NATIONAL QUALITY FORUM

Measure Evaluation 4.1
January 2010

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 sub-criteria and most of the footnotes from the evaluation criteria are provided in Word comments and will appear if your cursor is over the highlighted area (or in the margin if your Word program is set to show revisions in balloons). 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 sub-criterion 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* sub-criteria *(yellow highlighted areas).*

Steering Committee: Complete all pink highlighted areas of the form. Review the workgroup/TAP assessment of the sub-criterion, 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 sub-criteria as indicated)

(for NQF staff use) **NQF Review** #: ACP-043-10 **NQF Project:** Patient Safety Measures
MEASURE DESCRIPTIVE INFORMATION
De.1 **Measure Title:** Ultrasound guidance for Internal Jugular central venous catheter placement
De.2 **Brief description of measure:** Percent of adult patients aged 18 years and older with an Internal Jugular central venous catheter placed in the emergency department (ED) under ultrasound guidance.
1.1-2 **Type of Measure:** process De.3 **If included in a composite or paired with another measure, please identify composite or paired measure** N/A
De.4 **National Priority Partners Priority Area:** safety De.5 **IOM Quality Domain:** effectiveness, safety, patient-centered 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*)**:** proprietary measure A.3 **Measure Steward Agreement:** agreement signed and submitted A.4 **Measure Steward Agreement attached:** txNQFMeasureStewardAgreement_020309_Final[1].pdf	A Y☐ N☐

B. The measure owner/steward verifies there is an identified responsible entity and process to maintain and 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	**B** Y☐ N☐
C. The intended use of the measure includes both public reporting and quality improvement. ►**Purpose:** public reporting, quality improvement Accreditation, Payment Incentive, Accountability	**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:** frequently performed procedure, patient/societal consequences of poor quality 1a.2 1a.3 **Summary of Evidence of High Impact:** Emergency physicians frequently place central venous catheters, an invasive procedure with significant complication rates. Multiple studies have shown that use of ultrasound to guide placement of CVCs increases first-attempt success, overall success and reduces complications. Routine US guidance for placement of CVCs has been recommended by systematic evidence reports—a A 2001 Agency for Healthcare Research and Quality Evidence Report rates use of real-time ultrasound guidance during central line insertion to prevent complications among 11 of the most highly rated patient safety practices in terms of strength of the evidence supporting more widespread implementation. Routine US guidance for placement of CVCs has also been deemed cost effective (NHS). The 2008 American College of Emergency Physicians (ACEP) ultrasound guidelines list ultrasonographic guidance for CV access as a "core or primary emergency ultrasound application." The criteria for inclusion as core are widespread use, significant evidence base, uniqueness in diagnosis or decision-making, or importance in primary emergency diagnosis and resuscitation. 1a.4 **Citations for Evidence of High Impact:** 1. Agency for Health Care Research and Quality (AHRQ). Evidence Report/Technology Assessment: Number 43. Making Health Care Safer. A Critical Analysis of Patient Safety Practices: Summary 2001. 2007.. 2. Wigmore TJ, Smythe JF, Hacking MB, Raobaikady R, MacCallum NS. Effect of the implementation of	**1a** C☐ P☐ M☐ N☐

Comment [KP1]: 1a. The measure focus addresses:
•a specific national health goal/priority identified by NQF's National Priorities Partners; OR
•a demonstrated high impact aspect of healthcare (e.g., affects large numbers, leading cause of morbidity/mortality, high resource use (current and/or future), severity of illness, and patient/societal consequences of poor quality).

