPD) (i.e., bacteremia, meningitis, or infection of other normally sterile sites [2]) through use of the 23-valent pneumococcal polysaccharide vaccine (PPSV23) among all adults aged =65 years and greater and those adults aged 19--64 years with underlying medical conditions that put them at greater risk for serious pneumococcal infection.
ACIP approved new and revised recommendations for the use of PPSV23 to prevent IPD among adults aged <65 years. ACIP concluded that asthma is an independent risk factor for IPD and should be included in the group of chronic pulmonary diseases (e.g., COPD and emphysema) that are indications for PPSV23. Centers for Disease Control. Updated recommendations for prevention of invasive pneumococcal disease among adults using the 23-valent pneumococcal polysaccharide vaccine (PPSV23). MMWR. September 3, 2010; 59 (34): page 1

A. Pneumococcal Conjugate Vaccine to Prevent Pneumococcal Disease
Eligible: Children 6 through 18 years of age who are at increased risk for invasive pneumococcoal disease because of anatomic or functional asplenia, including sickle cell disease, HIV-infection or other immunocompromising condition, Table 1. Underlying medical conditions that are indications for pneumococcal vaccination among children: Immunocompetent persons,Chronic heart disease, Chronic lung disease, Diabetes mellitus, Functional or anatomic asplenia, Sickle cell disease (SCD) and other hemoglobinopathies Congenital or acquired asplenia, or splenic dysfunction, Immunocompromised, HIV infection,
Chronic renal failure and nephrotic syndrome, or solid organ transplantation

Resolution No. 06/10-1
ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES
VACCINES FOR CHILDREN PROGRAM
VACCINES TO PREVENT PNEUMOCOCCAL DISEASE

1c.17 Clinical Practice Guideline Citation: Centers for Disease Control. Updated recommendations for prevention of invasive pneumococcal disease among adults using the 23-valent pneumococcal polysaccharide vaccine (PPSV23). MMWR. September 3, 2010; 59 (34): 1102-1106.

Resolution No. 06/10-1
ADVISORY COMMITTEE ON IMMUNIZATION PRACTICES
VACCINES FOR CHILDREN PROGRAM
VACCINES TO PREVENT PNEUMOCOCCAL DISEASE

1c.18 National Guideline Clearinghouse or other URL: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5934a3.htm and http://www.cdc.gov/vaccines/programs/vfc/downloads/resolutions/0610-pneumo-508.pdf

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: The ACIP Recommendations are not graded

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

1c.24 Rationale for Using this Guideline Over Others: There are other guidelines that make similiar recommendations regarding vaccination for PPV23. However, the CDC guideline is devoted entirely to pneumococcal prevention and control. Most other guidleines reference the CDC guideline in regards to pneumococcal vaccination.

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: High 1c.26 Quality: High1c.27 Consistency: High

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? Yes

S.2 If yes, provide web page URL:
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1141662756099

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)*:
Inpatient discharges who were screened for PPV23 status and received PPV23 prior to discharge if indicated.

2a1.2 Numerator Time Window *(The time period in which the target process, condition, event, or outcome is eligible for inclusion)*:
The time period included in this measure is the arrival time through discharge from the hospital during the same stay.

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*:
The following patients are included in the numerator; Patients who received PPV23 during this hospitalization, Patients who receive PPV23 anytime in the past, Patients who were offered and declined the PPV during this hospitalization and Patients who have an allergy/sensitivity to the vaccine or the vaccine is not likely to be effective due to the following; hypersensitivity to componant(s) of the vaccine, bone marrow transplants within the past 12 months, receipt of chemotherapy or radiation during this hospitalization or less thn 2 weeks prior to this hospitalization or received the shingles vaccine (Zostavax) within the last 4 weeks prior to this

hospitalization.

2a1.4 Denominator Statement *(Brief, narrative description of the target population being measured)*:
Inpatient discharges 65 years of age and older and 6-64 years of age who have a high risk condition.

