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 #: 1731 **NQF Project:** Perinatal and Reproductive Health Project
(for Endorsement Maintenance Review) Original Endorsement Date: Most Recent Endorsement Date:

BRIEF MEASURE INFORMATION
De.1 Measure Title: Health Care-Associated Bloodstream Infections in Newborns
Co.1.1 Measure Steward: The Joint Commission
De.2 Brief Description of Measure: This measure assesses the number of staphylococcal and gram negative septicemias or bacteremias in high-risk newborns. This measure is a part of a set of five nationally implemented measures that address perinatal care (PC-01: Elective Delivery, PC-02: Cesarean Section, PC-03: Antenatal Steroids, PC-05: Exclusive Breast Milk Feeding).
2a1.1 Numerator Statement: Newborns with septicemia or bacteremia with an ICD-9-CM Other Diagnosis Codes for septicemias as defined in Appendix A, Table 11.10.1 OR one or more ICD-9-CM Other Diagnosis Codes for newborn septicemia or bacteremia as defined in Appendix A, Table 11.10 and one diagnosis code for newborn bacteremia from Table 11.11 available at: http://manual.jointcommission.org
2a1.4 Denominator Statement: Liveborn newborns with an ICD-9-CM Other Diagnosis Codes for birth weight between 500 and 1499g as defined in Appendix A, Table 11.12, 11.13 or 11.14 OR Birth Weight between 500 and 1499g OR an ICD-9-CM Other Diagnosis Codes for birth weight = 1500g as defined in Appendix A, Table 11.15, 11.16 or 11.17 OR Birth Weight = 1500g who experienced one or more of the following: o   Experienced death o   ICD-9-CM Principal Procedure Code or ICD-9-CM Other Procedure Codes for major surgery as defined in Appendix A, Table 11.18 o   ICD-9-CM Principal Procedure Code or ICD-9-CM Other Procedure Codes for mechanical ventilation as defined in Appendix A, Table 11.19 o   Transferred in from another acute care hospital or health care setting within 2 days of birth.
2a1.8 Denominator Exclusions: • ICD-9-CM Principal Diagnosis Code for sepsis as defined in Appendix A, Table 11.10.2 •   ICD-9-CM Principal Diagnosis Code for liveborn newborn as defined in Appendix A, Table 11.10.3 AND ICD-9-CM Other Diagnosis Codes for newborn septicemia or bacteremia as defined in Appendix A, Table 11.10 •   ICD-9-CM Other Diagnosis Codes for birth weight < 500g as defined in Appendix A, Table 11.20 OR Birth Weight < 500g •   Length of Stay < 2 days OR > 120 days •   Enrolled in clinical trials
1.1 Measure Type: Outcome **2a1. 25-26 Data Source:** Administrative claims, Electronic Clinical Data, Paper Records **2a1.33 Level of Analysis:** Facility, Population : National **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*): Not Applicable

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*):   Perinatal
De.5 **Cross Cutting Areas** (*Check all the areas that apply*):   Safety : Healthcare Associated Infections

1a.1 Demonstrated High Impact Aspect of Healthcare: 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*):
Health care-associated bacteremia is a significant problem for infants admitted into neonatal intensive care units (NICUs) and other hospital units. This is especially true for very low birth weight infants who are at high risk for these infections due to their immature immune systems and need for invasive monitoring and supportive care (Adams-Chapman & Stoll, 2002; Bloom et al., 2003; Clark et al., 2004a; Clark et al., 2004b; Gaynes et al., 1996; Payne et al., 2004; Sohn et al., 2001; Stoll et al., 2002). Mortality rates are high and infections result in increased length of stay as well as increased hospital costs and charges (Adams-Chapman & Stoll, 2002; Bloom et al.,2003; Clark et al., 2004b; Horbar et al., 2001; Kilbride et al., 2003; Sohn et al.,2001; Stoll et al., 2002).
The incidence of health care-associated bacteremia increases with decreasing birth weight. Other risk factors include central venous catheter use, prolonged time using parenteral nutrition, prolonged time on mechanical ventilation (Adams-Chapman & Stoll, 2002; Barton et al., 1999; Gaynes et al., 1996; Perlman et al., 2007.; Stoll et al., 2002). The most common causative organisms are coagulase-negative staphylococci, Staphylococcus aureus, enterococci, Enterobacter sp, and Escherichia coli (Adams-Chapman & Stoll, 2002; Clark et al., 2004b; Gaynes et al., 1996; Horbar et al., 2001; Payne et al., 2004; Sohn et al., 2001; Stoll et al., 2002). According to the National Nosocomial Infections Surveillance System data, the incidence of late-onset Methicillin-resistant Staphylococcus aureus (MRSA) infections in neonatal intensive care units increased substantially between1995 and 2004 (Lessa, et al., 2009).
Effective preventive measures range from simple hand-washing protocols or closed medication delivery systems to more elaborate multidisciplinary quality improvement plans involving hand-washing, nutrition, skin care, respiratory care, vascular access, and diagnostic practices. All of these interventions have been shown to substantially reduce infection rates, albeit in nonrandomized studies using historical or concurrent control units (Adams-Chapman & Stoll, 2002; Aly et al., 2005; Bloom et al., 2003; Clark et al., 2004a; Clark et al., 2004b; Horbar et al., 2001; Lam et al., 2004; Kilbride et al., 2003a; Kilbride et al., 2003b; Ng et al., 2004; Schelonka et al., 2006). A reduction from 24.6% to 16.4% was achieved with a multi-modality, multi-hospital intervention focusing on hand hygiene with an effective agent before and after every patient contact, eliminating hand jewelry and artificial nails, using maximal barrier precautions during central venous catheter insertion, decreasing the number of skin punctures, reducing the duration of intravenous lipid and deep line use, and improving the diagnosis of health care-associated infections. (Kilbride et al., 2003a; Kilbride et al., 2003b). In a review of educational interventions aimed at neonatal nurses, catheter-related bloodstream infection (CR-BSI) rates decreased by 40% in 9 studies and 21% in one study (Semelsberger, 2009).
Given the fragility and susceptibility of the patient population, a baseline level of health care-associated infections will be expected, even with good protocols in place. However, those centers that have prevention protocols, and are able to encourage health care

workers to adhere to these protocols, will probably have success in reducing their rates of health care-associated bacteremia in their neonatal population. Indeed, several quasi-experimental studies have demonstrated that NICUs can lower their infection rates (based on positive blood cultures) from as high as 13.5 per 1,000 patient days to as low as 3.0 per 1,000 patient days(Adams-Chapman & Stoll, 2002; Aly et al., 2005; Bloom et al. ,2003; Clark et al., 2004a; Clark et al., 2004b; Horbar et al., 2001; Lam et al., 2004; Kilbride et al., 2003a; Kilbride et al., 2003b; Ng et al., 2004; Schelonka et al., 2006).

1a.4 Citations for Evidence of High Impact cited in 1a.3: • Adams-Chapman, I. & Stoll, B.J. (2002). Prevention of nosocomial infections in the neonatal intensive care unit. Current Opinion in Pediatrics.14 (2):157-64.
• Aly, H., Herson, V., Duncan, A., et al. (2005). Is bloodstream infection preventable among premature infants? A tale of two cities. Pediatrics. 115(6):1513-8.
• Barton, L., Hodgman, J.E., & Pavlova, Z. (1999). Causes of death in the extremely low birth weight infant. Pediatrics. 103(2):446-51.
• Bloom, B.T., Craddock, A., Delmore, P.M., et al. (2003). Reducing acquired infections in the NICU: observing and implementing meaningful differences in process between high and low acquired infection rate centers. Journal of Perinatology. 23(6):489-92.
• Clark, R., Powers, R., White, R., Bloom, B., Sanchez, P., & Benjamin, D.K., Jr. (2004a). Prevention and treatment of nosocomial sepsis in the NICU. Journal of Perinatology. 4; 24(7):446-53.
• Clark, R., Powers, R., White, R., Bloom, B., Sanchez, P., & Benjamin, D.K., Jr. (2004b). Nosocomial infection in the NICU: a medical complication or unavoidable problem? Journal of Perinatology. 24(6):382-8.
• Gaynes, R.P., Edwards, J.R., Jarvis, W.R., Culver, D.H., Tolson, J.S., & Martone, W.J. (1996). Nosocomial infections among neonates in high-risk nurseries in the United States. National Nosocomial Infections Surveillance System. Pediatrics. 98(3 Pt 1):357-61.
• Horbar, J.D., Rogowski, J., Plsek, P.E., et al. (2001). Collaborative quality improvement for neonatal intensive care. NIC/Q Project Investigators of the Vermont Oxford Network. Pediatrics. 107(1):14-22.
• Kilbride, H.W., Wirtschafter, D.D., Powers, R.J., & Sheehan, M.B. (2003a). Implementation of evidence-based potentially better practices to decrease nosocomial infections. Pediatrics. 111(4 Pt 2):e519-33.
• Kilbride, H.W., Powers, R., Wirtschafter, D.D., et al. (2003b). Evaluation and development of potentially better practices to prevent neonatal nosocomial bacteremia. Pediatrics. 111(4 Pt 2):e504-18.
• Lam, B.C., Lee, J., & Lau, Y.L. (2004). Hand Hygiene Practices in a Neonatal Intensive Care Unit: A Multimodal Intervention and Impact on Nosocomial Infection. Pediatrics.114 (5):e565.
• Lessa, F.C., Edwards, J.R., Fridkin, S.K., Tenover, F.C. & Gorwitz, R.J. (2009). Trends in incidence of late-onset Methicillin-resistant Staphylococcus aureus infectin in neonatal intensive care units: data from the National Nosocomial Infections Surveillance System, 1995-2004. Pediatric Infect. Dis, J. 28 (7).577-81.
• Ng, P.C., Wong, H.L., Lyon, D.J., et al. (2004). Combined use of alcohol hand rub and gloves reduces the incidence of late onset infection in very low birthweight infants. Archives of Disease in Childhood Fetal & Neonatal Edition. 89(4):F336-40.
• Payne, N.R., Carpenter, J.H., Badger, G.J., Horbar, J.D., & Rogowski, J. (2004). Marginal increase in cost and excess length of stay associated with nosocomial bloodstream infections in surviving very low birth weight infants. Pediatrics. 114(2):348-55.
• Perlman, S.E., Saiman, L., Larson, E.L. (2007). Risk factors for late-onset health care- associated bloodstream infections in patients in neonatal intensive care units. Am J. Infect Control Apr;35 (3):177-82.
• Schelonka, R.L., Scruggs, S., Nichols, K., Dimmitt, R.A., & Carlo, W.A. (2006). Sustained reductions in neonatal nosocomial infection rates following a comprehensive infection control intervention. Journal of Perinatology. 26(3):176-9.
• Semelsberger, C.F. (2009). Educational interventions to reduce the rate of catheter-related bloodstream infections in the NICU: a review of the research literature. Neonatal Netw. 28(6) 391-5.
• Sohn, A.H., Garrett, D.O., Sinkowitz-Cochran, R.L., et al. (2001). Prevalence of nosocomial infections in neonatal intensive care unit patients: Results from the first national point-prevalence survey. Journal of Pediatrics. 139(6):821-7.
• Stoll, B.J., Hansen, N., Fanaroff, A.A., et al. (2002). Late-onset sepsis in very low birth weight neonates: the experience of the NICHD Neonatal Research Network. Pediatrics. 110(2 Pt 1):285-91.