NICE guidelines for ultrasound guidance on the complication rates associated with central venous catheter placement in patients presenting for routine surgery in a tertiary referral centre. Br J Anaesth. 2007 Nov;99(5):662-5. Epub 2007 Sep 14.
3. Calvert N. Hind D. McWilliams R. Davidson A. Beverley CA. Thomas SM. Ultrasound for central venous cannulation: economic evaluation of cost-effectiveness. Anaesthesia. 59(11):1116-20, 2004 Nov.
4. Milling TJ Jr. Rose J. Briggs WM. Birkhahn R. Gaeta TJ. Bove JJ. Melniker LA. Randomized, controlled clinical trial of point-of-care limited ultrasonography assistance of central venous cannulation: the Third Sonography Outcomes Assessment Program (SOAP-3) Trial. Critical Care Medicine. 33(8):1764-9, 2005 Aug.
5. Emergency Ultrasound Guidelines. Annals of Emergency Medicine, April 2009 (Vol. 53, Issue 4, Pages 550-570).

1b. Opportunity for Improvement

1b.1 **Benefits (improvements in quality) envisioned by use of this measure:** This measure will identify institutions and individual clinicians who are not uniformly using ultrasound guidance and thus opportunity for quality improvement. Hospitals focusing on patient safety have embraced national and international safety guidelines that strongly recommend the use of ultrasound in central venous access; a critical procedure with significant potential complications that was routinely performed "blindly" before the clinical use of ultrasound.

Use of ultrasound during CVC is also an excellent risk reducing tool by decreasing complications from a blind procedure that carries an inherent level of complications. An important step to managing risk is ensuring that physicians are properly trained and credentialed according to national guidelines such as those set by ACEP. Proper quality assurance and improvement programs should be in place to identify and correct substandard practice. Lastly, the standard of care for emergency ultrasound is the performance and interpretation of ultrasound by a credentialed emergency physician within the limits of the clinical scenario.

1b.2 **Summary of data demonstrating performance gap (variation or overall poor performance) across providers:**
Recent studies indicate that the use of ultrasound during CVC remains limited and is most strongly associated with the availability of equipment and that current use of ultrasound during CVC is limited and differs from existing evidence-based recommendations.

1b.3 **Citations for data on performance gap:**
1. Bailey PL, Glance LG, Eaton MP, Parshall B, McIntosh S. A survey of the use of ultrasound during central venous catheterization. Anesth Analg. 2007 Mar;104(3):491-7.

1b.4 **Summary of Data on disparities by population group:**
None.

1b.5 **Citations for data on Disparities:**
None.

1b
C☐
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*)**:** In 2001, the Agency for Healthcare Research and Quality recommended the use of ultrasound for the placement of central venous catheters (CVCs) as one of their 11 practices to improve patient care. These recommendations were based on the results of several randomized clinical trials showing significantly improved overall success as well as reductions in complications.

1c.2-3. **Type of Evidence:** randomized controlled trial, evidence based guideline

1c.4 **Summary of Evidence** (*as described in the criteria; for outcomes, summarize any evidence that healthcare services/care processes influence the outcome*)**:**
As cited in the literature above ultrasound guidance of CVC insertion reduces complications such as

1c
C☐
P☐
M☐
N☐

Comment [KP2]: 1b. Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating considerable variation, or overall poor performance, in the quality of care across providers and/or population groups (disparities in care).

Comment [k3]: 1 Examples of data on opportunity for improvement include, but are not limited to: prior studies, epidemiologic data, measure data from pilot testing or implementation. If data are not available, the measure focus is systematically assessed (e.g., expert panel rating) and judged to be a quality problem.

Comment [k4]: 1c. The measure focus is:
•an outcome (e.g., morbidity, mortality, function, health-related quality of life) that is relevant to, or associated with, a national health goal/priority, the condition, population, and/or care being addressed;
OR
•**if** an intermediate outcome, process, structure, etc., there is **evidence** that supports the specific measure focus as follows:
oIntermediate outcome - evidence that the measured intermediate outcome (e.g., blood pressure, Hba1c) leads to improved health/avoidance of harm or cost/benefit.
oProcess - evidence that the measured clinical or administrative process leads to improved health/avoidance of harm and
if the measure focus is on one step in a multi-step care process, it measures the step that has the greatest effect on improving the specified desired outcome(s).
oStructure - evidence that the measured structure supports the consistent delivery of effective processes or access that lead to improved health/avoidance of harm or cost/benefit.
oPatient experience - evidence that an association exists between the measure of patient experience of health care and the outcomes, values and preferences of individuals/ the public.
oAccess - evidence that an association exists between access to a health service and the outcomes of, or experience with, care.
oEfficiency - demonstration of an association between the measured resource use and level of performance with respect to one or more of the other five IOM aims of quality.

