NATIONAL QUALITY FORUM

Measure Evaluation 4.1
December 2009

This form contains the measure information submitted by stewards. Blank fields indicate no information was provided. Attachments also may have been submitted and are provided to reviewers. The subcriteria and most of the footnotes from the evaluation criteria are provided in Word comments within the form and will appear if your cursor is over the highlighted area. Hyperlinks to the evaluation criteria and ratings are provided in each section.

TAP/Workgroup (if utilized)**:** Complete all yellow highlighted areas of the form. Evaluate the extent to which each subcriterion is met. Based on your evaluation, summarize the strengths and weaknesses in each section.

Note: *If there is no TAP or workgroup, the SC also evaluates the subcriteria (yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the subcriteria, noting any areas of disagreement; then evaluate the extent to which each major criterion is met; and finally, indicate your recommendation for the endorsement. Provide the rationale for your ratings.

Evaluation ratings of the extent to which the criteria are met
C = Completely (unquestionably demonstrated to meet the criterion)
P = Partially (demonstrated to partially meet the criterion)
M = Minimally (addressed BUT demonstrated to only minimally meet the criterion)
N = Not at all (NOT addressed; OR incorrectly addressed; OR demonstrated to NOT meet the criterion)
NA = Not applicable (only an option for a few subcriteria as indicated)

(for NQF staff use) **NQF Review #:** OT3-027-10 **NQF Project:** Patient Outcomes Measures: Child Health and Mental Health (Phase III)
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Ventriculoperitoneal (VP) shunt malfunction rate in children
De.2 **Brief description of measure***:* This measure is a 30-day malfunction rate for hospitals that perform cerebrospinal ventriculoperitoneal shunt operations in children between the ages of 0 and 18 years.
1.1-2 **Type of Measure:** Outcome De.3 **If included in a composite or paired with another measure, please identify composite or paired measure**
De.4 **National Priority Partners Priority Area:** Safety De.5 **IOM Quality Domain**: Effectiveness De.6 **Consumer Care Need:** Getting better

CONDITIONS FOR CONSIDERATION BY NQF	
Four conditions must be met before proposed measures may be considered and evaluated for suitability as voluntary consensus standards:	**NQF Staff**
A. The measure is in the public domain or an intellectual property (measure steward agreement) is signed. *Public domain only applies to governmental organizations. All non-government organizations must sign a measure steward agreement even if measures are made publicly and freely available.* A.1 **Do you attest that the measure steward holds intellectual property rights to the measure and the right to use aspects of the measure owned by another entity (e.g., risk model, code set)?** Yes A.2 **Indicate if Proprietary Measure** (*as defined in measure steward agreement*)**:** A.3 **Measure Steward Agreement:** Agreement will be signed and submitted prior to or at the time of measure submission A.4 **Measure Steward Agreement attached:** NQF Measure Stewards-634006439520931084.pdf	**A** **Y**☐ **N**☐
B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and	**B**

update the measure on a schedule that is commensurate with the rate of clinical innovation, but at least every 3 years. Yes, information provided in contact section	Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** Public reporting, Internal quality improvement	C Y☐ N☐
D. The requested measure submission information is complete. Generally, measures should be fully developed and tested so that all the evaluation criteria have been addressed and information needed to evaluate the measure is provided. Measures that have not been tested are only potentially eligible for a time-limited endorsement and in that case, measure owners must verify that testing will be completed within 12 months of endorsement. D.1**Testing:** No, testing will be completed within 12 months D.2 **Have NQF-endorsed measures been reviewed to identify if there are similar or related measures?** Yes	D Y☐ N☐
(for NQF staff use**)** **Have all conditions for consideration been met?** **Staff Notes to Steward** (*if submission returned*)**:**	**Met** Y☐ N☐
Staff Notes to Reviewers (*issues or questions regarding any criteria*)**:**	
Staff Reviewer Name(s):	

