# IN-PERSON MEETING
# NATIONAL VOLUNTARY CONSENSUS STANDARDS FOR PATIENT SAFETY MEASURES HAI TECHNICAL ADVISORY PANEL

## August 2-3, 2010

**Measure number:** PSM-001-10

**Measure name:** National Healthcare Safety Network (NHSN) central line-associated bloodstream infection (CLABSI) outcome measure

**Description:** Standardized infection ratio (SIR) of healthcare-associated, central line-associated bloodstream infections (CLABSI) among patients in intensive care units (ICUs) and neonatal intensive care units (NICUs)

**Numerator statement:** Total number of observed healthcare-associated CLABSI among patients in ICUs and NICUs. Cases are included if they are healthcare-associated and their infection dates are during a month in which a patient care area (location) was selected for surveillance (i.e., if CLABSI surveillance is done in a medical ICU during January, all healthcare-associated CLABSI with infection dates in January are included). With low numbers of expected infections, it will be necessary to have a data sample of sufficient size to generate meaningful SIRs, thus the time window will be a period greater than monthly.

**Denominator statement:** Total number of expected CLABSIs, calculated by multiplying the number of central line device days for each location under surveillance for CLABSI during the period by the CLABSI rate for the same types of locations obtained from the standard population. Central line device-day denominator data that are collected differ according to the location of the patients being monitored. See 2a.8.

The number of central line device days for the location under surveillance for CLABSI during the period is collected. This number is multiplied by the 2006 through 2008 standard population's CLABSI rate for the same type of location to obtain the number of expected CLABSIs. The expected number of CLABSIs is the sum across all location types during the period. The expected number of CLABSIs will be influenced by the number of central line device days in the facility and the CLABSI rate in the standard population; with low numbers of expected infections, it will be necessary to have a data sample of sufficient size to generate meaningful SIRs.

**Level of analysis**: Facility/Agency, Population: national, Population: States

**Type of measure**: Outcome

**Data source**: Paper medical record/flowsheet; Electronic clinical data; Electronic Health/Medical Record; Special or unique data; Lab data

**Measure developer**: Centers for Disease Control and Prevention (CDC)

**Type of endorsement (endorsed or time-limited):** Endorsed

**Summary table of TAP ratings of subcriteria and comments**:

| | | |
|---|---|---|
| IMPORTANCE TO MEASURE AND REPORT | | |
| 1a Impact | Completely | The TAP agreed that these criteria were well met.<br><br>**General Comments Received on the Survey**<br>Weakness: The potential excessive complexity associated with application of SIR may differ by location (month vs. quarter vs. other) depending on the size of the denominator. To be meaningful the measure must be associated with at least one infection; it is not meaningful if it is only a fraction of 1. |
| 1b Gap | Completely | |
| 1c Relation to outcomes | Completely | |
| SCEINTIFIC ACCEPTABILTY | | |
| 2a Specs | Completely (2)<br>Partially (4)<br>Minimally (1) | The TAP members noted ambiguity in the numerator and denominator time windows. The measure developer explained that the time windows were intentionally ambiguous to allow for longer periods of surveillance, which may be needed to produce meaningful statistics for comparison. The period of surveillance should be determined by the sample size and not reported if it does not produce a meaningful result.<br><br>The TAP also discussed whether the intensive care units are stratified based on risk. The measure developer explained that the hospitals are classified by unit type and specialty care. The summary statistics take into account the different types of hospital units and the HAI experience within each unit. It does not evaluate specific patients' risk factors. However, the CDC does have some internal criteria for defining a unit's make-up. Concern was expressed by a TAP member that the public reporting of this initiative may penalize hospitals based on the composition of patients in the unit or burden the hospital with collection of additional information on patient risk factors.<br><br>The TAP members asked the measure developer to explain |
| 2b Reliability | Completely (2)<br>Partially (4)<br>Minimally (1) | |
| 2c Validity | Completely (2)<br>Partially (2)<br>Minimally (3) | |
| 2d Exclusions | Completely (4)<br>Partially (3) | |
| 2e Risk-adjustment | Completely (3)<br>Partially (2)<br>Minimally (1)<br>Not at All (1) | |
| 2f Meaningful differences | Completely (6)<br>Partially (1) | |
| 2g Comparability | Completely (2)<br>Partially (1)<br>Not at All (2)<br>Not Applicable (2) | |