Comment [k5]: 4 Clinical care processes typically include multiple steps: assess → identify problem/potential problem → choose/plan intervention (with patient input) → provide intervention → evaluate impact on health status. If the measure focus is one step in such a multi-step process, the step with the greatest effect on the desired outcome should be selected as the focus of measurement. For example, although assessment of immunization status and recommending immunization are necessary steps, they are not sufficient to achieve the desired impact on health status - patients must be vaccinated to achieve immunity. This does not preclude consideration of measures of preventive screening interventions where there is a strong link with desired outcomes (e.g., ...

pneumothorax and results in higher success rate in placement of the CVCs.

Ultrasound guidance has been studied as a useful adjunct to many common ED procedures, including venous access. Studies since the early 1990s have demonstrated the efficacy of ultrasound guidance for central venous cannulation, and recently, a randomized controlled study of 201 patients undergoing central venous cannulation demonstrated higher success rates with dynamic ultrasound guidance (98% success) when compared with static ultrasound guidance (82%) or landmark-based methods (64%).

1c.5 **Rating of strength/quality of evidence** (*also provide narrative description of the rating and by whom*)**:**
Some Class I evidence (Randomized controlled trials (RCTs)) exists for ultrasound-assisted central venous cannulation, but most publications are Class II evidence (data collected prospectively, and retrospective analyses from clearly reliable data). Currently, a Level 1 recommendation for use of clinical sonography may be assigned to ultrasound-assistance of central venous cannulation: "convincingly justifiable based on the available scientific information alone."

1c.6 **Method for rating evidence:** 1. Literature review in which emergency ultrasound applications graded in the Fryback-Pearl hierarchical model of effectiveness assessment.

2. Assessment of scientific evidence traditionally presented as classes:
- Class I Evidence: Randomized controlled trials (RCTs) are the gold standard
- Class II Evidence:
A. Data collected prospectively
B. Retrospective analyses from clearly reliable data
- Class III Evidence: Most studies based on retrospectively collected data

3. After completing an assessment of the scientific evidence, the confidence in recommending the use of clinical sonography can be rendered and presented as levels:
- Level 1: Convincingly justifiable based on the available scientific information alone
- Level 2: Reasonably justifiable by available scientific evidence and strongly supported by expert opinion
- Level 3: Supported by available data but adequate scientific evidence is lacking.

1c.7 **Summary of Controversy/Contradictory Evidence:** No negative data has been published and it is formally recommended by the Agency for Healthcare Research and Quality.

1c.8 **Citations for Evidence** (*other than guidelines*)**:** 1.Milling TJ Jr. Rose J. Briggs WM. Birkhahn R. Gaeta TJ. Bove JJ. Melniker LA. Randomized, controlled clinical trial of point-of-care limited ultrasonography assistance of central venous cannulation: the Third Sonography Outcomes Assessment Program (SOAP-3) Trial. Critical Care Medicine. 33(8):1764-9, 2005 Aug.
2. Agency for Health Care Research and Quality (AHRQ). Evidence Report/Technology Assessment: Number 43. Making Health Care Safer. A Critical Analysis of Patient Safety Practices: Summary 2001. 2007.
3. National Institute of Clinical Excellence. Final Appraisal Determination: Ultrasound locating devices for placing central venous catheters. National Institute of Clinical Excellence 2002. 2007.
4. Leung J, Duffy M, Finckh A. Real-time ultrasonographically-guided internal jugular vein catheterization in the emergency department increases success rates and reduces complications: A randomized, prospective study. Ann Emerg Med. 2006; 48:540-547.