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 health care-associated bloodstream infection in high-risk newborns remains a major patient safety concern. Effective preventive measures range from simple hand-washing protocols or closed medication delivery systems to more elaborate multidisciplinary

quality improvement plans involving hand-washing, nutrition, skin care, respiratory care, vascular access, and diagnostic practices. Guidelines for the prevention of intravascular catheter-related infections are also available from the Centers for Disease Control and Prevention (CDC) to assist hospitals in establishing successful interventions to reduce the number of health care-associated bloodstream infections in newborns.

The measure will assist health care organizations (HCOs) to track evidence of a decrease in health care-associated bloodstream infections in newborns.

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.*]

Reported health care-associated infection rates range from 6% to 33%, but the rate varies widely among different centers (Adams-Chapman & Stoll, 2002; Bloom et al.,2003; Clark et al.,2004 ; Sohn et al.,2001; Stoll et al.,2002). Rates of catheter-related bloodstream infections (CR-BSIs) range from 11.3 per 1,000 catheter days in newborns <1000 Gms to 4 per 1000 catheter days in newborns >2500 Gms (Semelsberger, 2009). In a review of educational interventions aimed at neonatal nurses, catheter-related bloodstream infection (CR-BSI) rates decreased by 40% in 9 studies and 21% in one study (Semelsberger, 2009).

Based on 4 quarters of data reported to The Joint Commission, PC-04 has an aggregate performance rate of 0.3 %, indicating a potential performance gap of 0.3% if the optimal rate was 0%.

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*]

•   Adams-Chapman, I. & Stoll, B.J. (2002). Prevention of nosocomial infections in the neonatal intensive care unit. Current Opinion in Pediatrics.14 (2):157-64.

•   Bloom, B.T., Craddock, A., Delmore, P.M., et al. (2003). Reducing acquired infections in the NICU: observing and implementing meaningful differences in process between high and low acquired infection rate centers. Journal of Perinatology. 23(6):489-92.

•   Clark, R., Powers, R., White, R., Bloom, B., Sanchez, P., & Benjamin, D.K., Jr. (2004). Nosocomial infection in the NICU: a medical complication or unavoidable problem? Journal of Perinatology. 24(6):382-8.

•   Semelsberger, C.F. (2009). Educational interventions to reduce the rate of catheter-related bloodstream infections in the NICU: a review of the research literature. Neonatal Netw. 28(6) 391-5.

•   Sohn, A.H., Garrett, D.O., Sinkowitz-Cochran, R.L., et al. (2001). Prevalence of nosocomial infections in neonatal intensive care unit patients: Results from the first national point-prevalence survey. Journal of Pediatrics. 139(6):821-7.

•   Stoll, B.J., Hansen, N., Fanaroff, A.A., et al. (2002). Late-onset sepsis in very low birth weight neonates: the experience of the NICHD Neonatal Research Network. Pediatrics. 110(2 Pt 1):285-91.

•   The Joint Commission, unpublished data, 2011.

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

There is a great deal of literature supporting the standardization of aseptic care and educational interventions aimed at neonatal nurses to reduce the incidence of health care-associated bloodstream infections in newborns. There is no mention of disparities related to race or socioeconomic status regarding the incidence of health care associated bloodstream infections in newborns. Although the literature supports premature newborns with very low birth weight > 1500 g as the most vulnerable group of newborns susceptible to health care-associated bloodstream infections.

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*]

•   Adams-Chapman, I. & Stoll, B.J. (2002). Prevention of nosocomial infections in the neonatal intensive care unit. Current Opinion in Pediatrics.14 (2):157-64.

•   Bloom, B.T., Craddock, A., Delmore, P.M., et al. (2003). Reducing acquired infections in the NICU: observing and implementing meaningful differences in process between high and low acquired infection rate centers. Journal of Perinatology. 23(6):489-92.

•   Clark, R., Powers, R., White, R., Bloom, B., Sanchez, P., & Benjamin, D.K., Jr. (2004a). Prevention and treatment of nosocomial sepsis in the NICU. Journal of Perinatology. 4; 24(7):446-53.

•   Clark, R., Powers, R., White, R., Bloom, B., Sanchez, P., & Benjamin, D.K., Jr. (2004b). Nosocomial infection in the NICU:

a medical complication or unavoidable problem? Journal of Perinatology. 24(6):382-8.
• Gaynes, R.P., Edwards, J.R., Jarvis, W.R., Culver, D.H., Tolson, J.S., & Martone, W.J. (1996). Nosocomial infections among neonates in high-risk nurseries in the United States. National Nosocomial Infections Surveillance System. Pediatrics. 98(3 Pt 1):357-61.
• Payne, N.R., Carpenter, J.H., Badger, G.J., Horbar, J.D., & Rogowski, J. (2004). Marginal increase in cost and excess length of stay associated with nosocomial bloodstream infections in surviving very low birth weight infants. Pediatrics. 114(2):348-55.
• Sohn, A.H., Garrett, D.O., Sinkowitz-Cochran, R.L., et al. (2001). Prevalence of nosocomial infections in neonatal intensive care unit patients: Results from the first national point-prevalence survey. Journal of Pediatrics. 139(6):821-7.
• Stoll, B.J., Hansen, N., Fanaroff, A.A., et al. (2002). Late-onset sepsis in very low birth weight neonates: the experience of the NICHD Neonatal Research Network. Pediatrics. 110(2 Pt 1):285-91.

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 focus of the measure is to prevent health care associated bloodstream infections in newborns. Hospital develops an infection prevention program for newborns >> population determined >> population assessed >> prevention measures instituted >> no evidence of a health care associated bloodstream infection while in the hospital >> patient discharged >> no bloodstream infection detected related to hospitalization >> reduced morbidity/mortality related to blood stream infections.

1c.2-3 Type of Evidence (*Check all that apply*):
Clinical Practice Guideline, Systematic review of body of evidence (other than within guideline development)

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 central topic for the measure is the prevention of health care-associated bloodstream infections in newborns. The majority of high-risk newborns are at risk for health care-associated bloodstream infections. The target population for the performance measure is consistent with the body of evidence supporting the need for a health care-associated bloodstream infection prevention program.

1c.5 Quantity of Studies in the Body of Evidence (*Total number of studies, not articles*): There have been numerous cohort studies and surveillance surveys conducted since 1996 through 2009 documenting the prevalence of health care-associated bloodstream infections in newborns and the associated risk factors. Additionally, four databases were searched: PubMed, CINAHL, Cochrane and OVID to examine how educational interventions could help neonatal nurses reduce infection rates in patients with central venous catheters. Ten studies were identified which measured rates before and after interventions.
        The Cochrane Collaboration also reviewed eight randomized control trials regarding the use of prophylactic Vancomycin and other systemic antibiotics as other interventions to reduce the incidence of health care-associated bloodstream infections. Several observational studies were reviewed comparing the early removal of central venous catheters versus expectant

management.

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 quality of evidence supporting educational interventions aimed at neonatal nurses is quite high with studies published that have involved patients in neonatal intensive care units (NICUs). As noted in the CDC guidelines, standardization of aseptic care can reduce adverse patient outcomes while at the same time decreasing overall costs. Nine studies examining educational interventions aimed at neonatal nurses resulted in a 40% reduction in catheter-related bloodstream infections with eight demonstrating statistically significant reductions. No study design flaws were identified during the review.

1c.7 Consistency of Results across Studies (*Summarize the consistency of the magnitude and direction of the effect):* Results of studies evaluating educational interventions aimed at neonatal nurses show consistent findings of reductions in event rates of 21-40% in 10 studies. Several quasi-experimental studies have demonstrated that NICUs can lower their infection rates (based on positive blood cultures) from as high as 13.5 per 1,000 patient days to as low as 3.0 per 1,000 patient days. Reports spanning the past four decades have consistently demonstrated that risk for infection declines following standardization of aseptic care.

1c.8 Net Benefit (*Provide estimates of effect for benefit/outcome; identify harms addressed and estimates of effect; and net benefit - benefit over harms*):
As described before, educational interventions aimed at neonatal nurses show consistent findings of reductions in event rates of 21-40%.There is no evidence that standardized aseptic care, which is often a key component of nursing educational interventions, results in harm to patients.

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

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

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

1c.12 If other, identify and describe the grading scale with definitions: Although grading of the evidence was not determined during our systematic review, it was determined that the guideline developers accounted for a balanced representation of information, looked beyond one specialty group or discipline, and provided information that was accessible and met the requirements set out in this measure maintenance form.

1c.13 Grade Assigned to the Body of Evidence: Not Applicable

1c.14 Summary of Controversy/Contradictory Evidence: The use of Vancomycin and other systemic antibiotics and early removal of central venous catheters to reduce blood stream infections are controversial. Low dose Vancomycin and other systemic antibiotics reduce the incidence of health care-associated bloodstream infections, but there is concern regarding routine use and the development of resistant organisms. The early removal of central venous catheters may also be of benefit; however, there are no randomized control trials to validate this practice.

1c.15 Citations for Evidence other than Guidelines*(Guidelines addressed below)*:
•   Adams-Chapman, I. & Stoll, B.J. (2002). Prevention of nosocomial infections in the neonatal intensive care unit. Current Opinion in Pediatrics.14 (2):157-64.
•   Aly, H., Herson, V., Duncan, A., et al. (2005). Is bloodstream infection preventable among premature infants? A tale of two cities. Pediatrics. 115(6):1513-8.
•   Bloom, B.T., Craddock, A., Delmore, P.M., et al. (2003). Reducing acquired infections in the NICU: observing and implementing meaningful differences in process between high and low acquired infection rate centers. Journal of Perinatology. 23(6):489-92.
•   Clark, R., Powers, R., White, R., Bloom, B., Sanchez, P., & Benjamin, D.K., Jr. (2004a). Prevention and treatment of nosocomial sepsis in the NICU. Journal of Perinatology. 4; 24(7):446-53.

