Neonatal Blood Stream Infection Rate
Technical Specifications

Neonatal Quality Indicators #3 (NQI #3)
AHRQ Quality Indicators™, Version 4.5, May 2013
Provider-Level Indicator
Type of Score: Rate

Description

Discharges with healthcare-associated bloodstream infection per 1,000 discharges for newborns and outborns with birth weight of 500 grams or more but less than 1,500 grams; with gestational age between 24 and 30 weeks; or with birth weight of 1,500 grams or more and death, an operating room procedure, mechanical ventilation, or transferring from another hospital within two days of birth. Excludes discharges with a length of stay less than 7 days and discharges with a principal diagnosis of sepsis, sepsis or bacteremia, or newborn bacteremia.

[NOTE: The software provides the rate per hospital discharge. However, common practice reports the measure as per 1,000 discharges. The user must multiply the rate obtained from the software by 1,000 to report events per 1,000 hospital discharges.]

Numerator

Discharges, among cases meeting the inclusion and exclusion rules for the denominator, with either:

- any secondary ICD-9-CM diagnosis codes for other septicemia; or
- any secondary ICD-9-CM diagnosis codes for newborn septicemia or bacteremia and any secondary ICD-9-CM diagnosis codes for staphylococcal or Gram-negative bacterial infection

ICD-9-CM Other septicemia diagnosis codes:

03810	STAPHYLCOCC SEPTICEM NOS	03842	E COLI SEPTICEMIA
03811	METH SUSC STAPH AUR SEPT	03843	PSEUDOMONAS SEPTICEMIA
03812	METH RES STAPH AUR SEPT	03844	SERRATIA SEPTICEMIA
03819	STAPHYLCOCC SEPTICEM NEC	03849	GRAM-NEG SEPTICEMIA NEC
03840	GRAM-NEG SEPTICEMIA NOS	1125	DISSEMINATED CANDIDIASIS

ICD-9-CM Newborn septicemia or bacteremia diagnosis codes:

77181	NB SEPTICEMIA [SEPSIS]	77183	BACTEREMIA OF NEWBORN

ICD-9-CM Staphylococcal or Gram-negative bacterial infection diagnosis codes[1]:

04104	ENTEROCOCCUS GROUP D	0413	KLEBSIELLA PNEUMONIAE
04110	STAPHYLOCOCCUS UNSPCFIED	*0414*	*E. COLI INFECT NOS*
04111	MTH SUS STPH AUR ELS/NOS	04141	SHIGA TOXIN-PROD E. COLI
04112	MTH RES STAPH AUR	04142	SPEC SHIGA TOXIN-PROD E. COLI OTH
04119	OTHER STAPHYLOCOCCUS	04143	SHIGA TOXIN-PROD E. COLI UNS

04149	SHIGA TOXIN-PROD E. COLI OTH/UNS	04185	OTH GRAM NEGATV BACTERIA
0417	PSEUDOMONAS INFECT NOS		

[1] The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.

Denominator

All newborns and outborns with either:
- a birth weight of 500 to 1,499 grams (Birth Weight Categories 2, 3, 4 and 5); or
- any-listed ICD-9-CM diagnosis codes for gestational age between 24 and 30 weeks; or
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, 8, or 9) and death (DISP=20); or
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, 8, or 9) and any-listed ICD-9-CM procedure codes for operating room procedure; or
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, 8, or 9) and any-listed ICD-9-CM procedure codes for mechanical ventilation; or
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 6, 7, 8, or 9) and transferring from another health care facility within two days of birth

See *Pediatric Quality Indicators Appendices*:
- Appendix A – Operating Room Procedure Codes
- Appendix I – Definitions of Neonate, Newborn, Normal Newborn, and Outborn
- Appendix L – Low Birth Weight Categories

ICD-9-CM Gestational age between 24 and 30 weeks diagnosis codes:

76522	24 COMP WEEKS GESTATION	76524	27-28 COMP WKS GESTATION
76523	25-26 COMP WKS GESTATION	76525	29-30 COMP WKS GESTATION

ICD-9-CM Mechanical ventilation procedure codes:

9670	CON INV MEC VEN-UNSP DUR	9672	CONT INV MEC VEN 96+ HRS
9671	CONT INV MEC VEN <96 HRS		

Exclude cases:
- with a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission[†]) for sepsis
- with a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission[†]) for sepsis or bacteremia
- with a principal ICD-9-CM diagnosis code (or secondary diagnosis present on admission[†]) for staphylococcal or Gram-negative bacterial infection (see above)
- with birth weight less than 500 grams (Birth Weight Category 1)
- with length of stay less than 7 days
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)

[†] Only for cases that otherwise qualify for the numerator.

ICD-9-CM Sepsis diagnosis codes[1]:

0380	STREPTOCOCCAL SEPTICEMIA	03844	SERRATIA SEPTICEMIA
0381	*STAPHYLOCOCCAL SEPTICEMIA*	03849	GRAM-NEG SEPTICEMIA NEC
03810	STAPHYLCOCC SEPTICEM NOS	0388	SEPTICEMIA NEC
03811	METH SUSC STAPH AUR SEPT	0389	SEPTICEMIA NOS
03812	MRSA SEPTICEMIA	78552	SEPTIC SHOCK
03819	STAPHYLCOCC SEPTICEM NEC	78559	SHOCK W/O TRAUMA NEC[2]
0382	PNEUMOCOCCAL SEPTICEMIA	99591	SEPSIS
0383	ANAEROBIC SEPTICEMIA	99592	SEVERE SEPSIS
03840	GRAM-NEG SEPTICEMIA NOS	*9980*	*POSTOPERATIVE SHOCK*
03841	H. INFLUENAE SEPTICEMIA	99800	POSTOPERATIVE SHOCK, NOS
03842	E COLI SEPTICEMIA	99802	POSTOP SHOCK, SEPTIC
03843	PSEUDOMONAS SEPTICEMIA		

[1] The procedure or diagnosis codes are continuously updated. The current list of ICD-9-CM codes is valid for October 2012 through September 2013. Italicized codes are not active in Fiscal Year 2013.
[2] Valid for discharges prior to October 1, 2011

ICD-9-CM Sepsis or bacteremia diagnosis codes:

1125	DISSEMINATED CANDIDIASIS	77183	BACT OF NEWBORN
77181	SEPTICEMIA OF NEWBORN	7907	BACTERMIA