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

2a1.6 Denominator Time Window *(The time period in which cases are eligible for inclusion)*:
The time period included in this measure is the arrival time through discharge from the hospital during the same stay.

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)*:
All patients 65 years of age and older and 6-64 years of age who have a high risk condition (diabetes, nephric syndrome, ESRD, CHF, COPD, HIV or asplenia, see below for codes) are included in the denominator except the following; patients less thn 6 years of age, patients who expire prior to hospital discharge, patients who are pregnant and patients with an organ transplant during the current hospitalization. See attachments of the ICD-9 and ICD-10 tables for the high risk conditions.

The following data elements are needed for the denominator; Admission Date, Birthdate, Discharge Disposition, ICD-9-CM Other Diagnosis Codes, ICD-9-CM Principal Diagnosis Codes (or ICD-10-CM Principal or Other depending)

2a1.8 Denominator Exclusions *(Brief narrative description of exclusions from the target population)*:
Excluded patients consist of the following; Patients who expire prior to hospital discharge, patients with an organ transplant during the current hospitalization and pregnant women. See attachments of the ICD-9 and ICD-10 tables for transplants and pregnancy.

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)*:
Excluded patients consist of the following; Patients who expire prior to hospital discharge and patients with an organ transplant during the current hospitalization. See attachments of the ICD-9 and ICD-10 tables for Transplants.

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)*:
IMM-1 is stratified into the following;
IMM-1a (overall rate) Pneumococcal Immunization (PPV23)) for Patients 65 years of age and older, and 6-64 years of age who have a high risk condition.
IMM-1b Pneumococcal Immunization (PPV23) 65 years of age and older

IMM-1c Pneumococcal Immunization (PPV23) 6-64 years of age who have a high risk condition

Each of these strata are further stratified via the allowable values which are as follows;
1. Patients who received PPV23 during this hospitalization = PASS
2. Patients who receive PPV23 anytime in the past = PASS
3. Patients who were offered and declined the PPV during this hospitalization = PASS
4. Patients who have an allergy/sensitivity to the vaccine or the vaccine is not likely to be effective due to the following; hypersensitivity to componant(s) of the vaccine, bone marrow transplants within the past 12 months, receipt of chemotherapy or radiation during this hospitalization or less thn 2 weeks prior to this hospitalization or received the shingles vaccine (Zostavax) within the last 4 weeks prior to this hospitalization. = PASS
5. None of the above/Not documented/UTD = FAILURE

2a1.11 Risk Adjustment Type *(Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in 2a1.13)*: No risk adjustment or risk stratification 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.)*:
N/A

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:

2a1.17-18. Type of Score: Rate/proportion

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 = Higher 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.)*:
IMM-1a: Pneumococcal Immunization (PPV23) 65 years of age and older, and 6-64 years of age who have a high risk condition–overall rate
IMM-1b: Pneumococcal Immunization (PPV23) for Patients 65 years of age and older
IMM-1c: Pneumococcal Immunization (PPV23) for Patients 6 to 64 years of age with High Risk Conditions
Numerator: Inpatient discharges who were screened for PPV23 status and received PPV23 prior to discharge, if indicated.

Denominator: Inpatient discharges 65 years of age and older, and 6-64 years of age who have a high risk condition.

Variable Key: Patient Age

Stratification Table:

Measure ID	Stratified Measure Name	Patient Age
IMM-1a	Pneumococcal Immunization-Overall Rate	= 6 years
IMM-1b	Pneumococcal Immunization for patients 65 years and older	= 65 years
IMM-1c	Pneumococcal Immunization for patient 6-64 years with high risk condition	= 6 and < 65

1. Start processing. Run cases that are included in the Global Initial Patient Population and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure.

2. Calculate Patient Age. Patient Age, in years, is equal to the Admission Date minus the Birthdate. Use the month and day portion of admission date and Birthdate to yield the most accurate age. Only cases with valid Admission Date and Birthdate will pass the front end edits into the measure specific algorithms.