•   Clark, R., Powers, R., White, R., Bloom, B., Sanchez, P., & Benjamin, D.K., Jr. (2004b). Nosocomial infection in the NICU: a medical complication or unavoidable problem? Journal of Perinatology. 24(6):382-8.
•   Craft, A.P., Finer, N. & Barrington, K.J. (2009). Vancomycin for prophylaxis against sepsis in preterm neonates (Review). The Cochrane Collaboration. Issue 1.
•   Horbar, J.D., Rogowski, J., Plsek, P.E., et al. (2001). Collaborative quality improvement for neonatal intensive care. NIC/Q Project Investigators of the Vermont Oxford Network. Pediatrics. 107(1):14-22.
•   Jardine, L.A., Inglis, G.D.T. & Davies, M.W. (2010). Prophylactic systemic antibiotics to erduce morbidity and mortality in neonates with central venous catheters (Review). The Cochrane Collaboration. Issue 5.
•   Kilbride, H.W., Wirtschafter, D.D., Powers, R.J., & Sheehan, M.B. (2003a). Implementation of evidence-based potentially better practices to decrease nosocomial infections. Pediatrics. 111(4 Pt 2):e519-33.
•   Kilbride, H.W., Powers, R., Wirtschafter, D.D., et al. (2003b). Evaluation and development of potentially better practices to prevent neonatal nosocomial bacteremia. Pediatrics. 111(4 Pt 2):e504-18.
•   Lam, B.C., Lee, J., & Lau, Y.L. (2004). Hand Hygiene Practices in a Neonatal Intensive Care Unit: A Multimodal Intervention and Impact on Nosocomial Infection. Pediatrics.114 (5):e565.
•   Ng, P.C., Wong, H.L., Lyon, D.J., et al. (2004). Combined use of alcohol hand rub and gloves reduces the incidence of late onset infection in very low birthweight infants. Archives of Disease in Childhood Fetal & Neonatal Edition. 89(4):F336-40.
•   Schelonka, R.L., Scruggs, S., Nichols, K., Dimmitt, R.A., & Carlo, W.A. (2006). Sustained reductions in neonatal nosocomial infection rates following a comprehensive infection control intervention. Journal of Perinatology. 26(3):176-9.
•   Semelsberger, C.F. (2009). Educational interventions to reduce the rate of catheter-related bloodstream infections in the NICU: a review of the research literature. Neonatal Netw. 28(6) 391-5.
•   Vasudevan, C. & McGuire, W. (2011). Early removal versus expectant management of central venous catheters in neonates with bloodstream infection. (2111). The Cochrane Collaboration. Issue 8.

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

Summary of Recommendations

Education, Training and Staffing

1. Educate healthcare personnel regarding the indications for intravascular catheter use, proper procedures for the insertion and maintenance of intravascular catheters, and appropriate infection control measures to prevent intravascular catheter-related infections [7–15]. Category IA

2. Periodically assess knowledge of and adherence to guidelines for all personnel involved in the insertion and maintenance of intravascular catheters [7–15]. Category IA

3. Designate only trained personnel who demonstrate competence for the insertion and maintenance of peripheral and central intravascular catheters. [14–28]. Category IA

4. Ensure appropriate nursing staff levels in ICUs. Observational studies suggest that a higher proportion of "pool nurses" or an elevated patient–to-nurse ratio is associated with CRBSI in ICUs where nurses are managing patients with CVCs [29–31]. Category IB

Selection of Catheters and Sites Peripheral Catheters and Midline Catheters

1. In adults, use an upper-extremity site for catheter insertion. Replace a catheter inserted in a lower extremity site to an upper extremity site as soon as possible. Category II

2. In pediatric patients, the upper or lower extremities or the scalp (in neonates or young infants) can be used as the catheter insertion site [32, 33]. Category II

3. Select catheters on the basis of the intended purpose and duration of use, known infectious and non-infectious complications (e.g., phlebitis and infiltration), and experience of individual catheter operators [33–35]. Category IB

4. Avoid the use of steel needles for the administration of fluids and medication that might cause tissue necrosis if extravasation occurs [33, 34]. Category IA

5. Use a midline catheter or peripherally inserted central catheter (PICC), instead of a short peripheral catheter, when the duration of IV therapy will likely exceed six days. Category II

6. Evaluate the catheter insertion site daily by palpation through the dressing to discern tenderness and by inspection if a transparent dressing is in use. Gauze and opaque dressings should not be removed if the patient has no clinical signs of infection. If the patient has local tenderness or other signs of possible CRBSI, an opaque dressing should be removed and the site inspected visually. Category II

7. Remove peripheral venous catheters if the patients develop signs of phlebitis (warmth, tenderness, erythema or palpable venous

cord), infection, or a malfunctioning catheter [36]. Category IB

Central Venous Catheters
1. Weigh the risks and benefits of placing a central venous device at a recommended site to reduce infectious complications against the risk for mechanical complications (e.g., pneumothorax, subclavian artery puncture, subclavian vein laceration, subclavian vein stenosis, hemothorax, thrombosis, air embolism, and catheter misplacement) [37–53]. Category IA
2. Avoid using the femoral vein for central venous access in adult patients [38, 50, 51, 54]. Category 1A
3. Use a subclavian site, rather than a jugular or a femoral site, in adult patients to minimize infection risk for nontunneled CVC placement [50–52]. Category IB
4. No recommendation can be made for a preferred site of insertion to minimize infection risk for a tunneled CVC. Unresolved issue
5. Avoid the subclavian site in hemodialysis patients and patients with advanced kidney disease, to avoid subclavian vein stenosis [53,55–58]. Category IA
6. Use a fistula or graft in patients with chronic renal failure instead of a CVC for permanent access for dialysis [59]. Category 1A
7. Use ultrasound guidance to place central venous catheters (if this technology is available) to reduce the number of cannulation attempts and mechanical complications. Ultrasound guidance should only be used by those fully trained in its technique. [60–64]. Category 1B
8. Use a CVC with the minimum number of ports or lumens essential for the management of the patient [65–68]. Category IB
9. No recommendation can be made regarding the use of a designated lumen for parenteral nutrition. Unresolved issue
10. Promptly remove any intravascular catheter that is no longer essential [69–72]. Category IA
11. When adherence to aseptic technique cannot be ensured (i.e catheters inserted during a medical emergency), replace the catheter as soon as possible, i.e, within 48 hours [37,73–76]. Category IB

Hand Hygiene and Aseptic Technique
1. Perform hand hygiene procedures, either by washing hands with conventional soap and water or with alcohol-based hand rubs (ABHR). Hand hygiene should be performed before and after palpating catheter insertion sites as well as before and after inserting, replacing, accessing, repairing, or dressing an intravascular catheter. Palpation of the insertion site should not be performed after the application of antiseptic, unless aseptic technique is maintained [12, 77–79]. Category IB
2. Maintain aseptic technique for the insertion and care of intravascular catheters [37, 73, 74, 76]. Category IB
3. Wear clean gloves, rather than sterile gloves, for the insertion of peripheral intravascular catheters, if the access site is not touched after the application of skin antiseptics. Category IC
4. Sterile gloves should be worn for the insertion of arterial, central, and midline catheters [37, 73, 74, 76]. Category IA
5. Use new sterile gloves before handling the new catheter when guidewire exchanges are performed. Category II
6. Wear either clean or sterile gloves when changing the dressing on intravascular catheters. Category IC

Maximal Sterile Barrier Precautions
1. Use maximal sterile barrier precautions, including the use of a cap, mask, sterile gown, sterile gloves, and a sterile full body drape, for the insertion of CVCs, PICCs, or guidewire exchange [14, 75, 76, 80]. Category IB
2. Use a sterile sleeve to protect pulmonary artery catheters during insertion [81]. Category IB

Skin Preparation
1. Prepare clean skin with an antiseptic (70% alcohol, tincture of iodine, or alcoholic chlorhexidine gluconate solution) before peripheral venous catheter insertion [82]. Category IB
2. Prepare clean skin with a >0.5% chlorhexidine preparation with alcohol before central venous catheter and peripheral arterial catheter insertion and during dressing changes. If there is a contraindication to chlorhexidine, tincture of iodine, an iodophor, or 70% alcohol can be used as alternatives [82, 83]. Category IA
3. No comparison has been made between using chlorhexidine preparations with alcohol and povidone-iodine in alcohol to prepare clean skin. Unresolved issue.
4. No recommendation can be made for the safety or efficacy of chlorhexidine in infants aged <2 months. Unresolved issue
5. Antiseptics should be allowed to dry according to the manufacturer's recommendation prior to placing the catheter [82, 83]. Category IB

Catheter Site Dressing Regimens
1. Use either sterile gauze or sterile, transparent, semipermeable dressing to cover the catheter site [84–87]. Category IA
2. If the patient is diaphoretic or if the site is bleeding or oozing, use a gauze dressing until this is resolved [84–87]. Category II

3. Replace catheter site dressing if the dressing becomes damp, loosened, or visibly soiled [84, 85]. Category IB
4. Do not use topical antibiotic ointment or creams on insertion sites, except for dialysis catheters, because of their potential to promote fungal infections and antimicrobial resistance [88, 89]. Category IB
5. Do not submerge the catheter or catheter site in water. Showering should be permitted if precautions can be taken to reduce the likelihood of introducing organisms into the
Guidelines for the Prevention of Intravascular Catheter-Related Infections catheter (e.g., if the catheter and connecting device are protected with an impermeable cover during the shower) [90–92]. Category IB
6. Replace dressings used on short-term CVC sites every 2 days for gauze dressings. Category II
7. Replace dressings used on short-term CVC sites at least every 7 days for transparent dressings, except in those pediatric patients in which the risk for dislodging the catheter may outweigh the benefit of changing the dressing [87, 93]. Category IB
8. Replace transparent dressings used on tunneled or implanted CVC sites no more than once per week (unless the dressing is soiled or loose), until the insertion site has healed. Category II
9. No recommendation can be made regarding the necessity for any dressing on well-healed exit sites of long-term cuffed and tunneled CVCs. Unresolved issue
10. Ensure that catheter site care is compatible with the catheter material [94, 95]. Category IB
11. Use a sterile sleeve for all pulmonary artery catheters [81]. Category IB
12. Use a chlorhexidine-impregnated sponge dressing for temporary short-term catheters in patients older than 2 months of age if the CLABSI rate is not decreasing despite adherence to basic prevention measures, including education and training, appropriate use of chlorhexidine for skin antisepsis, and MSB [93, 96–98]. Category 1B
13. No recommendation is made for other types of chlorhexidine dressings. Unresolved issue
14. Monitor the catheter sites visually when changing the dressing or by palpation through an intact dressing on a regular basis, depending on the clinical situation of the individual patient. If patients have tenderness at the insertion site, fever without obvious source, or other manifestations suggesting local or bloodstream infection, the dressing should be removed to allow thorough examination of the site [99–101]. Category IB
15. Encourage patients to report any changes in their catheter site or any new discomfort to their provider. Category II

Patient Cleansing
Use a 2% chlorhexidine wash for daily skin cleansing to reduce CRBSI [102–104]. Category II
Catheter Securement Devices Use a sutureless securement device to reduce the risk of infection for intravascular catheters [105]. Category II

