Quality ID #76: Prevention of Central Venous Catheter (CVC) - Related Bloodstream Infections – National Quality Strategy Domain: Patient Safety

2018 OPTIONS FOR INDIVIDUAL MEASURES:
REGISTRY ONLY

MEASURE TYPE:
Process

DESCRIPTION:
Percentage of patients, regardless of age, who undergo central venous catheter (CVC) insertion for whom CVC was inserted with all elements of maximal sterile barrier technique, hand hygiene, skin preparation and, if ultrasound is used, sterile ultrasound techniques followed

INSTRUCTIONS:
This measure is to be submitted each time a CVC insertion is performed during the performance period. There is no diagnosis associated with this measure. It is anticipated that eligible clinicians who perform CVC insertion will submit this measure.

Measure Submission:
The listed denominator criteria are used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions allowed by the measure. The quality-data codes listed do not need to be submitted for registry submissions; however, these codes may be submitted for those registries that utilize claims data.

DENOMINATOR:
All patients, regardless of age, who undergo CVC insertion

Denominator Criteria (Eligible Cases):
Patient procedure during the performance period (CPT): 36555, 36556, 36557, 36558, 36560, 36561, 36563, 36565, 36566, 36568, 36569, 36570, 36571, 36578, 36580, 36581, 36582, 36583, 36584, 36585, 93503

NUMERATOR:
Patients for whom central venous catheter (CVC) was inserted with all elements of maximal sterile barrier technique, hand hygiene, skin preparation and, if ultrasound is used, sterile ultrasound techniques followed

Definitions:
Maximal Sterile Barrier Technique – includes all of the following elements: Cap AND mask AND sterile gown AND sterile gloves AND sterile full body drape.
Sterile Ultrasound Techniques – require sterile gel and sterile probe covers.

Numerator Options:

Performance Met:	All elements of maximal sterile barrier technique, hand hygiene, skin preparation and, if ultrasound is used, sterile ultrasound techniques followed (6030F)

OR

Denominator Exception:	Documentation of medical reason(s) for not following all elements of maximal sterile barrier technique, hand hygiene, skin preparation and, if ultrasound is used, sterile ultrasound techniques during CVC insertion (including increased risk of harm to patient if adherence

	to aseptic technique would cause delay in CVC insertion) (6030F *with* 1P)
OR	
Performance Not Met:	All elements of maximal sterile barrier technique, hand hygiene, skin preparation and, if ultrasound is used, sterile ultrasound techniques not followed, reason not otherwise specified (6030F *with* 8P)

RATIONALE:

Catheter-related bloodstream infection is a costly complication of central venous catheter insertion, but may be avoided with routine use of aseptic technique during catheter insertion. This measure is constructed to require that all of the listed elements of aseptic technique are followed and documented. Hospital-acquired bloodstream infections are a common complication that leads to increased costs and mortality. It is estimated that approximately 51% of hospital-acquired bloodstream infections occur in an intensive care unit (ICU), with the presence of a central venous catheter being the largest risk factor for the development of a bloodstream infection in the hospital. Catheter-related bloodstream infections (CRBSIs) commonly occur when the catheter becomes contaminated by microbes on the skin during insertion. The use of maximal sterile barriers, including sterile gloves, long-sleeved sterile gown, mask, cap, and full-sized sterile drape, during insertion of the catheter has been shown to cost effectively reduce CRBSI rates compared to the use of less stringent precautions.

CLINICAL RECOMMENDATION STATEMENTS:

2011 Guidelines for Prevention of Intravascular Catheter-Related Infections. CDC Healthcare Infection Control Practices Advisory Committee (HICPAC).

Maximal sterile barrier precautions: 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 (CDC) (Category IB)

Hand hygiene: Perform hand hygiene procedures, either by washing hands with conventional soap and water or with alcohol-based hand rubs (ABHR) (Category IB)

Skin Preparation: 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 (Category IB)

Sterile Ultrasound: The Food and Drug Administration recommends that policies and clinical practice standards be reviewed to ensure the use of sterile ultrasound gel. Once a container of sterile or non-sterile ultrasound gel is opened, it is no longer sterile and contamination during ongoing use is possible.