3. Check Patient Age
a. If the Patient Age is less than 6 years old, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population for the overall measure rate (IMM-1a). Continue processing and proceed to initialize the Measure Category Assignment for each strata measure (1b-1c).
b. If the Patient Age is greater than or equal to 6 years old, continue processing and proceed to ICD-9-CM Principal or Other Diagnosis Codes.

4. Check ICD-9-CM Principal or Other Diagnosis Codes
a. If at least one of ICD-9-CM Principal or Other Diagnosis Codes is on Table 12.3 or 5.15, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population for the overall measure rate (IMM-1a). Continue processing and proceed to initialize the Measure Category Assignment for each strata measure (1b-1c).
b. If none of the ICD-9-CM Principal or Other Diagnosis Codes is on Table 12.3 or 5.15, continue processing and check Discharge Disposition.

5. Check Discharge Disposition
a. If Discharge Disposition is missing, the case will proceed to a Measure Category Assignment of X and will be rejected for the overall measure rate (IMM-1a). Continue processing and proceed to initialize the Measure Category Assignment for each strata measure (1b-1c).
b. If Discharge Disposition equals 6, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population for the overall measure rate (IMM-1a). Continue processing and proceed to initialize the Measure Category Assignment for each strata measure (1b-1c).
c. If Discharge Disposition equals 1, 2, 3, 4, 5, 7, or 8 continue processing and proceed to recheck Patient Age.
6. Recheck Patient Age
a. If the Patient Age is greater than or equal to 65 years, continue processing and proceed to Pneumococcal Vaccination (PPV23) Status.
b. If the Patient Age is greater than or equal to 6 years and less than 65 years, continue processing and proceed to recheck ICD-9-CM Principal or Other Diagnosis Codes.

7. Recheck ICD-9-CM Principal or Other Diagnosis Codes
a. If at least one of ICD-9-CM Principal or Other Diagnosis Codes is on Table 12.1, 12.2, 12.5, 12.6, 12.7, 12.8, or 2.1, continue processing and proceed to Pneumococcal Vaccination (PPV23) Status.
b. If none of the ICD-9-CM Principal or Other Diagnosis Codes is on Table 12.1, 12.2, 12.5, 12.6, 12.7, 12.8, or 2.1, continue processing and proceed to recheck Patient Age.

8. Recheck Patient Age
a. If the Patient Age is less than 19 years, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population for the overall measure rate (IMM-1a). Continue processing and proceed to initialize the Measure Category Assignment for each strata measure (1b-1c).
b. If the Patient Age is greater than or equal to 19 years old, continue processing and proceed to recheck ICD-9-CM Principal or Other Diagnosis Codes.

9. Recheck ICD-9-CM Principal or Other Diagnosis Codes
a. If none of the ICD-9-CM Principal or Other Diagnosis Codes is on Table 12.4, the case will proceed to a Measure Category Assignment of B and will not be in the Measure Population for the overall measure rate (IMM-1a). Continue processing and proceed to initialize the Measure Category Assignment for each strata measure (1b-1c).
b. If at least one of ICD-9-CM Principal or Other Diagnosis Codes is on Table 12.4, continue processing and proceed to Pneumococcal Vaccination (PPV23) Status.

10. Check Pneumococcal Vaccination (PPV23) Status
a. If Pneumococcal Vaccination (PPV23) Status is missing, the case will proceed to a Measure Category Assignment of X and will be rejected for the overall measure rate (IMM-1a). Continue processing and proceed to initialize the Measure Category Assignment for each strata measure (1b-1c).
b. If Pneumococcal Vaccination (PPV23) Status equals 5, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population for the overall measure rate (IMM-1a). Continue processing and proceed to initialize the Measure Category Assignment for each strata measure (1b-1c).
c. If Pneumococcal Vaccination (PPV23) Status equals 1, 2, 3, or 4, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population for the overall measure rate (IMM-1a). Continue processing and proceed to initialize the Measure Category Assignment for each strata measure (1b-1c).
11. Initialize Measure Category Assignment for each strata measure (1b-1c) to Measure Category Assignment of B. Do not change the Measure Category Assignment that was already calculated for the overall measure (IMM-1a). The rest of the algorithm will reset the appropriate Measure Category Assignment to be equal to the overall rate's (IMM-1a) Measure Category Assignment.