Antimicrobial/Antiseptic Impregnated Catheters and Cuffs
Use a chlorhexidine/silver sulfadiazine or minocycline/rifampin -impregnated CVC in patients whose catheter is expected to remain in place >5 days if, after successful implementation of a comprehensive strategy to reduce rates of CLABSI, the CLABSI rate is not decreasing. The comprehensive strategy should include at least the following three components: educating persons, who insert and maintain catheters, use of maximal sterile barrier precautions, and a >0.5% chlorhexidine preparation with alcohol for skin antisepsis during CVC insertion [106–113]. Category IA

Systemic Antibiotic Prophylaxis
Do not administer systemic antimicrobial prophylaxis routinely before insertion or during use of an intravascular catheter to prevent catheter colonization or CRBSI [114]. Category IB

Antibiotic/Antiseptic Ointments
Use povidone iodine antiseptic ointment or bacitracin/gramicidin/ polymyxin B ointment at the hemodialysis catheter exit site after catheter insertion and at the end of each dialysis session only if this ointment does not interact with the material of the hemodialysis catheter per manufacturer's recommendation *59, 115–119]. Category IB

Antibiotic Lock Prophylaxis, Antimicrobial Catheter Flush and Catheter Lock Prophylaxis
Use prophylactic antimicrobial lock solution in patients with long term catheters who have a history of multiple CRBSI despite optimal maximal adherence to aseptic technique [120– 138]. Category II

Anticoagulants
Do not routinely use anticoagulant therapy to reduce the risk of catheter-related infection in general patient populations [139]. Category II

Replacement of Peripheral and Midline Catheters
1. There is no need to replace peripheral catheters more frequently than every 72-96 hours to reduce risk of infection and phlebitis in adults [36, 140, 141]. Category 1B
2. No recommendation is made regarding replacement of peripheral catheters in adults only when clinically indicated [142–144]. Unresolved issue
3. Replace peripheral catheters in children only when clinically indicated [32, 33]. Category 1B
4. Replace midline catheters only when there is a specific indication. Category II
Replacement of CVCs, Including PICCs and Hemodialysis Catheters
1. Do not routinely replace CVCs, PICCs, hemodialysis catheters, or pulmonary artery catheters to prevent catheter-related infections. Category IB
2. Do not remove CVCs or PICCs on the basis of fever alone. Use clinical judgment regarding the appropriateness of removing the catheter if infection is evidenced elsewhere or if a noninfectious cause of fever is suspected. Category II
3. Do not use guidewire exchanges routinely for non-tunneled catheters to prevent infection. Category IB
4. Do not use guidewire exchanges to replace a non-tunneled catheter suspected of infection. Category IB
5. Use a guidewire exchange to replace a malfunctioning non-tunneled catheter if no evidence of infection is present. Category IB
6. Use new sterile gloves before handling the new catheter when guidewire exchanges are performed. Category II

Umbilical Catheters
1. Remove and do not replace umbilical artery catheters if any signs of CRBSI, vascular insufficiency in the lower extremities, or thrombosis are present [145]. Category II
2. Remove and do not replace umbilical venous catheters if any signs of CRBSI or thrombosis are present [145]. Category II
3. No recommendation can be made regarding attempts to salvage an umbilical catheter by administering antibiotic treatment through the catheter. Unresolved issue
4. Cleanse the umbilical insertion site with an antiseptic before catheter insertion. Avoid tincture of iodine because of the potential effect on the neonatal thyroid. Other iodine-containing products (e.g., povidone iodine) can be used [146– 150]. Category IB
5. Do not use topical antibiotic ointment or creams on umbilical catheter insertion sites because of the potential to promote fungal infections and antimicrobial resistance [88, 89]. Category IA
6. Add low-doses of heparin (0.25—1.0 U/ml) to the fluid infused through umbilical arterial catheters [151–153]. Category IB
7. Remove umbilical catheters as soon as possible when no longer needed or when any sign of vascular insufficiency to the lower extremities is observed. Optimally, umbilical artery catheters should not be left in place >5 days [145, 154]. Category II
8. Umbilical venous catheters should be removed as soon as possible when no longer needed, but can be used up to 14 days if managed aseptically [155, 156]. Category II
9. An umbilical catheter may be replaced if it is malfunctioning, and there is no other indication for catheter removal, and the total duration of catheterization has not exceeded 5 days for an umbilical artery catheter or 14 days for an umbilical vein catheter. Category II

Peripheral Arterial Catheters and Pressure Monitoring Devices for Adult and Pediatric Patients
1. In adults, use of the radial, brachial or dorsalis pedis sites is preferred over the femoral or axillary sites of insertion to reduce the risk of infection [46, 47, 157, 158]. Category IB
2. In children, the brachial site should not be used. The radial, dorsalis pedis, and posterior tibial sites are preferred over the femoral or axillary sites of insertion [46]. Category II
3. A minimum of a cap, mask, sterile gloves and a small sterile fenestrated drape should be used during peripheral arterial catheter insertion [47, 158, 159]. Category IB
4. During axillary or femoral artery catheter insertion, maximal sterile barriers precautions should be used. Category II
5. Replace arterial catheters only when there is a clinical indication. Category II
6. Remove the arterial catheter as soon as it is no longer needed. Category II
7. Use disposable, rather than reusable, transducer assemblies when possible [160–164]. Category IB
8. Do not routinely replace arterial catheters to prevent catheter-related infections [165, 166, 167, 168]. Category II
9. Replace disposable or reusable transducers at 96-hour intervals. Replace other components of the system (including the tubing, continuous-flush device, and flush solution) at the time the transducer is replaced [37, 161]. Category IB
10. Keep all components of the pressure monitoring system (including calibration devices and flush solution) sterile [160, 169–171]. Category IA
11. Minimize the number of manipulations of and entries into the pressure monitoring system. Use a closed flush system (i.e,

continuous flush), rather than an open system (i.e, one that requires a syringe and stopcock), to maintain the patency of the pressure monitoring catheters [163, 172]. Category II

12. When the pressure monitoring system is accessed through a diaphragm, rather than a stopcock, scrub the diaphragm with an appropriate antiseptic before accessing the system [163]. Category IA

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13. Do not administer dextrose-containing solutions or parenteral nutrition fluids through the pressure monitoring circuit [163, 173, 174]. Category IA

14. Sterilize reusable transducers according to the manufacturers' instructions if the use of disposable transducers is not feasible [163, 173–176]. Category IA

Replacement of Administration Sets

1. In patients not receiving blood, blood products or fat emulsions, replace administration sets that are continuously used, including secondary sets and add-on devices, no more frequently than at 96-hour intervals, [177] but at least every 7 days [178–181]. Category IA

2. No recommendation can be made regarding the frequency for replacing intermittently used administration sets. Unresolved issue

3. No recommendation can be made regarding the frequency for replacing needles to access implantable ports. Unresolved issue

4. Replace tubing used to administer blood, blood products, or fat emulsions (those combined with amino acids and glucose in a 3-in-1 admixture or infused separately) within 24 hours of initiating the infusion [182–185]. Category IB

5. Replace tubing used to administer propofol infusions every 6 or 12 hours, when the vial is changed, per the manufacturer's recommendation (FDA website Medwatch) *186+. Category IA

6. No recommendation can be made regarding the length of time a needle used to access implanted ports can remain in place. Unresolved issue

Needleless Intravascular Catheter Systems

1. Change the needleless components at least as frequently as the administration set. There is no benefit to changing these more frequently than every 72 hours. [39, 187–193]. Category II

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2. Change needleless connectors no more frequently than every 72 hours or according to manufacturers' recommendations for the purpose of reducing infection rates *187, 189, 192, 193]. Category II

3. Ensure that all components of the system are compatible to minimize leaks and breaks in the system [194]. Category II

4. Minimize contamination risk by scrubbing the access port with an appropriate antiseptic (chlorhexidine, povidone iodine, an iodophor, or 70% alcohol) and accessing the port only with sterile devices [189, 192, 194–196]. Category IA

5. Use a needleless system to access IV tubing. Category IC

6. When needleless systems are used, a split septum valve may be preferred over some mechanical valves due to increased risk of infection with the mechanical valves [197–200]. Category II

Performance Improvement

Use hospital-specific or collaborative-based performance improvement initiatives in which multifaceted strategies are "bundled" together to improve compliance with evidence-based recommended practices [15, 69, 70, 201–205]. Category IB

1c.17 **Clinical Practice Guideline Citation:** • O´Grady, N.P., Alexander, M., Burns, L.A., Dellinger, P., Garland, J., Heard, S.O., Lipsett, P.A. et al. (2011). Guidelines for the prevention of intravascular catheter-related infections, 2011. Centers for Disease Control and Prevention. Retrieved August 9, 2011 at: http://www.cdc.gov/hicpac/pdf/guidelines/bsi-guidelines-2011.pdf

1c.18 **National Guideline Clearinghouse or other URL:** http://www.cdc.gov/hicpac/pdf/guidelines/bsi-guidelines-2011.pdf

1c.19 **Grading of Strength of Guideline Recommendation.** Has the recommendation been graded? Yes

1c.20 **If guideline recommendation graded, identify the entity that graded the evidence including balance of representation and any disclosures regarding bias:** The Centers for Disease Control and Prevention

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 system for categorizing recommendations in this guideline is as follows:

Category IA. Strongly recommended for implementation and strongly supported by well-designed experimental, clinical, or epidemiologic studies.

Category IB. Strongly recommended for implementation and supported by some experimental, clinical, or epidemiologic studies and a strong theoretical rationale; or an accepted practice (e.g., aseptic technique) supported by limited evidence.

Category IC. Required by state or federal regulations, rules, or standards.

Category II. Suggested for implementation and supported by suggestive clinical or epidemiologic studies or a theoretical rationale. Unresolved issue. Represents an unresolved issue for which evidence is insufficient or no consensus regarding efficacy exists.

1c.23 Grade Assigned to the Recommendation: Varies with the majority of recommendations Level I or II

1c.24 Rationale for Using this Guideline Over Others: These guidelines have been developed for healthcare personnel who insert intravascular catheters and for persons responsible for surveillance and control of infections in hospital, outpatient, and home healthcare settings. This report was prepared by a working group comprising members from professional organizations representing the disciplines of critical care medicine, infectious diseases, healthcare infection control, surgery, anesthesiology, interventional radiology, pulmonary medicine, pediatric medicine, and nursing. The working group was led by the Society of Critical Care Medicine (SCCM), in collaboration with the Infectious Diseases Society of America (IDSA), Society for Healthcare Epidemiology of America (SHEA), Surgical Infection Society (SIS), American College of Chest Physicians (ACCP), American Thoracic Society (ATS), American Society of Critical Care Anesthesiologists (ASCCA), Association for Professionals in Infection Control and Epidemiology (APIC), Infusion Nurses Society (INS), Oncology Nursing Society (ONS), American Society for Parenteral and Enteral Nutrition (ASPEN), Society of Interventional Radiology (SIR), American Academy of Pediatrics (AAP), Pediatric Infectious Diseases Society (PIDS), and the Healthcare Infection Control Practices Advisory Committee (HICPAC) of the Centers for Disease Control and Prevention (CDC) and is intended to replace the Guideline for Prevention of Intravascular Catheter-Related Infections published in 2002. These guidelines are intended to provide evidence-based recommendations for preventing intravascular catheter-related infections.