2012 American Society of Anesthesiologists Practice Guidelines for Central Venous Access

In preparation for the placement of central venous catheters, use aseptic techniques (e.g., hand washing) and maximal barrier precautions (e.g., sterile gowns, sterile gloves, caps, masks covering both mouth and nose, and full-body drapes).

2014 American Institute for Ultrasound in Medicine Practice Parameter for the Performance of Selected Ultrasound-Guided Procedures

The use of sterile drapes, sterile probe covers, and sterile ultrasound gel may provide the best method to reduce the risk of contamination and infection.

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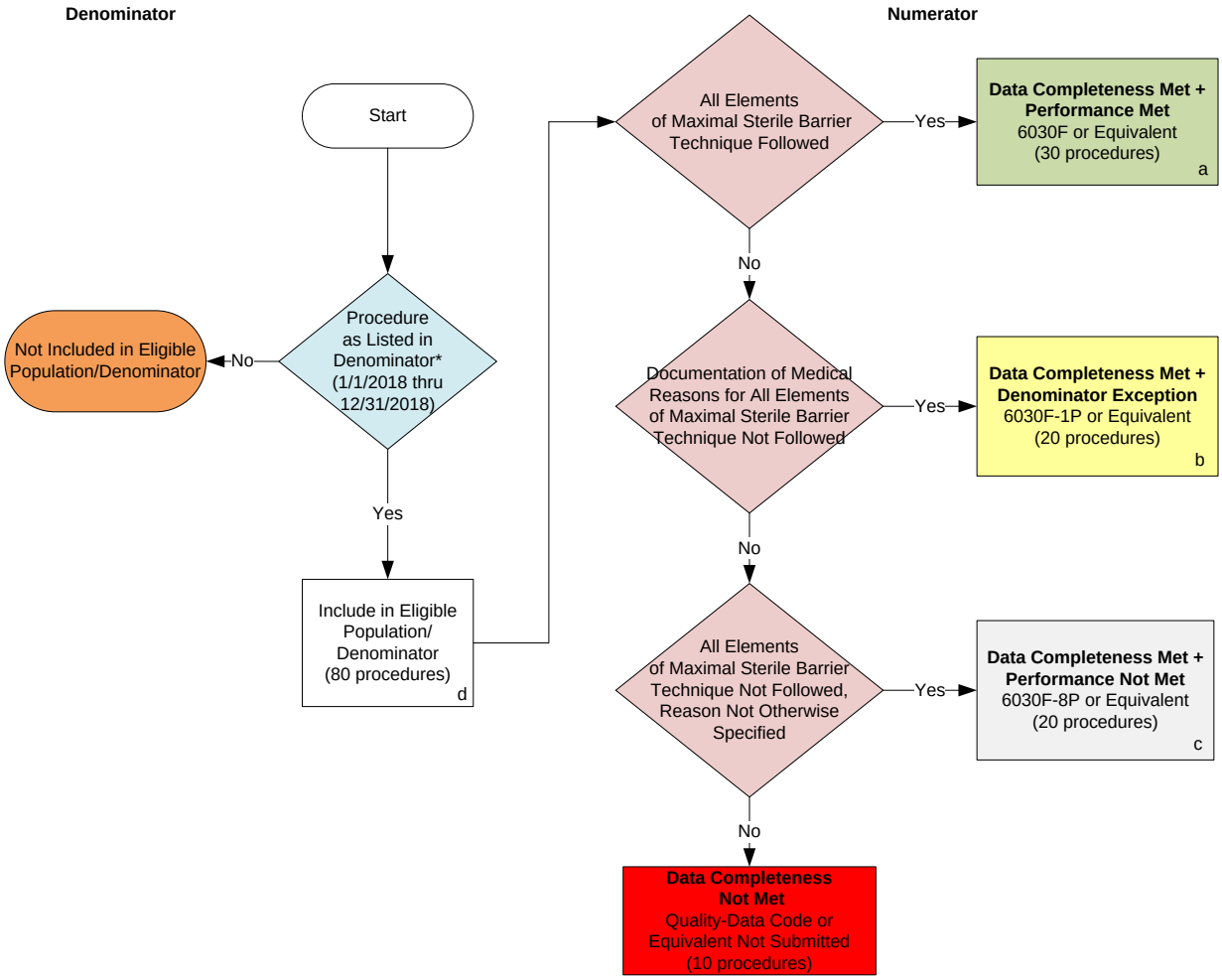
2018 Registry Flow for Quality ID #76:
Prevention of Central Venous Catheter (CVC) – Related Bloodstream Infections