TAP/Workgroup Reviewer Name:	
Steering Committee Reviewer Name:	
1. IMPORTANCE TO MEASURE AND REPORT	
Extent to which the specific measure focus is important to making significant gains in health care quality (safety, timeliness, effectiveness, efficiency, equity, patient-centeredness) and improving health outcomes for a specific high impact aspect of healthcare where there is variation in or overall poor performance. *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**	Eval Rating
(for NQF staff use) Specific NPP goal:	
1a.1 Demonstrated High Impact Aspect of Healthcare: Leading cause of morbidity/mortality **1a.2** **1a.3 Summary of Evidence of High Impact:** Children who require on-going cerebrospinal fluid diversion with a ventricular shunt have a major risk of morbidity and mortality. These children are experiencing high rates of life-threatening shunt malfunction. **1a.4 Citations for Evidence of High Impact:** 1. A multi-institutional, 5-year analysis of initial and multiple ventricular shunt revisions in children. Berry JG, Hall MA, Sharma V, Goumnerova L, Slonim AD, Shah SS. Neurosurgery. 2008 Feb;62(2):445-53; discussion 453-4. 2. A multicenter study of factors influencing cerebrospinal fluid shunt survival in infants and children. Shah SS, Hall M, Slonim AD, Hornig GW, Berry JG, Sharma V. Neurosurgery. 2008 May;62(5):1095-102; discussion 1102-3. 3. Infection rates following initial cerebrospinal fluid shunt placement across pediatric hospitals in the United States. Clinical article. Simon TD, Hall M, Riva-Cambrin J, Albert JE, Jeffries HE, Lafleur B, Dean JM, Kestle JR; Hydrocephalus Clinical Research Network. J Neurosurg Pediatr. 2009 Aug;4(2):156-65.	**1a** C☐ P☐ M☐ N☐
1b. Opportunity for Improvement	**1b** C☐

1b.1 Benefits (improvements in quality) envisioned by use of this measure: Ventricular shunt malfunction places children at risk for potentially irreversible neurologic system deficits and death if not treated promptly. Shunt malfunction treatment is associated with the need for hospitalization and re-operation. The hospitalization itself is disruptive to the child and family, which may lead to impaired quality of life. The need for re-operation places the child at additional risk for central nervous system infection and other adverse events.

1b.2 Summary of data demonstrating performance gap (variation or overall poor performance) across providers:
Despite advances in ventricular shunt care, analyses continue to demonstrate wide variation in shunt malfunction rates among different institutions.

1b.3 Citations for data on performance gap:
1. Epidemiology, prevention and management of ventriculoperitoneal shunt infections in children. Prusseit J, Simon M, von der Brelie C, Heep A, Molitor E, Volz S, Simon A. Pediatr Neurosurg. 2009;45(5):325-36. Epub 2009 Nov 11.

2. Hospital care for children with hydrocephalus in the United States: utilization, charges, comorbidities, and deaths. Simon TD, Riva-Cambrin J, Srivastava R, Bratton SL, Dean JM, Kestle JR; Hydrocephalus Clinical Research Network. J Neurosurg Pediatr. 2008 Feb;1(2):131-7.

3. Infection rates following initial cerebrospinal fluid shunt placement across pediatric hospitals in the United States. Clinical article. Simon TD, Hall M, Riva-Cambrin J, Albert JE, Jeffries HE, Lafleur B, Dean JM, Kestle JR; Hydrocephalus Clinical Research Network. J Neurosurg Pediatr. 2009 Aug;4(2):156-65

4. A multi-institutional, 5-year analysis of initial and multiple ventricular shunt revisions in children. Berry JG, Hall MA, Sharma V, Goumnerova L, Slonim AD, Shah SS. Neurosurgery. 2008 Feb;62(2):445-53; discussion 453-4.

1b.4 Summary of Data on disparities by population group:
Variation in shunt malfunction rates has been demonstrated across racial/ethnic groups.

1b.5 Citations for data on Disparities:
A multi-institutional, 5-year analysis of initial and multiple ventricular shunt revisions in children. Berry JG, Hall MA, Sharma V, Goumnerova L, Slonim AD, Shah SS. Neurosurgery. 2008 Feb;62(2):445-53; discussion 453-4.

P☐ M☐ N☐

1c. Outcome or Evidence to Support Measure Focus

1c.1 Relationship to Outcomes (*For non-outcome measures, briefly describe the relationship to desired outcome. For outcomes, describe why it is relevant to the target population*)**:** Children who require on-going cerebrospinal fluid diversion with a ventricular shunt have a major risk of morbidity and mortality. These children are experiencing high rates of life-threatening shunt malfunction that is contributing to increased inpatient resource utilization, higher healthcare costs, and impaired quality of life. The Institute of Medicine highlights the importance of evaluating and lowering the risk of medical device-related complications, such as ventricular shunts.