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| 2h Disparities | Completely (3)<br>Partially (1)<br>Not Applicable (3) | how the NICU SIR is stratified. The measure developer explained that the data for NICUs are stratified by five different birth weights. Rates and SIRs are calculated for each stratum.<br><br>The TAP requested the following from the measure developer:<br>• Additional details on stratification of NICU data by birth weight;<br>• Testing results; and<br>• Revised start date of validity study as articulated during conference call. (see 2c.2)<br><br>The measure developer updated the specifications per the TAP's recommendations, and revised documents have been posted to the website.<br><br>**General Comments Received on the Survey**<br>Weakness: The time frame in this application must be explained in more detail; validity testing with SIR CLABSI must be enhanced; there is a need to demonstrate comparable data with automated surveillance (e.g., MedMined NIM) versus manual surveillance regardless of auto upload to the NHSN. |
| USEABILITY | | |
| 3a Distinctive | Completely (5)<br>Partially (1)<br>Minimally (1) | This measure is intended as a replacement for NQF-endorsed measure 0139. The TAP stated that the measure meets the criterion for usability.<br><br>**General Comments Received on the Survey**<br>SIR is currently not used/understood by audiences (healthcare and patients); education and a learning curve should be anticipated. |
| 3b Harmonization | Completely (7) | |
| 3c Added value | Completely (6)<br>Partially (1) | |
| FEASIBILITY | | |
| 4a Data a byproduct of care | Completely (2)<br>Partially (4)<br>Not at All (1) | One TAP member identified a concern with reporting an SIR instead of reporting a rate, which is mandated through state-based legislation. An SIR may also impose a burden of manual calculation on healthcare facilities not participating in the NHSN and may be susceptible to human error. The measure developer stated that using the SIR enables comparisons of HAIs observed in healthcare facilities to HAIs expected in facilities based on data aggregated nationally by the NHSN.<br><br>The measure developer also described how it plans to integrate electronic reporting of measure quality data with EHRs in the future by utilizing the same industry standard implementation guidance as infection control surveillance systems.<br><br>**General Comments Received on the Survey**<br>1. There is currently no available method for auto "mining" data to provide CLABSI from electronic sources. Case finding, which requires functionality from EHRs, is not yet automated; those medical centers that have not joined the NHSN will need to manually calculate SIR, which will involve training and a learning curve. |
| 4b Electronic | Completely (2)<br>Partially (2)<br>Minimally (2)<br>Not at All (1) | |
| 4c Exclusions | Completely (5)<br>Partially (1)<br>Minimally (1) | |
| 4d Inaccuracies | Completely (3)<br>Partially (3)<br>Minimally (1) | |
| 4e Implementation | Completely (4)<br>Partially (2)<br>Minimally (1) | |

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| | | 2. This measure definitely involves a burden of data collection, which is additive to state-mandated rate information. |

**Measure number:** PSM-002-10

**Measure name:** National Healthcare Safety Network (NHSN) Central line-associated Bloodstream Infection (CLABSI) Outcome Measure

**Description:** Standardized infection ratio (SIR) of deep incisional and organ/space surgical site infections (SSI) at the primary incision site among patients undergoing selected inpatient operative procedure categories

**Numerator statement:** Total number of observed deep incisional primary (DIP) and organ/space SSIs detected during admission or readmission among patients who have undergone the following inpatient NHSN operative procedure categories:

1. Abdominal aortic aneurysm repair (AAA)
2. Coronary artery bypass graft with both chest and donor site incisions (CBGB); only SSI from the chest (primary site) are included
3. Coronary artery bypass graft with chest incision only (CBGC)
4. Colon surgery (COLO)
5. Hip arthroplasty (HPRO)
6. Abdominal hysterectomy (HYST)
7. Knee arthroplasty (KPRO)
8. Peripheral vascular bypass surgery (PVBY)
9. Rectal surgery (REC)
10. Vaginal hysterectomy (VHYS)

Cases are included if the date of the procedure to which the SSI is attributed is a month in which that procedure was selected for surveillance (i.e., if SSI surveillance for COLO procedures is performed for January, all SSIs as described in the numerator statement, 2a.1, that occurred in COLOs performed in January are included; Note: SSI may occur in different month than the month of the procedure). With low numbers of expected infections, it will be necessary to have a data sample of sufficient size to generate meaningful SIRs, thus the time window will be a period greater than monthly.