1c.9 **Quote the Specific guideline recommendation** (*including guideline number and/or page number*)**:**
ACEP Emergency Ultrasound Guidelines. Annals of Emergency Medicine, April 2009 (Vol. 53, Issue 4, Page 551). Includes ultrasound guidance for CVC as one of 11 core or primary emergency ultrasound applications. The criteria for inclusion as core are widespread use, significant evidence base, uniqueness in diagnosis or decisionmaking, or importance in primary emergency diagnosis and resuscitation.

Agency for Health Care Research and Quality (AHRQ). Evidence Report/Technology Assessment: Number 43. Making Health Care Safer. A Critical Analysis of Patient Safety Practices. Recommends the use of ultrasound for the placement of central venous catheters (CVCs) as one of 11 practices to improve patient care.

Comment [k6]: 3 The strength of the body of evidence for the specific measure focus should be systematically assessed and rated (e.g., USPSTF grading system http://www.ahrq.gov/clinic/uspstf07/methods/benefit.htm). If the USPSTF grading system was not used, the grading system is explained including how it relates to the USPSTF grades or why it does not. However, evidence is not limited to quantitative studies and the best type of evidence depends upon the question being studied (e.g., randomized controlled trials appropriate for studying drug efficacy are not well suited for complex system changes). When qualitative studies are used, appropriate qualitative research criteria are used to judge the strength of the evidence.

1c.10 Clinical Practice Guideline Citation: Emergency Ultrasound Guidelines. Annals of Emergency Medicine, April 2009 (Vol. 53, Issue 4, Pages 550-570). Agency for Health Care Research and Quality (AHRQ). Evidence Report/Technology Assessment: Number 43. Making Health Care Safer. A Critical Analysis of Patient Safety Practices: Summary 2001. 2007. **1c.11 National Guideline Clearinghouse or other URL:** www.annemergmed.com ; www.ahrq.gov **1c.12 Rating of strength of recommendation (***also provide narrative description of the rating and by whom***):** See 1c. 5. above **1c.13 Method for rating strength of recommendation** (*If different from* USPSTF system*, also describe rating and how it relates to USPSTF)*: See 1c. 6. Above **1c.14 Rationale for using this guideline over others:** Strength of evidence; see 1c. 5 and 1c.6. above	
TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **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***):** Number of adult patients aged 18 years and older who underwent ultrasound guided Internal Jugular central venous catheter insertion in the emergency department (ED). **2a.2 Numerator Time Window (***The time period in which cases are eligible for inclusion in the numerator***):** None **2a.3 Numerator Details (***All information required to collect/calculate the numerator, including all codes, logic, and definitions***):** --Procedure codes for central venous catheter and --CPT E/M Service Codes: 99281, 99282, 99283, 99284, 99285, 99291 and --Procedure codes for ultrasound guidance Or --Chart review evidence of ultrasound guidance (Recommend new CPT2 or G codes be created)	**2a-specs** **C☐** **P☐** **M☐** **N☐**
2a.4 Denominator Statement (*Brief, text description of the denominator - target population being measured***):** Number of adult patients aged 18 years and older who underwent Internal Jugular central venous catheter insertion in the emergency department (ED).	

Comment [k7]: USPSTF grading system **http://www.ahrq.gov/clinic/uspstf/grades.htm: A -** The USPSTF recommends the service. There is high certainty that the net benefit is substantial. **B -** The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial. **C -** The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small. Offer or provide this service only if other considerations support the offering or providing the service in an individual patient. **D -** The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits. **I -** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Comment [KP8]: 2a. The measure is well defined and precisely specified so that it can be implemented consistently within and across organizations and allow for comparability. The required data elements are of high quality as defined by NQF's Health Information Technology Expert Panel (HITEP) .

2a.5 Target population gender: Female, Male
2a.6 Target population age range: 18 and older

2a.7 Denominator Time Window (*The time period in which cases are eligible for inclusion in the denominator***):**
None.