12. Check Overall Rate Category Assignment
a. If the Overall Rate Category Assignment equals B or X, the case will proceed to Measure Category Assignment of B and will not be in the Measure Population for the each strata measure (1b-1c). Stop processing.
b. If Overall Rate Category Assignment equals D or E, continue processing and proceed to recheck Patient Age.

13. Recheck Patient Age
a. If the Patient Age is greater than or equal to 65 years, set the Measure Category Assignment for strata measure 1b. The Measure Category Assignment of IMM-1b = the Measure Category Assignment of measure IMM-1a. Stop Processing.
b. If the Patient Age is greater than or equal to 6 years and less than 65 years, set the Measure Category Assignment for strata measure 1c. The Measure Category Assignment of IMM-1c = the Measure Category Assignment of measure IMM-1a. Stop Processing.

2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:
Attachment
2zzj_IMM1.doc

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):
Sampling vs Not Sampling
Hospitals whose Initial Patient Population size is less than the minimum number of cases per quarter/month for the measure cannot sample.

Population and Sampling
An "Initial Patient Population" refers to all patients (Medicare and non-Medicare) who share a common set of specified, administratively derived data elements, with a length of stay less than or equal to 120 days (Admission Date minus Discharge Date less than or equal to 120 days). Hospitals that choose to sample have the option of sampling quarterly or sampling monthly. The sample size requirements for each of these options are described in turn. Hospitals need to use the next highest whole number when determining their required sample size.

Hospitals can use either the simple random sampling or systematic random sampling methods and the sampling techniques need to be applied consistently within a quarter.
• Simple random sampling - selecting a sample size (n) from a population of size (N) in such a way that every case has the same chance of being selected.
• Systematic random sampling - selecting every kth record from a population of size N in such a way that a sample size of n is obtained, where k is less than or equal to N/n. The first sample record (i.e., the starting point) must be randomly selected before taking every kth record. This is a two-step process:
1. Randomly select the starting point by choosing a number between one and k using a table of random numbers or a computer-generated random number; and
2. Then select every kth record thereafter until the selection of the sample size is completed.

Sample Size Requirements
Quarterly Sample Size
Hospital's Measure Average Quarterly
Initial Patient Population "N" Minimum Required
Sample Size
"n"
> 1551 311
391 - 1550 20% of the Initial Patient Population
78 - 390 78
6 - 77 No sampling; 100% of the Initial Patient Population is required
0 - 5 Submission of patient level data is encouraged but not required:
CMS: if submission occurs, 1 – 5 cases of the Initial Patient Population may be submitted

The Joint Commission: if submission occurs, 100% Initial Patient Population required

Monthly Sample Size
Hospital's Measure Average Monthly
Initial Patient Population
"N" Minimum Required
Sample Size
"n"
>516 104
131-515 20% of the Initial Patient Population
26-130 26
< 26 No sampling; 100% of the Initial Patient Population is required

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

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.*): Patient medical record can be collected using the CMS Abstraction & Reporting Tool (CART).

2a1.27-29 Data Source/data Collection Instrument Reference Web Page URL or Attachment: URL
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier3&cid=1135267770141

2a1.30-32 Data Dictionary/Code Table Web Page URL or Attachment:
URL
http://www.qualitynet.org/dcs/ContentServer?c=Page&pagename=QnetPublic%2FPage%2FQnetTier2&cid=1141662756099
N/A At the above URL see Appendix A, Tables 12.1, 12.2, 12.3, 12.5, 12.6, 12.7, 12.8, 12.10 and 2.1 ICD-9 codes. ICD-10s upon request.