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: High **1c.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, underlined 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://manual.jointcommission.org

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)*:
Newborns with septicemia or bacteremia with an ICD-9-CM Other Diagnosis Codes for septicemias as defined in Appendix A, Table 11.10.1 OR one or more ICD-9-CM Other Diagnosis Codes for newborn septicemia or bacteremia as defined in Appendix A, Table 11.10 and one diagnosis code for newborn bacteremia from Table 11.11 available at: http://manual.jointcommission.org

2a1.2 Numerator Time Window *(The time period in which the target process, condition, event, or outcome is eligible for inclusion)*:
Episode of care

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)*:
One data element is used to calculate the numerator:

1.   ICD-9-CM Other Diagnosis Codes- The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) codes associated with the secondary diagnoses for this hospitalization.
Cases are eligible for the numerator population with ICD-9-CM Other Diagnosis Code for septicemias OR one or more ICD-9-CM Other Diagnosis Codes for newborn septicemia or bacteremia and one diagnosis code for newborn bacteremia.

2a1.4 Denominator Statement *(Brief, narrative description of the target population being measured)*:
Liveborn newborns with an ICD-9-CM Other Diagnosis Codes for birth weight between 500 and 1499g as defined in Appendix A, Table 11.12, 11.13 or 11.14 OR Birth Weight between 500 and 1499g OR an ICD-9-CM Other Diagnosis Codes for birth weight = 1500g as defined in Appendix A, Table 11.15, 11.16 or 11.17 OR Birth Weight = 1500g who experienced one or more of the following:
o   Experienced death
o   ICD-9-CM Principal Procedure Code or ICD-9-CM Other Procedure Codes for major surgery as defined in Appendix A, Table 11.18
o   ICD-9-CM Principal Procedure Code or ICD-9-CM Other Procedure Codes for mechanical ventilation as defined in Appendix A, Table 11.19
o   Transferred in from another acute care hospital or health care setting within 2 days of birth.

2a1.5 Target Population Category *(Check all the populations for which the measure is specified and tested if any)*: Populations at Risk

2a1.6 Denominator Time Window *(The time period in which cases are eligible for inclusion)*:
Episode of care

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*):
Twelve data elements are used to calculate the denominator:

1. Admission Date – The month, day and year of admission to acute inpatient care.
2. Admission Type- The code indicating priority/type of admission.
3. Birth Weight- The weight (in grams) of a newborn at the time of delivery.
4. Birthdate - The month, day and year the patient was born.
5. Clinical Trial - Documentation that during this hospital stay the patient was enrolled in a clinical trial in which patients who are newborns were being studied. Allowable values: Yes or No/UTD
6. Discharge Date – The month day and year the patient was discharged from acute care, left against medical advice or expired during the stay.
7. Discharge Status - The place or setting to which the patient was discharged.
8. ICD-9-CM Other Diagnosis Codes - The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)

codes associated with the secondary diagnoses for this hospitalization.
9. ICD-9-CM Other Procedure Codes - The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code that identifies significant procedures performed other than the principal procedure during this hospitalization.
10. ICD-9-CM Principal Diagnosis Code - The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code associated with the diagnosis established after study to be chiefly responsible for occasioning the admission of the patient for this hospitalization.
11. ICD-9-CM Principal Procedure Code - The International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) code that identifies the principal procedure performed during this hospitalization. The principal procedure is the procedure performed for definitive treatment rather than diagnostic or exploratory purposes, or which is necessary to take care of a complication.
12. Point of Origin for Admission or Visit- The code indicating the point of patient origin for this admission.

2a1.8 Denominator Exclusions *(Brief narrative description of exclusions from the target population)*:
•   ICD-9-CM Principal Diagnosis Code for sepsis as defined in Appendix A, Table 11.10.2
•   ICD-9-CM Principal Diagnosis Code for liveborn newborn as defined in Appendix A, Table 11.10.3 AND ICD-9-CM Other Diagnosis Codes for newborn septicemia or bacteremia as defined in Appendix A, Table 11.10
•   ICD-9-CM Other Diagnosis Codes for birth weight < 500g as defined in Appendix A, Table 11.20 OR Birth Weight < 500g
•   Length of Stay < 2 days OR > 120 days
•   Enrolled in clinical trials

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)*:
•   Patients with ICD-9-CM Principal Diagnosis Code for sepsis are excluded.
•   Patients with ICD-9-CM Principal Diagnosis Code for liveborn newborn and ICD-9-CM Other Diagnosis Codes for newborn septicemia are excluded.
•   Patients with ICD-9-CM Other Diagnosis Codes for birth weight <500 grams OR a birth weight <500 grams are excluded.
•   Length of stay (LOS) in days is equal to the Discharge Date minus the Admission Date. If the LOS is greater than 120 days or equal to or less than 2 days, the patient is excluded.
•   Patients are excluded if "Yes" is selected for Clinical Trial.

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)*:
Not applicable, the measure is not stratified.

2a1.11 Risk Adjustment Type *(Select type. Provide specifications for risk stratification in 2a1.10 and for statistical model in 2a1.13)*: Statistical risk model   **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.)*:
Logistic regression
Model Risk Factors:
Intercept   Intercept
Birth Weight   1250g to 2499g
Birth Weight   1000 to 1249g
Birth Weight   500 to 999g
Modified DRG   Newborn Transfers Out or Died
Congenital Anomaly   Gastrointestinal Anomaly
Congenital Anomaly   Cardiovascular Anomaly
Congenital Anomaly   Other Anomaly
Out-born Birth   Newborns Transfers In

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:
URL
http://www.qualityindicators.ahrq.gov/Modules/pdi_resources.aspx

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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 = Lower score

2a1.20 **Calculation Algorithm/Measure Logic** *(Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.)*:
1.   Start processing. Run cases that are included in the PC-Newborn Initial Patient Newborns with BSI and pass the edits defined in the Transmission Data Processing Flow: Clinical through this measure.
2.   Calculate Length of Stay. Length of Stay, in days, is equal to the Discharge Date   minus the Admission Date.

3.   Check Length of Stay
a.   If Length of Stay is less than 2 days, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
b.   If Length of Stay is greater than or equal to 2 days, continue processing and proceed to Clinical Trial.

4.   Check Clinical Trial
a.   If Clinical Trial is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
b.   If Clinical Trial equals Yes, the case will proceed to a Measure Category Assignment of B and will not be in the measure population. Stop processing.
c.   If Clinical Trial equals No, continue processing and proceed to ICD-9-CM Other Diagnosis Code.

5.   Check ICD-9-CM Other Diagnosis Codes
a.   If at least one of the ICD-9-CM Other Diagnosis Codes is on Table 11.12, 11.13, 11.14, continue processing and proceed to recheck ICD-9-CM Other Diagnosis Code (Step 8).
b.   If all of the ICD-9-CM Other Diagnosis Codes are missing, continue processing and proceed to Birth Weight (Step 7).
c.   If none of the ICD-9-CM Other Diagnosis Codes is on Table 11.12, 11.13, 11.14, continue processing and proceed to recheck ICD-9-CM Other Diagnosis Codes (Step 6).

6.   Recheck ICD-9-CM Other Diagnosis Codes
a.   If at least one of the ICD-9-CM Other Diagnosis Codes on table 11.15, 11.16, 11.17, continue processing and proceed to ICD-9-CM Other Diagnosis Code (Step 8).
b.   If none of the ICD-9-CM Other Diagnosis Codes on table 11.15, 11.16, 11.17, continue processing and proceed to Birth Weight.

7.   Check Birth Weight
a.   If Birth Weight is missing, the case will proceed to a Measure Category Assignment of X and will be rejected. Stop processing.
c.   If Birth Weight equals a Non Unable to Determine Value, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing.
d.   If Birth Weight dose not equal a Non Unable to Determine Value, continue processing and proceed to ICD-9-CM Other Diagnosis Codes (Step 8).

8.   Check ICD-9-CM Other Diagnosis Codes
a.   If all of the ICD-9-CM Other Diagnosis Codes are missing or none of the ICD-9-CM Other Diagnosis Codes is on table 11.10, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.

b.	If at least one of the ICD-9-CM Other Diagnosis Codes on table 11.10, continue processing and proceed to Recheck ICD-9-CM Other Diagnosis Code.

9.	Recheck ICD-9-CM Other Diagnosis Code
a.	If none of the ICD-9-CM Other Diagnosis Codes is on table 11.11, the case will proceed to a Measure Category Assignment of D and will be in the Measure Population. Stop processing.
b.	If at least one of the ICD-9-CM Other Diagnosis Codes is on table 11.11, the case will proceed to a Measure Category Assignment of E and will be in the Numerator Population. Stop processing.

2a1.21-23 Calculation Algorithm/Measure Logic Diagram URL or attachment:
URL
http:manual.jointcommission.org

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 is not allowed for this measure.

2a1.25 Data Source (*Check all the sources for which the measure is specified and tested*). If other, please describe:
 Administrative claims, Electronic Clinical Data, 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.*): Each data element in the data dictionary includes suggested data sources. The data are collected using contracted Performance Measurement Systems (vendors) that develop data collection tools based on the measure specifications. The tools are verified and tested by Joint Commission staff to confirm the accuracy and conformance of the data collection tool with the measure specifications. The vendor may not offer the measure set to hospitals until verification as been passed.

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

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

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

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

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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*):
The PC measure set has been in national use since the 2nd quarter of 2010. It is a requirement of participation in the ORYX initiative that data on all measures in the set are collected.   (ORYX is the term used by The Joint Commission to describe the component of the hospital accreditation program which requires data collection and reporting on standardized national performance measures.) Demographics of organizations collecting and reporting data on these measures i are as follows:
163 health care organizations representing various types, locations and sizes:
10 For Profit, 91 Not for Profit, 46 Military Facilities, 9 County, 2 State, 5 Other
15 >=500 beds; 29 250-499 beds; 50 100-249 beds; 69 <100 beds
Located in: AE, AK, AL, AP, AR, AZ, CA, DO, DC, FL, GA, HI, ID, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, MT, NC, NE, NV, NY, OH,OK, PA, PR, RI, SC, TN, TX, VA, WA, WI, WV

26 performance measurement systems

2a2.2 Analytic Method *(Describe method of reliability testing & rationale)*:
This measure was adapted from NQF-endorsed measure 0478 Nosocomial Blood Stream Infection in Neonates. As such, reliability was addressed during the original endorsement. The Joint Commission will be conducting further reliability studies on the entire PC measure set beginning in late 2011.