2a.8 Denominator Details (*All information required to collect/calculate the denominator - the target population being measured - including all codes, logic, and definitions***):**
--Procedure codes for central venous catheter and
--CPT E/M Service Codes: 99281, 99282, 99283, 99284, 99285, 99291

2a.9 Denominator Exclusions (*Brief text description of exclusions from the target population***):** 1. Patients receiving central lines in other sites (subclavian, femora)
2. Patients with allergy to US gel
3. Central line placed in code situation (clinician documents that there was not time to perform ultrasound guidance)
4. US machine with high frequency linear probe not available
--Not at bedside due to time constraint
--ED does not have access to ultrasound
5. Clinicians not credentialed in ultrasound guided central venous cannulation, or not credentialed in ultrasound guided procedures.

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

2a.11 Stratification Details/Variables (*All information required to stratify the measure including the stratification variables, all codes, logic, and definitions***):**
N/A

2a.12-13 Risk Adjustment Type: no risk adjustment necessary

2a.14 Risk Adjustment Methodology/Variables (*List risk adjustment variables and describe conceptual models, statistical models, or other aspects of model or method***):**
N/A

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

2a.18-19 Type of Score: count
2a.20 Interpretation of Score: better quality = higher score
2a.21 Calculation Algorithm (*Describe the calculation of the measure as a flowchart or series of steps***):**
N/A

2a.22 Describe the method for discriminating performance *(e.g., significance testing)***:**
N/A

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)*:
N/A

2a.24 Data Source (*Check the source(s) for which the measure is specified and tested***)**
paper medical record/flowsheet, Electronic adminstrative data/claims, Electronic clinical data, electronic Health/Medical Record

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.***):**
Data will be collected from the medical record. These can be easily recorded either electronically or on paper using institution-specific instruments.

2a.26-28 Data source/data collection instrument reference web page URL or attachment:

Comment [k9]: 11 Risk factors that influence outcomes should not be specified as exclusions.
12 Patient preference is not a clinical exception to eligibility and can be influenced by provider interventions.

2a.29-31 Data dictionary/code table web page URL or attachment:

2a.32-35 Level of Measurement/Analysis *(Check the level(s) for which the measure is specified and tested)*
Clinicians: Individual, Clinicians: Group, Can be measured at all levels

2a.36-37 Care Settings (*Check the setting(s) for which the measure is specified and tested)*
Ambulatory Care: Emergency Dept

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)*: ACEP has not conducted testing.

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)*: N/A

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.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)*: N/A

2d.4 Analytic Method *(type analysis & rationale)*:
N/A

2d.5 Testing Results *(e.g., frequency, variability, sensitivity analyses)*:
N/A

2d
C☐
P☐
M☐
N☐
NA☐

2e. Risk Adjustment for Outcomes/ Resource Use Measures

2e.1 Data/sample *(description of data/sample and size)*: No risk adjustment necessary

2e.2 Analytic Method *(type of risk adjustment, analysis, & rationale)*:
N/A

2e
C☐
P☐
M☐
N☐
NA☐

Comment [KP10]: 2b. Reliability testing demonstrates the measure results are repeatable, producing the same results a high proportion of the time when assessed in the same population in the same time period.

Comment [k11]: 8 Examples of reliability testing include, but are not limited to: inter-rater/abstractor or intra-rater/abstractor studies; internal consistency for multi-item scales; test-retest for survey items. Reliability testing may address the data items or final measure score.

Comment [KP12]: 2c. Validity testing demonstrates that the measure reflects the quality of care provided, adequately distinguishing good and poor quality. If face validity is the only validity addressed, it is systematically assessed.

Comment [k13]: 9 Examples of validity testing include, but are not limited to: determining if measure scores adequately distinguish between providers known to have good or poor quality assessed by another valid method; correlation of measure scores with another valid indicator of quality for the specific topic; ability of measure scores to predict scores on some other related valid measure; content validity for multi-item scales/tests. Face validity is a subjective assessment by experts of whether the measure reflects the quality of care (e.g., whether the proportion of patients with BP < 140/90 is a marker of quality). If face validity is the only validity addressed, it is systematically assessed (e.g., ratings by relevant stakeholders) and the measure is judged to represent quality care for the specific topic and that the measure focus is the most important aspect of quality for the specific topic.