2a1.33 Level of Analysis (*Check the levels of analysis for which the measure is specified and tested)*: Facility, Population : National, Population : Regional, Population : State

2a1.34-35 Care Setting *(Check all the settings for which the measure is specified and tested)*: 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)*:
Since 2005, CMS has conducted on a regular basis through its contractor " the Clinical Data Abstraction Center (CDAC)" various reliability tests of data elements involved in the assessment of several performance, including Pneumococcal Immunization for patients 65 years of age and older. Each month, CDAC randomly selects a national sample of 80 cases that had been previously abstracted by hospitals and submitted to the Clinical Data Warehouse. The medical charts for these 80 cases are re-abstracted by CDAC abstractors and compared to the data submitted by the hospitals. The annual sample amounts to 960 cases (12 * 80 per month).

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:
The CDAC creates a monthly Project Level Accuracy Report. The report examined agreement between assessors (reliability). Accuracy is calculated as the raw agreement rate of both the original abstractor and the reabstractor with the adjudicated gold standard data. The overall accuracy is the aggregate agreement rate (adjusted for computer mismatches) across all data elements in all cases in the sample.

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
The most current accuracy result (May, 2011) showed a high agreement rate for all data elements for Pneumococcal Immunization for inpatient discharges. For example, the agreement rates for two major data elements, pneumonia principal diagnosis code and pneumococcal vaccination status, were 98.61% and 97.56%, respectively.

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 specifications are based on the ACIP recommendations.

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)*:
This measure is similar to an existing measure that has been implemented on a national level over the last ten years, starting from a CMS national project in 1998-2001. The existing database for hospitalized patients in the last six years comprises almost the universe of patients hospitalized for pneumonia in the United States, approximately one million claims a year since 2005. Potential underrepresentation due to sampling has not been an issue.

2b2.2 Analytic Method *(Describe method of validity testing and rationale; if face validity, describe systematic assessment)*:
This measure has face validity. A group of national experts reviewed the measure and evidence and all agreed that high measure scores will relate to higher quality.
Regarding the individual data elements, the abstractors have direct access to the medical record, which is the most authoritative source to extract the required information. The definitions of individual data elements have been constantly revised and clarified to avoid ambiguity. They are compiled in a "Manual Specification" document that is posted to various internet websites (CMS, Joint Commission, etc.). After ten years of clarification the likelihood of systematic error when assessing individual data elements should be minimal.

Regarding the overall assessment of the measure using a series of exclusion and inclusion criteria to estimate the denominator (eligible patients) and the numerator (those who received the recommended care), an elaborate analytic algorithm has been developed and repeatedly tested over the past five or six years. On a quarterly basis, the national database is analyzed by two independent teams of statisticians/programmers who compare their results against each other.

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)*:
As indicated earlier, the national database of the existing similar measure is analyzed by two independent teams of statisticians/programmers (located at two different sites) and their results are validated against each other. The matching rate has been 100% over the last five years. A very tiny number of mismatches that were observed on occasion were due to accidental programming glitches not as a result of the measure algorithm itself; and they were always promptly corrected to reach the perfect 100% matching rate between the two independent teams of analysts.
For each quarter, a dedicated contractor with CMS randomly selects five submitted cases from each hospital for re-abstraction. This process was started in 2003. For the last 6 years, the validation score for the data elements were consistently over 90. The validation score for 2010 was 94.3.

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)*:

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)*:
This measure does not require any risk adjustment.

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:
N/A

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)*:
N/A

2b4.4 If outcome or resource use measure is not risk adjusted, provide rationale and analyses to justify lack of adjustment: This is a process measure and not an outcome measure which may require risk adjustment.

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)*:
We have not performed any analysis at this time. From past experience we usually use our professional/clinical judgement to determine meaningful differences in performance. Once measure results are obtained, analysts will review any variations in performance quarterly. Variations are discussed with subject matter experts and medical director to determine cause.