1c.2-3. Type of Evidence:

1c.4 Summary of Evidence (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
N/A

1c.5 Rating of strength/quality of evidence (*also provide narrative description of the rating and by whom***):**
N/A

1c.6 Method for rating evidence: N/A

1c
C☐ P☐ M☐ N☐

1c.7 Summary of Controversy/Contradictory Evidence: N/A **1c.8 Citations for Evidence (***other than guidelines***):** N/A **1c.9 Quote the Specific guideline recommendation (***including guideline number and/or page number***):** N/A **1c.10 Clinical Practice Guideline Citation:** N/A **1c.11 National Guideline Clearinghouse or other URL:** N/A **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** N/A **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)***:** N/A **1c.14 Rationale for using this guideline over others:** N/A	
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Importance to Measure and Report?*	**1**
Steering Committee: Was the threshold criterion, *Importance to Measure and Report***, met?** **Rationale:**	**1** **Y☐** **N☐**
2. 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)	Eval Rating
2a. MEASURE SPECIFICATIONS	
S.1 Do you have a web page where current detailed measure specifications can be obtained? **S.2 If yes, provide web page URL:** **2a. Precisely Specified**	
2a.1 Numerator Statement (*Brief, text description of the numerator - what is being measured about the target population, e.g. target condition, event, or outcome***):** The number of initial cerebrospinal VP shunt placement procedures performed on children between the ages of 0 and 18 years of age that malfunction and result in shunt revision within 30 days of initial placement. **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** Within 30 days of initial VP shunt placement. **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** Number of cases of initial VP shunt placement ICD-9 procedure code 02.34 (Ventricular shunt to abdominal cavity and organs) among patients between the ages of 0 and 18 years at the time of placement resulting in malfunction characterized by a shunt revision within 30 days of initial procedure. Shunt malfunction is identified by ICD-9 procedure codes 02.42 (Replacement of ventricular catheter or revision of ventriculoperitoneal shunt at ventricular site), 54.95 (Incision of Peritoneum— revision of VP shunt at peritoneal site), or the combination of codes 02.43 (Removal of ventricular shunt) and 02.34	**2a-specs** **C☐** **P☐** **M☐** **N☐**

(Ventricular shunt to abdominal cavity and organs) during the same admission.

2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):**
The total number of initial cerebrospinal VP shunt procedures performed on children between the ages of 0 and 18 years.

2a.5 Target population gender: Female, Male
2a.6 Target population age range: Children between the ages of 0 and 18 years

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
Within 30 days of initial VP shunt placement. Based on NQF and public feedback, we are currently testing longer time window intervals (e.g., 60, 90 and one year intervals for shunt malfunction.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
The total number of initial VP shunt placements (ICD-9 procedure code 02.34) among patients between the ages of 0 and 18 years at the time of procedure.

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** None

2a.10 Denominator Exclusion Details (*All information required to collect exclusions to the denominator, including all codes, logic, and definitions***):**
N/A

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
We are currently testing stratification of shunt revision based on infection of the shunt vs. mechanical malfunction of the shunt. We are also testing disparities to inform results stratification presentation by race/ethnicity.

2a.12-13 Risk Adjustment Type: Other No Risk Adjustment currently; we are in the process of conducting risk adjustment testing.

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
Published data have shown that children under a month of age or with a diagnosis of spina bifida are at higher risk for sustaining a cerebrospinal VP shunt revision compared with older children and children without spina bifida. We are also conducting analyses suggesting that infants with prematurity and multiple congenital anomalies may also be at risk for shunt revision. We are currently testing different multivariate modeling strategies to determine how these variables should be incorporated into a risk adjustment model.

2a.15-17 Detailed risk model available Web page URL or attachment:

2a.18-19 Type of Score: Rate/proportion
2a.20 Interpretation of Score: Better quality = Lower score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
The measure is a 30-day VP shunt malfunction rate defined as the proportion of shunt revisions within 30 days over the number of initial cerebrospinal VP shunt placement procedures performed on children between the ages of 0 and 18 years. In order to stabilize the rates due to small number of events, the measure will be presented as a 3-year rolling rate. The benchmark for each year is the mean VP malfunction rate of all participating pediatric hospitals in the Pediatric Health Information System PHIS dataset.

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
Over the following year, we will test and identify the most appropriate method for discriminating hospital performance. Certainly the variance of a hospital's performance will be incorporated with statistical testing to identify performance outliers.