Currently, hospitals are supported in their data collection and reporting efforts by 26 contracted performance measurement system (PMS) vendors. It is a contractual requirement of Joint Commission listed vendors that the quality and reliability of data submitted to them by contracted health care organizations must be monitored on a quarterly basis. In addition, The Joint Commission analyzes these data by running 17 quality tests on the data submitted into ORYX. (ORYX is the term used by The Joint Commission to describe the component of the hospital accreditation program which requires data collection and reporting on standardized national performance measures). The following is a list of the major tests done on the submitted ORYX data, taken from the 2011 ORYX Performance Measurement System Requirements manual.

- Transmission of complete data
- Usage of individual core measure data received: To understand if the HCO provides the relevant service to treat the relevant population
- Investigation of aberrant data points
- Verification of patient population and sample size
- Identification of missing data elements
- Validation of the accuracy of target outliers
- Data integrity
- Data corrections

Data Element Agreement Rate:
Inter-rater reliability testing methodology utilized by contracted performance measure system vendors as outlined in the contract is as follows:
- All clinical data elements and all editable demographic elements are scored.
- All measure data are reabstracted with originally abstracted data having been blinded so that the reabstraction is not biased.
- Reabstracted data are compared with originally abstracted data on a data element by data element basis. A data element agreement rate is calculated. Clinical and demographic data are scored separately, and an overall agreement rate is computed.

2a2.3 Testing Results *(Reliability statistics, assessment of adequacy in the context of norms for the test conducted)*:
Data element agreement rates were reported to The Joint Commission for 1Q11 This reflects the findings of 106 hospitals, comprising 26,302 records (100% sample). The following table delineates calculated agreement rates for individual data elements that are used to compute measure rates for PC-04.

Data Elements with a Mismatch - Newborn	total n	total d	rate
Admission Date	661	662	99.85%
Admission Type	661	662	99.85%
Birth Weight	623	662	94.11%
Point of Origin for Admission or Visit	671	672	99.85%

These agreement rates are considered to be well within acceptable levels.

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:**
This measure focuses on the rate of health care-associated bloodstream infections in vulnerable newborns. The literature supports the focus on very low birth weight newborns with immature immune systems and newborns requiring mechanical ventilation and invasive procedures. Accordingly, this measure excludes newborns born with an infection at both the reporting and transferring hospital and those with extreme prematurity with a birth weight less than 500 gms. Also excluded from the measure are patients with a length of stay greater than 120 days, and those enrolled in a clinical trial. These exclusions are not addressed in the literature, but are included for this measure in order to harmonize with other CMS/Joint Commission aligned measures. In addition,

those with a length of stay less than 2 days are excluded since these patients will typically be transferred to a higher level of care who will track these patients.

The use of this measure reflects The Joint Commission's original 2006, and renewed 2011, National Patient Safety Goal for Hospitals, Requirement 07.03.01 to "Implement evidence-based practices to prevent health care–associated infections due to multidrug-resistant organisms in acute care hospitals" and the 2009 and renewed Requirement 07.04.01 to "Implement evidence-based practices to prevent central line–associated bloodstream infections".

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*)**:**
The PC measure set has been in national use since the 2nd quarter of 2010. Demographics of organizations collecting and reporting data on these measures s are as follows:
163 health care organizations representing various types, locations and sizes:
10 For Profit, 91 Not for Profit, 46 Military Facilities, 9 County, 2 State, 5 Other
15 >=500 beds; 29 250-499 beds; 50 100-249 beds; 69 <100 beds

Located in: AE, AK, AL, AP, AR, AZ, CA, DO, DC, FL, GA, HI, ID, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, MT, NC, NE, NV, NY, OH,OK, PA, PR, RI, SC, TN, TX, VA, WA, WI, WV

2b2.2 Analytic Method (*Describe method of validity testing and rationale; if face validity, describe systematic assessment*)**:**
Since the measure has been in national use, continued face validity of the measure has been determined through analysis of feedback from measure users. The Joint Commission provides a web-based application with which measure users can provide feedback regarding appropriateness of measure specifications, request clarification of specifications, and/or provide other comments pertinent to the measure.   This feedback is systematically continually reviewed in order to identify trends and to identify areas of the measure specifications that require clarification or revision. Additionally, Joint Commission staff continually monitors the national literature and environment in order to assess continued validity of this measure.

In addition, The Joint Commission will begin reliability site visits this year. During the site visits, Joint Commission staff will conduct focus group interviews with hospital staff working with the PC measures to obtain feedback regarding the validity of the measures and suggestions for further refinement of the specifications.

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*)**:**
Analysis of feedback obtained via our automated feedback system reveals slightly more than 20 submissions regarding specifications for this measure since its implementation in 2010. Predominant themes of these submissions involved questions regarding clarification of the data elements Point of Origin for Admission or Visit and Admission with respect to classification of births outside of the hospital. Additional notes for abstractors were added to the data elements for clarification. Other notes for abstractors were added to the data element admission date to clarify the date of delivery is used as the admission date and not the date of the order written to admit. In addition, the denominator excluded population and algorithm were revised to capture newborns born with infections born both inside and outside of the reporting hospital with additional ICD-9-CM diagnosis code tables.

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*)**:**
The PC measure set has been in national use since the 2nd quarter of 2010. Demographics of organizations collecting and reporting data on these measures are as follows:
163 health care organizations representing various types, locations and sizes:
10 For Profit, 91 Not for Profit, 46 Military Facilities, 9 County, 2 State, 5 Other
15 >=500 beds; 29 250-499 beds; 50 100-249 beds; 69 <100 beds

Located in: AE, AK, AL, AP, AR, AZ, CA, DO, DC, FL, GA, HI, ID, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, MT, NC, NE,

NV, NY, OH,OK, PA, PR, RI, SC, TN, TX, VA, WA, WI, WV
26 performance measurement systems

2b3.2 Analytic Method (*Describe type of analysis and rationale for examining exclusions, including exclusion related to patient preference)*:
Measure exclusions that were not derived directly from the evidence are presented below. Please note that these are population exclusions that are necessary to ensure consistency in all measures in this 5 measure set.

These exclusions were analyzed for frequency of occurrence. An issue that is of great concern to users of this measure is that due to the presence of exceptions to the measure, attainment of a 0% measure rate is not possible. Because of the role of this measure in the current Joint Commission accreditation process, this is especially troubling to measure users.   This concern is the basis for a number of the non-evidence-based exclusions to these measures. above. The following measure exclusions that were not derived directly from the evidence are as follows:

1.   Patients with LOS <120 days
2.   Patients with LOS >2 days
3.   Patients enrolled in clinical trials

2b3.3 Results *(Provide statistical results for analysis of exclusions, e.g., frequency, variability, sensitivity analyses):*
N=356,671
1.   Patients who have a length of stay (LOS) less than two days and greater than 120 days =3.64%
2.   Patients enrolled in clinical trials =0.02%

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)*:
Data source for the risk model was the 2007 State Inpatient Data, Healthcare Cost and Utilization Project, Agency for Healthcare Research and Quality. Initial risk factors were chosen based on clinical input and published research.

2b4.2 Analytic Method (*Describe methods and rationale for development and testing of risk model or risk stratification including selection of factors/variables)*:
Initial development of the risk model was done by AHRQ for measure NQI #03. A regression model including these risk groupings was then developed. Selection of risk factors was based on clinical knowledge, those used in previous studies or research protocols 2-5 and the data that would be consistently available in administrative databases. These included: birthweight (in 250 gram intervals), gender, multiple gestation, and gender and birthweight interacted. Risk factors were selected using the logistic regression stepwise selection method.

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)*:
The c-statistic for the initially developed risk model was 0.744.

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

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)*:
As previously noted the PC measure set has been in national use since the 2nd quarter of 2010. Demographics of organizations collecting and reporting data on these measures are as follows:
163 health care organizations representing various types, locations and sizes:

See Guidance for Definitions of Rating Scale: H=High; M=Moderate; L=Low; I=Insufficient; NA=Not Applicable   19

10 For Profit, 91 Not for Profit, 46 Military Facilities, 9 County, 2 State, 5 Other
15 >=500 beds; 29 250-499 beds; 50 100-249 beds; 69 <100 beds
Located in: AE, AK, AL, AP, AR, AZ, CA, DO, DC, FL, GA, HI, ID, IL, IN, KS, KY, LA, MA, MD, MI, MN, MO, MS, MT, NC, NE, NV, NY, OH,OK, PA, PR, RI, SC, TN, TX, VA, WA, WI, WV
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2b5.2 Analytic Method *(Describe methods and rationale to identify statistically significant and practically/meaningfully differences in performance)*:
The method used to analyze meaningful differences in performance at The Joint Commission is Target Analysis. The object of target analysis is to compare a health care organizations (HCO) data against a comparative norm for the purpose of evaluating performance improvement opportunities. When an organization's performance level is statistically significantly different from a comparative norm, it is considered a statistical deviation. A statistical deviation may be desirable or undesirable depending on the "direction of improvement" of the measure.
There are two components to the target analysis methodology used at The Joint Commission. Given the national average for a performance measure, a target range is constructed. Using generalized linear mixed models methodology (also known as hierarchical models), a predicted estimate of an HCO's performance, with a corresponding 95% confidence interval, is generated. This confidence interval is compared to the target range, to determine the HCOs' rating. The estimate of the organization's true performance is based on both the data from that organization and on data from the entire set of reporting organizations.

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)*:
 PC-04 Distribution of Outliers

2011 1st Quarter Data:
Scores on this measure: N=79, Mean 1.78%, SD 0.1134
10th Percentile= 0%
25th Percentile= 0%
50th Percentile= 0%
75th Percentile= 0%
90th Percentile= 1.64%

79 (100%) Neutral – results not significantly different from target range

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)*:
Multiple data sources are not used for this measure.

2b6.2 Analytic Method *(Describe methods and rationale for testing comparability of scores produced by the different data sources specified in the measure)*:
Not applicable

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)*:
Not applicable

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

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

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

2.1-2.3 Supplemental Testing Methodology Information:

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

3. USABILITY

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

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

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

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

3a.1. Use in Public Reporting - disclosure of performance results to the public at large *(If used in a public reporting program, provide name of program(s), locations, Web page URL(s)).* If not publicly reported in a national or community program, state the reason AND plans to achieve public reporting, potential reporting programs or commitments, and timeline, e.g., within 3 years of endorsement: [*For Maintenance – If not publicly reported, describe progress made toward achieving disclosure of performance results to the public at large and expected date for public reporting; provide rationale why continued endorsement should be considered.*]

The Joint Commission has a longstanding commitment to providing meaningful information about the comparative performance of accredited organizations to the public. The Quality Check® Web site, www.qualitycheck.org, launched in 1996, fulfills this commitment. Among other things, Quality Check allows consumers to view or download free hospital performance measure results.   Measure rates for PC-04 (and all the PC measures) will be included in the hospital performance measure results beginning in 2012.