Comment [KP14]: 2d. Clinically necessary measure exclusions are identified and must be:
•supported by evidence of sufficient frequency of occurrence so that results are distorted without the exclusion;
AND
•a clinically appropriate exception (e.g., contraindication) to eligibility for the measure focus; ...

Comment [k15]: 10 Examples of evidence that an exclusion distorts measure results include, but are not limited to: frequency of occurrence, sensitivity analyses with and without the exclusion, and variability of exclusions across providers.

Comment [KP16]: 2e. For outcome measures and other measures (e.g., resource use) when indicated:
•an evidence-based risk-adjustment strategy (e.g., risk models, risk stratification) is specified and is based on patient clinical factors that influence the measured outcom ...

Comment [k17]: 13 Risk models should not obscure disparities in care for populations by including factors that are associated with differences/inequalities in care such as race, socioeconomic status, gender (e.g., poorer treatment outcomes of African American men with prostate cancer, inequalities in treatment for CVD risk factors between men and wome ...

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

2f. Identification of Meaningful Differences in Performance

2f.1 Data/sample from Testing or Current Use *(description of data/sample and size)*: N/A

2f.2 Methods to identify statistically significant and practically/meaningfully differences in performance *(type of analysis & rationale)*:
N/A

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)*:
N/A

2f C☐ P☐ M☐ N☐

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)*:
N/A

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)*: N/A

2h.2 If disparities have been reported/identified, but measure is not specified to detect disparities, provide follow-up plans:
N/A

2h C☐ P☐ M☐ N☐ NA☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **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: testing not yet completed

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*):
This measure is not in use.

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*):
N/A

3a C☐ P☐ M☐ N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Comment [KP18]: 2f. Data analysis demonstrates that methods for scoring and analysis of the specified measure allow for identification of statistically significant and practically/clinically meaningful differences in performance.

Comment [k19]: 14 With large enough sample sizes, small differences that are statistically significant may or may not be practically or clinically meaningful. The substantive question may be, for example, whether a statistically significant difference of one percentage point in the percentage of patients who received smoking cessation counseling (e.g., 74% v. 75%) is clinically meaningful; or whether a statistically significant difference of $25 in cost for an episode of care (e.g., $5,000 v. $5,025) is practically meaningful. Measures with overall poor performance may not demonstrate much variability across providers.

Comment [KP20]: 2g. If multiple data sources/methods are allowed, there is demonstration they produce comparable results.

Comment [KP21]: 2h. If disparities in care have been identified, measure specifications, scoring, and analysis allow for identification of disparities through stratification of results (e.g., by race, ethnicity, socioeconomic status, gender);OR rationale/data justifies why stratification is not necessary or not feasible.

Comment [KP22]: 3a. Demonstration that information produced by the measure is meaningful, understandable, and useful to the intended audience(s) for both public reporting (e.g., focus group, cognitive testing) and informing quality improvement (e.g., quality improvement initiatives). An important outcome that may not have an identified improvement strategy still can be useful for informing quality improvement by identifying the need for and stimulating new approaches to improvement.

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)*:
N/A

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:
None.

(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 Competing Measures 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☐

TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **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?
coding/abstraction performed by someone other than person obtaining original information,

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*)
No

4b.2 If not, specify the near-term path to achieve electronic capture by most providers.
In EDs where EMR is present data elements will be available electronically, as adoption improves,

4b
C☐
P☐
M☐
N☐

Rating: C=Completely; P=Partially; M=Minimally; N=Not at all; NA=Not applicable

Comment [KP23]: 3b. The measure specifications are harmonized with other measures, and are applicable to multiple levels and settings.