2a.23 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): Not Specified. However VP Malfunction rate will be presented as a 3 year rolling rate in order to account for fluctuations due to small number of events.	
2a.24 Data Source (*Check the source(s) for which the measure is specified and tested)* Electronic clinical data, Electronic administrative data/claims **2a.25 Data source/data collection instrument (***Identify the specific data source/data collection instrument, e.g. name of database, clinical registry, collection instrument, etc.***):** Pediatric Health Information System (PHIS): PHIS is an administrative database that contains inpatient, emergency department and ambulatory surgery data from 42 not-for-profit, tertiary care pediatric hospitals in the United States. These hospitals are affiliated with the Child Health Corporation of America. Data quality and reliability are assured through a joint effort between the Child Health Corporation of America and participating hospitals. **2a.26-28 Data source/data collection instrument reference web page URL or attachment:** Attachment 2a.28 PHIS Summary-634021876715516737.doc **2a.29-31 Data dictionary/code table web page URL or attachment:** Attachment 2a.29 PHIS Data Dictionary Oct 2009.xls **2a.32-35 Level of Measurement/Analysis** (*Check the level(s) for which the measure is specified and tested)* Facility/Agency **2a.36-37 Care Settings (***Check the setting(s) for which the measure is specified and tested)* Hospital **2a.38-41 Clinical Services** (*Healthcare services being measured, check all that apply*) Clinicians: Physicians (MD/DO)	
TESTING/ANALYSIS	
2b. Reliability testing **2b.1 Data/sample** *(description of data/sample and size)***:** Formal testing of reliability/repeatability has not yet been performed. **2b.2 Analytic Method** *(type of reliability & rationale, method for testing)***:** N/A **2b.3 Testing Results** *(reliability statistics, assessment of adequacy in the context of norms for the test conducted)***:** N/A	**2b** **C**☐ **P**☐ **M**☐ **N**☐
2c. Validity testing **2c.1 Data/sample** *(description of data/sample and size)***:** Formal validation has not yet been performed. Pilot testing demonstrates that administrative data have good accuracy to detect shunt malfunction rates compared with chart review. We will formalize this testing over the next year with appropriate analytical methods (e.g., sensitivity/specificity, etc.). **2c.2 Analytic Method** *(type of validity & rationale, method for testing)***:** N/A **2c.3 Testing Results** *(statistical results, assessment of adequacy in the context of norms for the test conducted)***:** N/A	**2c** **C**☐ **P**☐ **M**☐ **N**☐
2d. Exclusions Justified	**2d**

2d.1 Summary of Evidence supporting exclusion(s):
N/A

2d.2 Citations for Evidence:
N/A

2d.3 Data/sample *(description of data/sample and size)*: PHIS pediatric database (Time frame: January 2004 through September 2009).

2d.4 Analytic Method *(type analysis & rationale)*:
Logistic Regression analysis.

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
Logistic regression analysis using a sample size of 8,879 from the PHIS database (time frame: January 2004 through September 30, 2009) shows a strong association between a diagnosis of Spina Bifida and VP shunt malfunction— [OR 1.82 (1.60, 2.07) p<0.0001] among children between the ages of 0 and 18 years undergoing initial cerebrospinal VP shunt placement.

C☐ P☐ M☐ N☐ NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: Pediatric Health Information Systems Database (PHIS) and the National Association of Children's Hospitals and Related Institutions (NACHRI) datasets (testing on-going).

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
Published data has shown that children under a month of age or with a diagnosis of spina bifida are at higher risk for sustaining a cerebrospinal VP shunt revision compared with older children and children without spina bifida. We are also conducting analyses suggesting that infants with prematurity and multiple congenital anomalies may also be at risk for shunt revision. We are currently testing different multivariate modeling strategies to determine how these variables should be incorporated into a risk adjustment model.

Citations:

Shah SS, Hall M, Slonim AD, Hornig GW, Berry JG, Sharma V. A Multicenter Study of Factors Influencing Cerebrospinal Fluid Shunt Survival in Infants and Children. Neurosurgery 2008; 62(5).

Berry JG, Hall M, Sharma V, Goumnerova L, Slonim AD, Shah SS. A Multi-Institutional, 5-year Analysis of Initial and Multiple Ventricular Shunt Revisions in Children. Neurosurgery 2008; 62(2).

2e.3 Testing Results *(risk model performance metrics)*:
N/A

2e.4 If outcome or resource use measure is not risk adjusted, provide rationale: N/A

2e
C☐ P☐ M☐ N☐ NA☐

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: PHIS Database 2004 through September 30 2009; 7679 procedures performed at 42 institutions, each with > 50 eligible surgical cases for the time period. Trend analysis based on 3 year intervals. The combined VP malfunction rate of our institution (Children's Hospital Boston) and all other PHIS participating hospitals serve as the benchmark. Meaningful differences between CHB and the benchmark will be assessed as 3 year intervals.