2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:
Our plan will be to determine the realistic achievable national benchmark/target rate. Those providers whose rates are below the national achievable benchmark would be considered to have less than optimal performance. The national benchmark will be determined using the ABC methodolgy developed by the University of Alabama. Because this analysis are usually based on an extremely large sample size (hundreds of thousands), the conventional statistical significance (P-value < 0.05)is usually not relevant in our interpretation of the data.

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)*:
No results at this time.

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)*:
Not applicable because the plan at this time is to use only one data source: the direct abstraction of medical records.

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)*: N/A

2c.2 If disparities have been reported/identified (e.g., in 1b), but measure is not specified to detect disparities, please explain:
We have looked at disparities in PN-2 We used SAS procedure Glimmix to account for the correlation/clustering effect of patients within hospitals. Random intercepts were used for each hospital. The model included only race-related dummy variables. The between-hospital effects were estimated by including hospital proportion of patients for each minority group in the model. For details of the methodology see Hausmann et al. "Between-hospital and within-hospital racial and ethnic disparities in community-acquired pneumonia treatment and mortality." Medical Care 2009; 47(9): 1009-1017. We excluded patients whose race/ethnicity was missing or "unable to determine" in the the dataset.

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)*: Payment Program, Public Reporting, Quality Improvement (Internal to the specific organization), 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, Regulatory and Accreditation Programs, 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.*]
Currently, PN-2, which is this measure with a smaller population, i.e., ´patients 65 and older with a diagnosis of PN´ is included in the Centers for Medicare and Medicaid (CMS) Hospital Value-based Purchasing Program which is a nation-wide program. In order for hospitals to receive thier Annual Payment Update from CMS, they agree to report thier data and have their measure rates reported on Hospital Compare. This expanded measure will be incuded in this same program beginning 1/1/2012. Details regarding this program can be found at the following URL, https://www.cms.gov/HospitalQualityInits/08_HospitalRHQDAPU.asp.

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: PN-2, the

current measure with a smaller population, i.e., ´patients 65 and older with a diagnosis of PN´ has been reported publicly on Hospital Compare since fourth quarter 2003. CMS conducts annual consumer testing of the language on Hospital Compare to ensure clarity and ease of interpretation of the information posted publicly.

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): Currently, PN-2, which is this measure with a smaller population, i.e., ´patients 65 and older with a diagnosis of PN´ is included in the Centers for Medicare and Medicaid (CMS) Hospital Value-based Purchasing Program which is a nation-wide program. In order for hospitals to receive thier Annual Payment Update from CMS, they agree to report thier data and have their measure rates reported on Hospital Compare. This expanded measure will be incuded in this same program beginning 1/1/2012. Details regarding this program can be found at the following URL, https://www.cms.gov/HospitalQualityInits/08_HospitalRHQDAPU.asp.
The current measure, PN-2, is currently used in the accreditation process for The Joint Commission. This expanded measure will used in the same way.

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*].
Currently, PN-2, which is this measure with a smaller population, i.e., ´patients 65 and older with a diagnosis of PN´ is included in the Centers for Medicare and Medicaid (CMS) Hospital Value-based Purchasing Program which is a nation-wide quality improvement program. In order for hospitals to receive thier Annual Payment Update from CMS, they agree to report thier data and have their measure rates reported on Hospital Compare. In order for hospitals to receive thier Annual Payment Update from CMS, they agree to report thier data and have their measure rates reported on Hospital Compare. This expanded measure will be incuded in this same program beginning 1/1/2012. Details regarding this program can be found at the following URL, https://www.cms.gov/HospitalQualityInits/08_HospitalRHQDAPU.asp.

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:
PN-2, the current measure with a smaller population, i.e., ´patients 65 and older with a diagnosis of PN´ has been reported publicly on Hospital Compare since fourth quarter 2003. CMS conducts annual consumer testing of the language on Hospital Compare to ensure clarity and ease of interpretation of the information posted publicly. The higher the score the better a facility is doing. If a facility is not scoring as high as they would like to score, they can see where they have failures, thus knowing where improvement is needed.