Comment [k24]: 16 Measure harmonization refers to the standardization of specifications for similar measures on the same topic (e.g., ***influenza immunization*** of patients in hospitals or nursing homes), or related measures for the same target population (e.g., eye exam and HbA1c for ***patients with diabetes***), or definitions applicable to many measures (e.g., age designation for children) so that they are uniform or compatible, unless differences are dictated by the evidence. The dimensions of harmonization can include numerator, denominator, exclusions, and data source and collection instructions. The extent of harmonization depends on the relationship of the measures, the evidence for the specific measure focus, and differences in data sources.

Comment [KP25]: 3c. Review of existing endorsed measures and measure sets demonstrates that the measure provides a distinctive or additive value to existing NQF-endorsed measures (e.g., provides a more complete picture of quality for a particular condition or aspect of healthcare).

Comment [k26]: 5. Demonstration that the measure is superior to competing measures - new submissions and/or endorsed measures (e.g., is a more valid or efficient way to measure).

Comment [KP27]: 4a. For clinical measures, required data elements are routinely generated concurrent with and as a byproduct of care processes during care delivery. (e.g., BP recorded in the electronic record, not abstracted from the record later by other personnel; patient self-assessment tools, e.g., depression scale; lab values, meds, etc.)

Comment [KP28]: 4b. The required data elements are available in electronic sources. If the required data are not in existing electronic sources, a credible, near-term path to electronic collection by most providers is specified and clinical data elements are specified for transition to the electronic health record.

electronic capture will improve.	
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.** None.	**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:** Measure has not been tested by ACEP. **4e.2 Costs to implement the measure** (*costs of data collection, fees associated with proprietary measures*)**:** The cost to implement this measure will depend on the method used to collect data. Personnel time will be needed if paper medical records are to be reviewed in order to determine whether ultrasound was used for internal jugular central venous insertion. **4e.3 Evidence for costs:** Not available. **4e.4 Business case documentation:** Not available.	**4e** C☐ P☐ M☐ N☐
TAP/Workgroup: What are the strengths and weaknesses in relation to the sub-criteria **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** American College of Emergency Physicians | 2121 K Street, NW #325, Suite #325 | Washington | District Of Columbia | 20037 **Co.2 Point of Contact**	

Comment [KP29]: **4c. Exclusions** should not require additional data sources beyond what is required for scoring the measure (e.g., numerator and denominator) unless justified as supporting measure validity.

Comment [KP30]: **4d.** Susceptibility to inaccuracies, errors, or unintended consequences and the ability to audit the data items to detect such problems are identified.

Comment [KP31]: **4e.** Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, etc.) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use).

Angela | Franklin, Esq. | afranklin@acep.org | 202-728-0610-3014

Measure Developer If different from Measure Steward
Co.3 Organization
American College of Emergency Physicians | 2121 K Street, NW , Suite #325 | Washington | District Of Columbia | 20037

Co.4 Point of Contact
Angela | Franklin, Esq. | afranklin@acep.org | 202-728-0610-3014

Co.5 Submitter If different from Measure Steward POC
Angela | Franklin, Esq. | afranklin@acep.org | 202-728-0610-3014 |American College of Emergency Physicians

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

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.
The following members of ACEP's Quality and Performance Committee drafted and developed the measure:

Stephen V. Cantrill, MD FACEP
937 S. Emporia Street
Denver, CO 80247-1900
(W) 303.436.7174
(W-Fax) 303.436.7541
stephen.cantrill@dhha.org

Co-CHAIR
Jeremiah Schuur, MD
Brigham & Women's Hospital
75 Francis Street
Boston, MA 02115
Phone: 617.732-5636
(C) 401.480.7468
(Fax) 617.264.6848
jschuur@partners.org

Brent R. Asplin, MD MPH FACEP
Chair, Dept of Emergency Medicine
Mayo Clinic/GE GR G-410
200 First Street SW
Rochester, MN 55905
(W): (507) 255-6501 (Sue Kirk)
(C) 651.261.7939
Asplin.Brent@mayo.edu

Christopher Baugh, MD (EMRA)
1163 Beacon Street, Apt. 4
Brookline, MA 02446-5512
(H) 617.935.3589
(W) 617.732.8070
(W-Fax) 617.264.6848
cbaugh@partners.org

