



# Neonatal Quality Indicator 03 (NQI 03) Neonatal Blood Stream Infection Rate

## July 2019

### Provider-Level Indicator

#### Type of Score: Rate

#### Prepared by:

Agency for Healthcare Research and Quality

U.S. Department of Health and Human Services

[www.qualityindicators.ahrq.gov](http://www.qualityindicators.ahrq.gov)

#### DESCRIPTION

Discharges with healthcare-associated blood stream 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 3 days and discharges with a principal diagnosis of 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-10-CM diagnosis codes for newborn sepsis (**BS15DX**<sup>\*</sup>) or
- any secondary ICD-10-CM diagnosis codes for newborn septicemia or bacteremia codes requiring a separate organism code (**BSI2DX**<sup>\*</sup>) and any secondary ICD-10-CM diagnosis codes for staphylococcal or Gram-negative bacterial infection (**BSI3DX**<sup>\*</sup>)

## DENOMINATOR

All discharges for newborns and outborns (*Appendix I*) with either:

- a birth weight of 500 to 1,499 grams (Birth Weight Categories 2, 3, 4 and 5) (*Appendix L*)
- any-listed ICD-10-CM diagnosis codes for gestational age between 24 and 30 weeks (*GESTCAT*\*)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 0, 6, 7, or 8) and death (DISP=20)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 0, 6, 7, or 8) and any-listed ICD-10-PCS procedure codes for operating room procedure (*Appendix A: ORPROC*)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 0, 6, 7, or 8) and any-listed ICD-10-PCS procedure codes for mechanical ventilation (*MECHVCD*\*)
- a birth weight greater than or equal to 1,500 grams (Birth Weight Category 0, 6, 7, or 8) and transferring from another health care facility within two days of birth (ATYPE = 4 and

[Appendix A – Operating Room Procedure Codes](#)

[Appendix I – Definitions of Neonate, Newborn, Normal Newborn, and Outborn](#)

[Appendix L – Low Birth Weight Categories](#)

## DENOMINATOR EXCLUSIONS

Exclude cases:

- with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission) for sepsis or bacteremia (*BSI4DX*\*), among patients otherwise qualifying for numerator
- with a principal ICD-10-CM diagnosis code (or secondary diagnosis present on admission†) for staphylococcal or Gram-negative bacterial infection (*BSI3DX*\*), among patients otherwise qualifying for numerator
- with birth weight less than 500 grams (Birth Weight Category 1) (*Appendix L*)
- with length of stay less than 3 days
- with missing gender (SEX=missing), age (AGE=missing), quarter (DQTR=missing), year (YEAR=missing) or principal diagnosis (DX1=missing)
- with a Major Diagnostic Category for Pregnancy, Childbirth and Puerperium, (MDC 14)

\* See below for code list

*Newborn sepsis diagnosis code: (BSI5DX)*

P3619	Sepsis of newborn due to other streptococci	P3630	Sepsis of newborn due to unspecified staphylococci
P362	Sepsis of newborn due to Staphylococcus aureus	P3639	Sepsis of newborn due to other staphylococci
		P364	Sepsis of newborn due to Escherichia coli

*Newborn septicemia or bacteremia diagnosis codes: (BSI2DX)*

P3619	Sepsis of newborn due to other streptococci	P3639	Sepsis of newborn due to other staphylococci
P362	Sepsis of newborn due to Staphylococcus aureus	P364	Sepsis of newborn due to Escherichia coli
P3630	Sepsis of newborn due to unspecified staphylococci	P368	Other bacterial sepsis of newborn
		R7881	Bacteremia

***Staphylococcal or Gram-negative bacterial infection diagnosis codes: (BSI3DX)***

B961	Klebsiella pneumoniae [K. pneumoniae] as the cause of diseases classified elsewhere	B9623	Unspecified Shiga toxin-producing Escherichia coli [E. coli] (STEC) as the cause of diseases classified elsewhere
B9620	Unspecified Escherichia coli [E. coli] as the cause of diseases classified elsewhere	B9629	Other Escherichia coli [E. coli] as the cause of diseases classified elsewhere
B9621	Shiga toxin-producing Escherichia coli [E. coli] (STEC) O157 as the cause of diseases classified elsewhere	B965	Pseudomonas (aeruginosa) (mallei) (pseudomallei) as the cause of diseases classified elsewhere
B9622	Other specified Shiga toxin-producing Escherichia coli [E. coli] (STEC) as the cause of diseases classified elsewhere	B9689	Other specified bacterial agents as the cause of diseases classified elsewhere

***Gestational diagnosis codes for age between 24 and 30 weeks: (GESTCAT )***

P0723	Extreme immaturity of newborn, gestational age 24 completed weeks	P0731	Preterm newborn, gestational age 28 completed weeks
P0724	Extreme immaturity of newborn, gestational age 25 completed weeks	P0732	Preterm newborn, gestational age 29 completed weeks
P0725	Extreme immaturity of newborn, gestational age 26 completed weeks	P0733	Preterm newborn, gestational age 30 completed weeks
P0726	Extreme immaturity of newborn, gestational age 27 completed weeks		

***Mechanical ventilation procedure codes: (MECHVCD)***

5A1935Z	Respiratory ventilation, less than 24 consecutive hours	5A1955Z	Respiratory ventilation, greater than 96 consecutive hours
5A1945Z	Respiratory ventilation, 24-96 consecutive hours		

***Sepsis or bacteremia diagnosis codes: (BSI4DX)***

A021	Salmonella sepsis	A4181	Sepsis due to Enterococcus
A227	Anthrax sepsis	A4189	Other specified sepsis
A267	Erysipelothrix sepsis	A419	Sepsis, unspecified organism
A327	Listerial sepsis	A427	Actinomycotic sepsis
A400	Sepsis due to streptococcus, group A	A5486	Gonococcal sepsis
A401	Sepsis due to streptococcus, group B	B377	Candidal sepsis
A403	Sepsis due to Streptococcus pneumoniae	P360	Sepsis of newborn due to streptococcus, group B
A408	Other streptococcal sepsis	P3610	Sepsis of newborn due to unspecified streptococci
A409	Streptococcal sepsis, unspecified	P3619	Sepsis of newborn due to other streptococci
A4101	Sepsis due to Methicillin susceptible Staphylococcus aureus	P362	Sepsis of newborn due to Staphylococcus aureus
A4102	Sepsis due to Methicillin resistant Staphylococcus aureus	P3630	Sepsis of newborn due to unspecified staphylococci
A411	Sepsis due to other specified staphylococcus	P3639	Sepsis of newborn due to other staphylococci
A412	Sepsis due to unspecified staphylococcus	P364	Sepsis of newborn due to Escherichia coli
A413	Sepsis due to Hemophilus influenzae	P365	Sepsis of newborn due to anaerobes
A414	Sepsis due to anaerobes	P368	Other bacterial sepsis of newborn
A4150	Gram-negative sepsis, unspecified	P369	Bacterial sepsis of newborn, unspecified
A4151	Sepsis due to Escherichia coli [E. coli]	R6520	Severe sepsis without septic shock
A4152	Sepsis due to Pseudomonas	R6521	Severe sepsis with septic shock
A4153	Sepsis due to Serratia	R7881	Bacteremia
A4159	Other Gram-negative sepsis	T8112XA	Postprocedural septic shock, initial encounter