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), Abstracted from a record by someone other than person obtaining original information (e.g., chart abstraction for quality measure or registry)

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)*: Some data elements are in 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:
Since the instructions for obtaining the data are written by the measure developers, interpretation of data elements will always be a factor, as they are interpreted by over 4,000 hospitals across the nation. However, since basically the same data element has been used by PN-2 since 1999, we feel the data element at this point in time is in very good shape.
No unintended consequences have been identified for PN-2 or this new measure.

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

A.2 Please check if either of the following apply (*regarding proprietary measures*):
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)*:
Specifications (including codes and data elements) are modified every 6 months according to feedback received from clinicians and hospital staff collecting data for PN-2. Data is available in the medical record and there are no feasability or implementation issues identified.
In the past we learned that missing data was an issue regarding the integrity of our data results. The algorithms were altered to address this issue. If a case is submitted to the CMS Clinical Data Warehouse that has any data elements missing, they are rejected, i.e., sent back to the submitter to give them the opportunity to complete the missing element.

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:
0043 : Pneumonia vaccination status for older adults
0044 : Pneumonia Vaccination
0150 : Pneumococcal vaccination
0433 : Pneumococcal Vaccination of Nursing Home/ Skilled Nursing Facility Residents
0525 : Pneumococcal Polysaccharide Vaccine (PPV) Ever Received

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:
There are some differences in Exclusions and Inclusions specific to the facility, i.e., Nursing Home/Skilled Nursing Facility vs. Acute

Care Hospital such as age, pregnancy, organ transplant during hospitlaization. There are also some age differences, as there our measure follows the latest ACIP recommendations and some of the others have not yet updated their measures.

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)*:
The current measure, PN-2, that this measure is expanding upon is the only inpatient measure that looks at pneumococcal vaccination status.

Most of the other measures focus only on patients 65 and older and do not look at patients under 65 with high risk conditions.

CONTACT INFORMATION

Co.1 Measure Steward (Intellectual Property Owner): Centers for Medicare and Medicaid Services, 7500 Security Boulevard, Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850

Co.2 Point of Contact: Kristie, Baus, MS, RN, kristie.baus@cms.hhs.gov, 410-786-8161-

Co.3 Measure Developer if different from Measure Steward: Centers for Medicare and Medicaid Services, 7500 Security Boulevard, Mail Stop S3-01-02, Baltimore, Maryland, 21244-1850

Co.4 Point of Contact: Kristie, Baus, MS, RN, kristie.baus@cms.hhs.gov, 410-786-8161-

Co.5 Submitter: Joanie, McPhetridge, M.Ed, jmcphetridge@ofmq.com, 405-302-3293-, Oklahoma Foundation for Medical Quality

Co.6 Additional organizations that sponsored/participated in measure development:
The Joint Commission, Centers for Disease Control and Prevention and the New York State Department of Health provided input regarding the development of this measure.

Co.7 Public Contact: Kristie, Baus, MS, RN, kristie.baus@cms.hhs.gov, 410-786-8161-, Centers for Medicare and Medicaid Services

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.
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After the measures were expanded outside of patients with a diagnosis of pneumonia the Technical Expert Panel (TEP)was formed. The TEP provided guidance and approval for the measure drafts as well as the product submitted today.

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: These measures were adapted and expanded from the CMS Pneumococcal Vaccination measure, NQF 0150. NQF 0150 only included patients with pneumonia. This measure was expanded to include all patients at risk for pneumococcal disease.

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.3 Year the measure was first released: 2011
Ad.4 Month and Year of most recent revision:
Ad.5 What is your frequency for review/update of this measure? Every 6 months
Ad.6 When is the next scheduled review/update for this measure? 09, 2011

Ad.7 Copyright statement:

Ad.8 Disclaimers:

Ad.9 Additional Information/Comments:

Date of Submission (*MM/DD/YY*): 07/07/2011