Robert I. Broida, MD FACEP
P.O. Box 5404
Akron, OH 44334-0404

(W) 330.493.4443 ext. 1307
(W-Fax) 330.491-4088
rbroida@emp.com

Dickson S. Cheung, MD
10360 Bluffmont Dr
Lone Tree, CO 80124-5579
(H) 303.662.9999
(C) 303.956.7381
dscheung@alum.mit.edu

William C. Dalsey, MD MBA FACEP
945 Len Mar Drive
Blue Bell, PA 19422-2000
(H) 215.654.1190
(Fax) 215.643.8787
wcderdoc@aol.com

Enrique R. Enguidanos, MD FACEP
North Sound Emergency Medicine
1001 N. Broadway, Suite A11
Everett, WA 98201-1582
(W) 425.259.0212
(H) 206.522.5935
(W-Fax) 425.259.0209
enrique.enguidanos@providence.org

David P. John, MD FACEP
Caritas Carney Hospital
2100 Dorchester Ave
Dorchester, MA 02124-5666
(W) 617.506.4463
(C) 203.671.5972
David.John@caritaschristi.org

Helmut W. Meisl, MD FACEP
Good Samaritan Hospital
2425 Samaritan Drive
San Jose, CA 95124
(W) 408.559.2552
(C) 650.283.7345
hmeisl@earthlink.net

Neal P. O'Connor, MD FACEP
Medical Center of Aurora
1501 S. Potomac
Aurora, CO 80012-5411
(W) 303.436.2721
(C) 303.589.9172
no'connor@carepointpc.com

Shari J. Welch, MD FACEP
3822 Brockbank Drive
Salt Lake City, UT 84124-3954
(H) 801.943.3308
sjwelch56@aol.com

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:** 2010 Ad.7 **Month and Year of most recent revision:** 2010-02 Ad.8 **What is your frequency for review/update of this measure?** TBD Ad.9 **When is the next scheduled review/update for this measure?**
Ad.10 **Copyright statement/disclaimers:**
Ad.11 -13 **Additional Information web page URL or attachment:**
Date of Submission (*MM/DD/YY*)**:** 05/07/2010

American College of Emergency Physicians®
ADVANCING EMERGENCY CARE

DATE: May 10, 2010

TO: NQF Ambulatory Care Steering Committee

FROM: Angela Franklin, Esq.

SUBJECT: ACEP Ambulatory Care Measure ACP-043-10: "Ultrasound guidance for internal jugular central venous catheter placement"

The American College of Emergency Physicians (ACEP) is pleased to submit this revision to its submitted measure, ACP-043-10 "*Ultrasound guidance for internal jugular central venous catheter placement".* The measure has been amended, per the Steering Committee's recommendation, to more clearly state in the denominator exclusions that clinicians who are not appropriately credentialed should be excluded from the measure. The change in the denominator exclusion was to restate exclusion # 5 as "Clinicians not credentialed in ultrasound guided central venous cannulation, or not credentialed in ultrasound guided procedures", as shown below.

2a.9. Denominator Exclusions *(Brief text description of exclusions from the target population)*

1. *Patients receiving central lines in other sites (subclavian, femora)*
2. *Patients with allergy to US gel*
3. *Central line placed in code situation (clinician documents that there was not time to perform ultrasound guidance)*
4. *US machine with high frequency linear probe not available*

   --Not at bedside due to time constraint

   --ED does not have access to ultrasound
5. ~~*Emergency physicians not credentialed to use US machine for procedural guidance*~~ *Clinicians not credentialed in ultrasound guided central venous cannulation, or not credentialed in ultrasound guided procedures*.

ACEP worded the revision in this way because many hospitals have "global" credentialing in ultrasound and thus credential under "procedural guidance" and do not delineate central venous catheter placement, nor to a greater extent, internal jugular central venous catheter placement. Please contact Angela J. Franklin, Director, Quality and Health IT, with any questions at (202) 728-0610 or afranklin@acep.org.