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
The measure is a 30-day VP shunt malfunction rate defined as the proportion of shunt revisions within 30 days over the number of initial cerebrospinal VP shunt placement procedures performed on children between the ages of 0 and 18 years. In order to stabilize the rates due to small number of events, the

2f
C☐ P☐ M☐ N☐

measure will be presented as a 3-year rolling rate. The benchmark for each year is the mean VP revision rate of all participating pediatric hospitals in the Pediatric Health Information System PHIS dataset. 2f.3 **Provide Measure Scores from Testing or Current Use** *(description of scores, e.g., distribution by quartile, mean, median, SD, etc.; identification of statistically significant and meaningfully differences in performance)*: Table 1 (Attached Item 2f.3) presents trends of 30-day VP Malfunction Rates for our institution (CHB) and the benchmark of all PHIS hospitals over 3 year intervals beginning in CY08. Our institution's malfunction rates do not differ significantly from the PHIS benchmark. The trend data presented in Figure 1 show that CHB's annual malfunction rates do not differ significantly from year to year.	
2g. Comparability of Multiple Data Sources/Methods 2g.1 **Data/sample** *(description of data/sample and size)*: N/A 2g.2 **Analytic Method** *(type of analysis & rationale)*: Formal evaluation of comparability of multiple data sources is currently in process. However, this measure was designed such that it could be implemented using a variety of different data sources. 2g.3 **Testing Results** *(e.g., correlation statistics, comparison of rankings)*: N/A	**2g** C☐ P☐ M☐ N☐ NA☐
2h. Disparities in Care 2h.**1 If measure is stratified, provide stratified results** *(scores by stratified categories/cohorts)*: Following further testing, we will provide instructions on how to stratify the results based on race/ethnicity. 2h.2 **If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:** Prior studies have revealed variation in early shunt malfunction by race/ethnicity. We will test this disparity further with the NACHRI casemix dataset over the next year.	**2h** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Scientific Acceptability of Measure Properties?*	**2**
Steering Committee: Overall, to what extent was the criterion, *Scientific Acceptability of Measure Properties*, **met?** **Rationale:**	*2* C☐ P☐ M☐ N☐
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)	Eval Rating
3a. Meaningful, Understandable, and Useful Information 3a.1 **Current Use:** In use 3a.2 **Use in a public reporting initiative (disclosure of performance results to the public at large)** (*If used in a public reporting initiative, provide name of initiative(s), locations, Web page URL(s). If not publicly reported, state the plans to achieve public reporting within 3 years*): Not currently used for public reporting; however we will develop a plan which hopefully will include the time-limited endorsement of NQF and professional societies. 3a.3 **If used in other programs/initiatives (***If used in quality improvement or other programs/initiatives, name of initiative(s), locations, Web page URL(s). If not used for QI, state the plans to achieve use for QI within 3 years***):** VP Shunt Malfunction is a performance outcome metric presented in our institution's internal bi-annual Comprehensive Quality Report prepared by the Program for Patient Safety and Quality and disseminated to	**3a** C☐ P☐ M☐ N☐

senior leadership and stakeholders. **Testing of Interpretability** (*Testing that demonstrates the results are understood by the potential users for public reporting and quality improvement*) 3a.4 **Data/sample** *(description of data/sample and size)*: N/A 3a.5 **Methods** *(e.g., focus group, survey, QI project)*: Testing of interpretability not performed. 3a.6 **Results** *(qualitative and/or quantitative results and conclusions)*: N/A	
3b/3c. Relation to other NQF-endorsed measures 3b.1 **NQF # and Title of similar or related measures:** No similar measure.	
(for NQF staff use) **Notes on similar/related** endorsed **or submitted measures:**	
3b. Harmonization If this measure is related to measure(s) already endorsed by NQF (e.g., same topic, but different target population/setting/data source or different topic but same target population): 3b.2 **Are the measure specifications harmonized? If not, why?** N/A	**3b** C☐ P☐ M☐ N☐ NA☐
3c. Distinctive or Additive Value 3c.1 **Describe the distinctive, improved, or additive value this measure provides to existing NQF-endorsed measures:** N/A 5.1 **If this measure is similar to measure(s) already endorsed by NQF (i.e., on the same topic and the same target population), Describe why it is a more valid or efficient way to measure quality:** N/A	**3c** C☐ P☐ M☐ N☐ NA☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Usability?*	**3**
Steering Committee: Overall, to what extent was the criterion, *Usability*, **met?** **Rationale:**	**3** C☐ P☐ M☐ N☐
4. FEASIBILITY	
Extent to which the required data are readily available, retrievable without undue burden, and can be implemented for performance measurement. (evaluation criteria)	Eval Rating
4a. Data Generated as a Byproduct of Care Processes 4a.1-2 **How are the data elements that are needed to compute measure scores generated?** Data generated as byproduct of care processes during care delivery (Data are generated and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition), Coding/abstraction performed by someone other than person obtaining original information (E.g., DRG, ICD-9 codes on claims, chart abstraction for quality measure or registry), Other Electronic medical record	**4a** C☐ P☐ M☐ N☐
4b. Electronic Sources 4b.1 **Are all the data elements available electronically?** (*elements that are needed to compute measure scores are in defined, computer-readable fields, e.g., electronic health record, electronic claims*) Yes	**4b** C☐ P☐ M☐ N☐