SAMPLE CALCULATIONS:

Data Completeness=

Performance Met (a=30 procedures) + Denominator Exception (b=20 procedures) + Performance Not Met (c=20 procedures) = 70 procedures = **87.50%**

Eligible Population / Denominator (d=80 procedures) = 80 procedures

Performance Rate=

Performance Met (a=30 procedures) = 30 procedures = **60.00%**

Data Completeness Numerator (70 procedures) – Denominator Exception (b=20 procedures) = 50 procedures

* See the posted Measure Specification for specific coding and instructions to submit this measure.

NOTE: Submission Frequency: Procedure

v2

2018 Registry Flow for Quality ID
#76: Prevention of Central Venous Catheter (CVC) – Related Bloodstream Infections

Please refer to the specific section of the Measure Specification to identify the denominator and numerator information for use in submitting this Individual Specification. This flow is for registry-data submission.

1. Start with Denominator
2. Check Procedure Performed:
    a. If Procedure as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
    b. If Procedure as Listed in the Denominator equals Yes, include in the Eligible Population.
3. Denominator Population:
    a. Denominator Population is all Eligible Patients in the Denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 80 procedures in the Sample Calculation.
4. Start Numerator
5. Check All Elements of Maximal Sterile Barrier Technique Followed:
    a. If All Elements of Maximal Sterile Barrier Technique Followed equals Yes, include in Data Completeness Met and Performance Met.
    b. Data Completeness Met and Performance Met letter is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter a equals 30 procedures in the Sample Calculation.
    c. If All Elements of Maximal Sterile Barrier Technique Followed equals No, proceed to Documentation of Medical Reasons for All Elements of Maximal Sterile Barrier Technique Not Followed.
6. Check Documentation of Medical Reasons for All Elements of Maximal Sterile Barrier Technique Not Followed:
    a. If Documentation of Medical Reasons for All Elements of Maximal Sterile Barrier Technique Not Followed equals Yes, include in Data Completeness Met and Denominator Exception.
    b. Data Completeness Met and Denominator Exception is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter b equals 20 procedures in the Sample Calculation.
    c. If Documentation of Medical Reasons for All Elements of Maximal Sterile Barrier Technique Not Followed equals No, proceed to All Elements of Maximal Sterile Barrier Technique Not Followed, Reason Not Otherwise Specified.
7. Check All Elements of Maximal Sterile Barrier Technique Not Followed, Reason Not Otherwise Specified:
    a. If All Elements of Maximal Sterile Barrier Technique Not Followed, Reason Not Otherwise Specified equals Yes, include in the Data Completeness Met and Performance Not Met.

b. Data Completeness Met and Performance Not Met letter is represented in the Data Completeness in the Sample Calculation listed at the end of this document. Letter c equals 20 procedures in the Sample Calculation.

c. If All Elements of Maximal Sterile Barrier Technique Not Followed, Reason Not Otherwise Specified equals No, proceed to Data Completeness Not Met.

8. Check Data Completeness Not Met

a. If Data Completeness Not Met, the Quality Data Code or equivalent was not submitted. 10 procedures have been subtracted from the Data Completeness Numerator in the Sample Calculation.

SAMPLE CALCULATIONS:

Data Completeness=

Performance Met (a=30 procedures) + Denominator Exception (b=20 procedures) + Performance Not Met (c=20 procedures) = 70 procedures = **87.50%**
Eligible Population / Denominator (d=80 procedures) = 80 procedures

Performance Rate=

Performance Met (a=30 procedures) = 30 procedures = **60.00%**
Data Completeness Numerator (70 procedures) – Denominator Exception (b=20 procedures) = 50 procedures