3a.2.Provide a rationale for why the measure performance results are meaningful, understandable, and useful for public reporting. If usefulness was demonstrated (e.g., focus group, cognitive testing), describe the data, method, and results: All measure specifications (e.g., numerator, denominator, exclusions, data elements and measure calculation algorithms) are standardized in order to produce consistent measure results. Specifications are updated biannually based on feedback from vendors, and hospitals, as well as technical advisory member recommendations and updated clinical practice guidelines. Data are collected using data collection tools that have been verified by The Joint Commission to accurately collect measure data elements and compute measure assignment categories according to the measure specifications.   Quarterly data reported to The Joint Commission are subject to a number of data quality tests to ensure the accuracy of the data. The measure rate is computed using a standardized measure calculation algorithm.

The Joint Commission provides an opportunity for abstractors to submit questions and feedback about the measure specifications via an on-line website. As discussed previously, this information is used to evaluate the need for revisions and provide abstractors with a database of frequently asked questions. Measure updates and issues about the measures are presented and discussed at an annual performance measurement system vendor conference. These activities support the Joint Commission's effort to provide results that are useable, understandable and useful for public reporting.

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): The Joint Commission is a national (and international) accreditor of hospitals and other healthcare organizations. This measure set is one of 10 available measure sets from which hospitals can select to meet The Joint Commission´s ORYX accreditation program requirement for data collection and reporting. Additional information located at:
http://www.jointcommission.org/facts_about_oryx_for_hospitals/

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*].
While The Joint Commission developed this measure for and uses results from this measure in its accreditation activities, the measure is also intended for use in internal quality improvement by accredited organizations.

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:
From an accreditation perspective, measure results have proven useful in that they are used in the Priority Focus Process, which helps to focus accreditation survey activities toward areas of greatest need. From the hospital quality improvement perspective, measure rates are included in the Joint Commission's Strategic Surveillance System (S3) product, which is made available, at no additional cost to accredited organizations and is used by them to identify gaps in the care they provide relative to other measure users. Aggregate measure results have improved over time, indicating that they are being used by hospitals to identify and address areas in need of improvement. . Since this measure was introduced nationally in 2010, aggregate performance has improved PC-04 began with 2010 Quarter 2 reporting data at 0.3 % or a performance gap of 0.3 %, There has been consistent improvement in aggregate performance rates for the following consecutive four quarters, with the most recent 2011 Quarter 1 reportable performance at 0.006 %.

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:
generated by and used by healthcare personnel during the provision of care, e.g., blood pressure, lab value, medical condition, 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)*: ALL data elements in electronic claims

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:
The initial patient population algorithm for PC-04 was revised because patients born with an infection at the reporting hospital were not excluded from the measure. In response, the ICD-9-CM diagnosis tables were updated and a new table was added to identify

those patients. Since implementation, the Notes for Abstraction section of the data elements has been updated to clarify issues that have been identified after review of the feedback received from measure users.

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)*:

At the present time, hospitals using this performance measure generally collect measure data via manual review of the paper medical record, the EMR or a combination of both. Collected data are submitted to The Joint Commission on a quarterly basis, by way of contracted performance measurement system vendors, as described previously. Specifications for this measure are freely available to anyone who wishes to use the measure. Feedback from hospitals using this measure indicates that required data elements are generally available in the medical record, and measure specifications are robust and easy to understand. As described above, as feedback from measure users has indicated the need for clarification or revision of measure specifications, this has taken place. The Joint Commission is exploring the inclusion of Vital Records as an additional data source in future measure specifications.

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.

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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:
0139 : Central line catheter-associated blood stream infection rate for ICU and high-risk nursery
(HRN) patients
0303 : Late sepsis or meningitis in neonates (risk-adjusted)
0304 : Late sepsis or meningitis in Very Low Birth Weight (VLBW) neonates (risk-adjusted)
0478 : Neonatal Blood Stream Infection Rate (NQI #3)

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:
The measures all share the same focus of care, health care-associated bloodstream infections in newborn. The target populations vary from measure to measure. Measure 0139 evaluates the target population of all ICU patients of all ages stratified by the type of ICU. The measure evaluates central line-associated bloodstream infections; however, other invasive procedures are not evaluated. The high-risk nursery patients are reported by different weight categories: <1000, 1001-1500, 12501-2500 and >2500 Gms. Measures 0303 and 0304 evaluate newborns and very low birth weight newborns for both sepsis and meningitis. Measure 0303 evaluates newborns with a birth weight over 1500 Gms admitted to the NICU within 28 days of life or who die at the hospital within 28 days of birth who have not gone home including inborn and outborn newborns. Measure 0304 evaluates birth weights between

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401 and 1500 Gms or a gestational age between 22 weeks 0 days and 29 weeks six days. Measure 0304 also evaluates all outborn newborns admitted to the hospital within 28 days of birth. Numerator inclusions for measure 0304 evaluate cerebrospinal fluid cultures, signs of generalized infection (i.e., apnea, temperature instability, feeding intolerance, worsening respiratory distress or hemodynamic instability) and treatment with 5 days or more with intravenous antibiotics.

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)*:

Measure 0478 is similar to this measure. The fundamental differences are that measure 0478 has been developed to collect all data elements using administrative data. Such an approach has led in some cases to loss of specificity available through review of the medical record. The two measures have been harmonized to the extent possible; however, there are intrinsic differences which are addressed below:

Comparison of Specifications for NQF #0478 (Version 4.3) and PC-04   (V2012A)
Numerator
Criteria #1:

NQF 0478 Any secondary diagnosis ICD-9-CM code for:
038.10, 038.11, 038.19, 038.40, 038.42, 038.43, 038.44, 038.49,
112.5

PC-04   ICD-9-CM Other Diagnosis Codes for septicemias as defined in Appendix A, Table 11.10.1: 038.10, 038.11, 038.19, 038.40, 038.42, 038.43, 038.44, 038.49, 112.5

No difference
Both definitions should be updated (FY2009) by adding:
"038.12 - Methicillin resistant Staphylococcus aureus septicemia."
Agree to harmonize with this addition.

Criteria #2
NQF #0478 One or more of the following secondary diagnosis ICD-9-CM codes:
771.81, 771.83, 790.7

PC-04   One or more ICD-9-CM Other Diagnosis Codes for newborn septicemia or bacteremia as defined in Appendix A, Table 11.10: 771.81, 771.83

One difference:
790.7 Bacteremia
Official Coding Guidelines state that "Code 771.81, Septicemia [sepsis] of newborn, should be assigned… A code from category 038, Septicemia, should not be used on a newborn record." OCG does not specifically instruct coders in the same manner for bacteremia in the newborn, so AHRQ retained 790.7 in the numerator specification. However, the ICD-9-CM Coordination & Maintenance Committee added an exclusion note under 790.7 ("Excludes: bacteremia of newborn (771.83), septicemia (038).")
Agree to harmonize on TJC specification.

Criteria #3
NQF 0478 One of the following secondary diagnosis ICD-9-CM codes: 041.04, 041.10, 041.11, 041.19, 041.3, 041.4, 041.7, 041.85

PC-04 One diagnosis code for newborn bacteremia from Table 11.11:
041.04, 041.10, 041.11, 041.19, 041.3, 041.4, 041.7, 041.85

No difference
Both definitions should be updated (FY2009) by adding:
"041.12 - Methicillin resistant Staphylococcus aureus."
Agree to harmonize with this addition.

Note new FY 2012 codes:

041.41	Shiga toxin-producing Escherichia coli (STEC) O157
041.42	Other specified Shiga toxin-producing Escherchia coli (STEC)
041.43	Shiga toxin-producing Escherichia coli (STEC), unspecified
041.49	Other unspecified Escherichia coli

Denominator
Included Populations
Criteria #1
NQF #0478 With a birth weight 500 to 1499 g (Birth Weight Categories 2, 3, 4 or 5) Category 2: 764.02, 764.12, 764.22, 764.92, 765.02, 765.12
Category 3: 764.03, 764.13, 764.23, 764.93, 765.03, 765.13, V21.32
Category 4: 764.04, 764.14, 764.24, 764.94, 765.04, 765.14
Category 5: 764.05, 764.15, 764.25, 764.95, 765.05, 765.15, V21.33

PC-04 ICD-9-CM Other Diagnosis Codes for birth weight between 500 and 1499g as defined in Appendix A, Table 11.12, 11.13 or 11.14 Table 11.12: 764.02, 764.12, 764.22, 764.92, 765.02, 765.12 Table 11.13: 764.03, 764.13, 764.23, 764.93, 765.03, 765.13 Table 11.14: 764.04, 764.05, 764.14, 764.15, 764.24, 764.25, 764.94, 764.95, 765.04, 765.05, 765.14, 765.15

Two differences:
V21.32 Low birth weight status, 500-999 grams
V21.33 Low birth weight status, 1000-1499 grams
AHA Coding Clinics for ICD-9-CM, 1Q 1994, 11(1):15 - "There is no timeframe for the use of prematurity codes 764-765... The fifth digit for the prematurity codes is not changed by (a subsequent hospital) because it is based on the birth weight, not on the current weight of the infant."
However, there is no exclusion note at V21.3, and no specific exclusion instructions in OCG or Coding Clinics. It is possible that hospitals may use V21.3x codes instead of 764-765 codes when the low birth weight is considered incidental to the reason for admission.
Agree to harmonize on AHRQ specification.

Criteria #2
PC-04 Birth Weight between 500 and 1499g

One difference:
Data Sources: History and physical, Nursing notes, Nursery record, Delivery record, Physician progress notes
This criterion/data source is intrinsically different between the AHRQ and TJC measures, consistent with having harmonized but separate measures.

Criteria #3
NQF 0478 With gestational age between 24 and 30 weeks

One difference:
Inclusion criteria for gestational age between 24 and 30 weeks
This criterion provides an additional opportunity for the AHRQ indicator to capture at-risk newborns if the birth weight diagnosis code is not used. Difference is justified due to availability of medical records to capture at-risk newborns in the TJC specification (consistent with having harmonized but separate measures).

Criteria #4
NQF 0478 With a birth weight greater than or equal to 1500 g (Birth Weight Category 0, 6, 7, 8 or 9)
Category 0: No coded birth weight
Category 6: 764.06, 764.16, 764.26, 764.96, 765.06, 765.16 Category 7: 764.07, 764.17, 764.27, 764.97, 765.07, 765.17, V21.34
Category 8: 764.08, 764.18, 764.28, 764.98, 765.08, 765.18, V21.35
Category 9: 764.09, 764.19, 764.29, 764.99, 765.09, 765.19

PC-04 ICD-9-CM Other Diagnosis Codes for birth weight = 1500g as defined in Appendix A, Table 11.15,11.16 or 11.17 Table 11.15: 764.06, 764.07, 764.16, 764.17, 764.26, 764.27, 764.96, 764.97, 765.06, 765.07, 765.16, 765.17
Table 11.16: 764.08, 764.18, 764.28, 764.98, 765.08, 765.18
Table 11.17: 764.09, 764.19, 764.29, 764.99, 765.09, 765.19

Three differences:
No coded birth weight
V21.34 Low birth weight status, 1500-1999 grams
V21.35 Low birth weight status, 2000-2500 grams
Current TJC specification rejects cases with missing birth weight if user is unable to fill in birth weight from other data sources.
AHRQ specification must be able to accommodate missing birth weight.
Agree to harmonize on AHRQ specification with respect to ICD-9-CM codes for birth weight (but not missing birth weight, see above).