4b.2 **If not, specify the near-term path to achieve electronic capture by most providers.**	
4c. Exclusions 4c.1 **Do the specified exclusions require additional data sources beyond what is required for the numerator and denominator specifications?** No 4c.2 **If yes, provide justification.**	**4c** C☐ P☐ M☐ N☐ NA☐
4d. Susceptibility to Inaccuracies, Errors, or Unintended Consequences 4d.1 **Identify susceptibility to inaccuracies, errors, or unintended consequences of the measure and describe how these potential problems could be audited. If audited, provide results.** PHIS is an administrative database and can be subject to coding inaccuracies and limitations. We are able to match our institution's cases in the PHIS database with our internal data system in order to assess accuracy.	**4d** C☐ P☐ M☐ N☐
4e. Data Collection Strategy/Implementation 4e.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/frequency of data collection, patient confidentiality, time/cost of data collection, other feasibility/ implementation issues:** Not yet done. 4e.2 **Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** Cost is minimal if the hospital contains an existing database that contains the ICD-9 procedure and diagnostic codes for each admission. 4e.3 **Evidence for costs:** N/A 4e.4 **Business case documentation:** N/A	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the subcriteria for *Feasibility*?	**4**
Steering Committee: Overall, to what extent was the criterion, *Feasibility*, **met?** **Rationale:**	**4** C☐ P☐ M☐ N☐
RECOMMENDATION	
(for NQF staff use) **Check if measure is untested and only eligible for time-limited endorsement.**	**Time-limited** ☐
Steering Committee: Do you recommend for endorsement? **Comments:**	Y☐ N☐ A☐
CONTACT INFORMATION	
Co.1 **Measure Steward (Intellectual Property Owner)** Co.1 **Organization** Children´s Hospital Boston, Program for Patient Safety and Quality, 300 Longwood Avenue, Boston, Massachusetts, 02115	

Co.2 **Point of Contact**
Nina, Rauscher, MS, RN, CPHQ, nina.rauscher@childrens.harvard.edu, 617-355-6567-

Measure Developer If different from Measure Steward
Co.3 **Organization**
Children's Hospital Boston, Neurosurgery/Complex Care Service, 300 Longwood Avenue, Boston, Massachusetts, 02115

Co.4 **Point of Contact**
Nina, Rauscher, MS, RN, CPHQ, nina.rauscher@childrens.harvard.edu, 617-355-6567-

Co.5 **Submitter If different from Measure Steward POC**
Nina, Rauscher, MS, RN, CPHQ, nina.rauscher@childrens.harvard.edu, 617-355-6567-, Children's Hospital Boston

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

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.**
Jay Berry, MD, MPH
Liliana Goumnerova, MD

Ad.2 **If adapted, provide name of original measure:** N/A
Ad.3-5 **If adapted, provide original specifications URL or attachment**

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.6 **Year the measure was first released:** 2006
Ad.7 **Month and Year of most recent revision:** 12, 2009
Ad.8 **What is your frequency for review/update of this measure?** Bi-annual review
Ad.9 **When is the next scheduled review/update for this measure?** 06, 2010

Ad.10 **Copyright statement/disclaimers:** N/A

Ad.11 -13 **Additional Information web page URL or attachment:** Attachment 2f.3 Measure Scores.doc

Date of Submission (*MM/DD/YY*)**:** 09/22/2010