Criteria #5
PC-04   Birth Weight = 1500g

One difference:
Data Sources: History and physical, Nursing notes, Nursery record, Delivery record, Physician progress notes
This criterion/data source is intrinsically different between the AHRQ and TJC measures, consistent with having harmonized but separate measures.

Criteria #6
NQF 0478Experienced death (DISP=20)

PC-04   Experienced death

No difference

Criteria #7
NQF 0478 Major surgery (Appendix A – Operating Room Procedure Codes)

PC-04 ICD-9-CM Principal Procedure Code or ICD-9-CM Other Procedure Codes for major surgery as defined in Appendix A, Table 11.18

103 Differences:
Agree to harmonize on AHRQ list for FY 2012, after verifying discrepancies between AHRQ and CMS lists of major diagnostic and major therapeutic procedures.
Agree to jointly develop a more tailored approach (specific to neonatal procedures) instead of literal ICD-10-CM translation of current list.

Criteria #8
NQF 0478 Mechanical ventilation 96.70, 96.71, 96.72

PC-04 ICD-9-CM Principal Procedure Code or ICD-9-CM Other Procedure Codes for mechanical ventilation as defined in Appendix A, Table 11.19: 96.70, 96.71, 96.72

No difference

Criteria #9
NQF 0478 Transfer to an acute care facility (DISP=2)

One difference:
Transfer to an acute care facility

Some patients may be transferred to a referral center only after developing neonatal bacteremia or sepsis at a lower level NICU. There is no clear rationale for NOT including these patients, as they are included if birth weight is <1500 grams. Empirical analysis shows that this criterion has minimal impact on the numerator, so AHRQ agrees to harmonize on the TJC specification.

Criteria #10
NQF 0478 Out-born -age in days less than 2 days OR - point of origin for born outside of this hospital

PC-04 Transferred in from another acute care hospital or health care setting within 2 days of birth

One difference:
An OR rather than an AND
AHRQ specification includes neonates transferred in from another hospital at age of 2 days or greater. This may not be consistent with the expert panel's guidance (see p 21-22 of NQI Development Report from AHRQ).
Agree to harmonize on TJC specification.

Excluded Populations
Criteria #1
NQF 0478 With principal diagnosis of sepsis or secondary diagnosis present on admission 038.0, 038.10, 038.11, 038.12, 038.19, 038.2, 038.3, 038.40, 038.41, 038.42, 038.43, 038.44, 038.49, 038.8, 038.9, 785.52, 785.59, 995.91, 995.92, 998.0

PC-04 ICD-9-CM Principal Diagnosis Code for sepsis as defined in Appendix A, Table 11.10.2: 038.0, 038.10, 038.11, 038.12, 038.2, 038.3, 038.40, 038.41, 038.42, 038.43, 038.44, 038.49, 038.8, 038.9, 785.52, 785.59, 790.7, 995.91, 995.92, 998.0

One difference:
790.7 Bacteremia For parallelism with 038.x codes, 790.7 bacteremia code should also be listed.
Agree to harmonize on TJC code specification, adding codes from Tables 11.10 (771.81, 771.83), 11.10.1 (112.5), and 11.11 (041.04, 041.10, 041.11, 041.19, 041.3, 041.4, 041.7, 041.85).
Note new FY 2012 codes:

041.41	Shiga toxin-producing Escherichia coli (STEC) O157
041.42	Other specified Shiga toxin-producing Escherchia coli (STEC)
041.43	Shiga toxin-producing Escherichia coli (STEC), unspecified
041.49	Other unspecified Escherichia coli

Agree to harmonize on AHRQ specification of "principal diagnosis or secondary diagnosis present on admission."

Criteria #2
PC-04 ICD-9-CM Other Diagnosis Codes for newborn septicemia or bacteremia as defined in Appendix A, Table 11.10: 771.81, 771.83

One difference:
771.81 Septicemia [sepsis] of newborn
771.83 Bacteremia of newborn
This exclusion criterion is intended to exclude neonates with perinatally acquired (rather than hospital-acquired) infections. Coding guidelines (Coding Clinics 2008 4Q) say: "When coding the birth of an infant, assign a code from categories V30-V39, according to the type of birth. A code from this series is assigned as a principal diagnosis, and assigned only once to a newborn at the time of birth."
AHRQ instead excludes based on a secondary diagnosis reported as POA.
Empirical analysis shows that this criterion has a substantial impact, reducing the number of numerator events by 69%.
Agree to harmonize by applying AHRQ's specification of "principal diagnosis or secondary diagnosis present on admission" and combining these codes (and unique codes from Tables 11.10.1 and 11.11) with Table 11.10.2.

Criteria #3
NQF 0478 With birth weight less than 500 grams (Birth Weight Category 1): 764.01, 764.11, 764.91, 765.01, 765.11, V21.31

PC-04 ICD-9-CM Other Diagnosis Codes for birth weight < 500g as defined in Appendix A, Table 11.20: 764.01, 764.11, 764.91, 765.01, 765.11

One difference:
V21.31 Low birth weight status <500g
There is no exclusion note at V21.3, and no specific exclusion instructions in OCG or Coding Clinics. It is possible that hospitals may use V21.3x codes instead of 764-765 codes when the low birth weight is considered incidental to the reason for admission. Agree to harmonize on AHRQ specification.

Criteria #4
PC-04 Birth Weight < 500g

One difference:
Data Sources: History and physical, Nursing notes, Nursery record, Delivery record, Physician progress notes
This criterion/data source is intrinsically different between the AHRQ and TJC measures, consistent with having harmonized but separate measures.

Criteria #5
NQF 0478 With length of stay less than 2 days

PC-04 Length of Stay < 2 days OR > 120 days

One Difference
OR > 120 days
TJC excludes >120 day stays from all indicators for technical reasons related to measure reporting period; this rationale does not apply to the AHRQ indicator. This difference is consistent with having harmonized but separate measures.

Criteria #6
PC-04   Enrolled in clinical trials

Two Differences
For Perinatal Care measures ONLY, it is appropriate for the Vendor to default the data element to "No" unless the ICD-9-CM diagnosis code of V70.7, "Examination of participant in a clinical trial" is present.
Data Sources: Signed consent form for clinical trial.
This criterion/data source is intrinsically different between the AHRQ and TJC measures, consistent with having harmonized but separate measures.

Criteria #7
NQF 0478 with principal diagnosis of infection (Appendix H) or secondary diagnosis present on admission

One Difference
Exclusion criteria for principal diagnosis of infection or secondary diagnosis present on admission.
This Appendix H list was developed for adult and pediatric indicators; the list is less relevant to neonatal indicators.
Agree to harmonize on TJC specification, limiting exclusion to sepsis or bacteremia codes under Criterion #1 (creating a single list with all codes in Tables 11.10, 11.10.1, 11.10.2, or 11.11).

Comparison of Suggested Data Sources for Data Elements for PC-04:

Admission Date:
Physician orders
Face sheet
Excluded: UB-04, Field Location: 06

Comment: Not clear why UB-04, Field Location: 12 is not a suggested data source

TJC acknowledges technical error, which was corrected in V2012A.

Admission Type:
Emergency department record
History and physical
Face sheet
Progress notes
UB-04, Field Location: 14

Birth Weight:
History and physical
Nursing notes
Nursery record
Delivery record
Physician progress notes

Comment: This data source is intrinsically different between the AHRQ and TJC measures, consistent with having harmonized but separate measures.

Birth Date:
Emergency department record
Face sheet
Registration form
UB-04, Field Location: 10

Clinical Trial:
Signed consent form for clinical trial
FOR PC ONLY:
UB-04, Field Locations: 67A-Q

Comment: This data source is intrinsically different between the AHRQ and TJC measures, consistent with having harmonized but separate measures.

Discharge Date:
Face sheet
Progress notes
Physician orders
Discharge summary
Nursing discharge notes
Transfer note
UB-04, Field Location: 6

Discharge Status:
Face sheet
Progress notes
Physician orders
Discharge summary
Discharge instruction sheet
Nursing discharge notes
Social service notes
Transfer record
UB-04, Field Location: 17

ICD-9-CM Other Diagnosis Codes:

Face sheet
Discharge summary
UB-04, Field Locations: 67A-Q
NOTE: Medicare will only accept codes listed in fields A-H

ICD-9-CM Other Procedure Codes:
Face sheet
Discharge summary
UB-04, Field Location: 74A-E

ICD-9-CM Principal Diagnosis Code:
Face sheet
Discharge summary
UB-04, Field Location: 67

ICD-9-CM Principal Procedure Code:
Face sheet
Discharge summary
UB-04, Field Location: 74

Point of Origin for Admission or Visit:
Emergency department record
History and physical
Face sheet
Progress notes
Nursing admission notes
UB-04, Field Location 15

CONTACT INFORMATION

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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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The technical advisory panel (TAP) members determined priority areas that could be evaluated to improve care related to perinatal care during the development timeframe. After implementation, minor revisions, acknowledged by TAP representatives, were made to improve clarity. Hospital feedback will be reviewed during the reliability testing phase of the project to assist the TAP in making the final measure recommendations.

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:** Not Applicable

Measure Developer/Steward Updates and Ongoing Maintenance
Ad.3 **Year the measure was first released:** 2010
Ad.4 **Month and Year of most recent revision:** 08, 2011
Ad.5 **What is your frequency for review/update of this measure?** Biannual
Ad.6 **When is the next scheduled review/update for this measure?** 02, 2012

Ad.7 **Copyright statement:** No royalty or use fee is required for copying or reprinting this manual, but the following are required as a condition of usage: 1) disclosure that the Specifications Manual is periodically updated, and that the version being copied or reprinted may not be up-to-date when used unless the copier or printer has verified the version to be up-to-date and affirms that, and 2) users participating in Joint Commission accreditation, including ORYX® vendors, are required to update their software and associated documentation based on the published manual production timelines.

Ad.8 **Disclaimers:**

Ad.9 **Additional Information/Comments:** Release Notes:

1.)   Sampling instructions and sample sizes were updated.
2.)   Initial patient population instructions and algorithm were corrected.
3.)   ICD-9-CM code tables were updated and corrected.
4.)   An additional ICD-9-CM code table was added to the numerator included populations and the algorithm was updated to align with the original measure developer.
5.)   The denominator excluded population and algorithm were updated with additional ICD-9-CM code tables to exclude newborns born with an infection at the reporting hospital.
6.)   Instructions were added to the data element Birth Weight on priority data source for obtaining weight.

Date of Submission (*MM/DD/YY*): 10/17/2011