**Denominator statement:** Using multivariable procedure-specific logistic regression models, the expected number of SSIs is obtained. These expected numbers are summed across strata (e.g., procedure categories, surgeons, etc.) and used as the denominator of this measure (see also 2a.8). The probability of SSI for each procedure category is calculated using the corresponding procedure-specific logistic regression model (see 2a. 15). The probabilities are summed for the period to yield the expected number of SSIs (denominator). The expected number of SSIs will be influenced by the number of operative procedures in the facility and the distribution of the factors relevant to each procedure's logistic model. A data sample of sufficient size will be necessary to generate meaningful SIRs therefore the time window may vary.

**Level of analysis:** Facility/Agency, Population: national, Population: states

**Type of measure:** Outcome

**Data source:** Electronic clinical data, electronic health/medical record, lab data, paper medical record/flowsheet, special or unique data

**Measure developer:** Centers for Disease Control and Prevention (CDC)

**Type of endorsement (endorsed or time-limited):** Endorsed

**Summary table of TAP ratings of subcriteria and comments:**

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| IMPORTANCE TO MEASURE AND REPORT | | |
| 1a Impact | Completely (7) | No discussion; TAP unanimously agreed on importance to measure and report.<br><br>**General Comments Received on the Survey**<br>A weakness is that transitioning to SIR from rate-based reporting will involve additional work for locations that are not already participating in the NHSN. |
| 1b Gap | Completely (7) | |
| 1c Relation to outcomes | Completely (7) | |
| SCEINTIFIC ACCEPTABILTY | | |
| 2a Specs | Completely (2)<br>Partially (5) | The TAP was concerned with the inclusion of several procedures in this measure. The developer explained that SIR allows for risk to be measured in subgroups; then numerators and denominators from each subgroup can be summed across procedures. Risk models are being built within each procedure and then a statistic for each procedure is calculated. At this point the statistics can be summed.<br><br>There was a question about inclusion of knee arthroplasty as deep organ space. The developer stated that it utilized standard definitions that have been validated.<br><br>The TAP questioned why only primary incision (chest SSIs) is included for CABG. The developer stated that there is not enough adequate data for prediction of SSIs at the donor site.<br><br>The TAP noted that reliability data are not specific and clear, and that it is unsure that the risk models have been designed to adequately capture true risk. The developer explained that the measure is a combination of reported data with the developed risk models. The data used are captured from 805 facilities, which do not have equal patient load. As volume increases, the developer will be able to show model fit (currently at approximately .07).<br><br>The TAP requested clarification that the duration of procedure in minutes is heavily related to SSI risk, within procedure and |
| 2b Reliability | Completely (1)<br>Partially (4)<br>Minimally (1)<br>Not at all (1) | |
| 2c Validity | Completely (1)<br>Partially (3)<br>Minimally (3) | |
| 2d Exclusions | Completely (3)<br>Partially (3)<br>Minimally (1) | |
| 2e Risk-adjustment | Completely (4)<br>Partially (3) | |
| 2f Meaningful differences | Completely (6)<br>Partially (1) | |
| 2g Comparability | Completely (1)<br>Partially (3)<br>Minimally (1)<br>Not at all (1)<br>Not applicable (1) | |

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| 2h Disparities | Completely (2)<br>Partially (2)<br>Not applicable (3) | across procedures.<br><br>Regarding the clarification about variability of wound and American Society of Anesthesiologists (ASA) classification, the developer identified issues with double entries of the classifications and notes that there is a need for validation. There may also be variability between providers' assessments.<br><br>The TAP requested the following additional information from the measure developer:<br>• Detailed information that demonstrates why SIRs are reliable in predicting SSI. (Can SIR really predict risk for any particular facility?); and<br>• Revised start date of validity study as articulated during conference call. (see 2c.2)<br><br>The measure developer updated the specifications per the TAP's recommendations.<br><br>**General Comments Received on the Survey**<br>Weaknesses: Regarding the reliability of SIR versus rate-based reporting, proof is needed that this approach is a better, more accurate way to present SSI data for public reporting or performance improvement. Furthermore, there is no comparison of data from those medical centers that use a method of automated infection surveillance involving an electronic trigger tool-EHR interface versus traditional manual surveillance (review of individual medical records). |
| USEABILITY | | |
| 3a Distinctive | Completely (4)<br>Partially (2)<br>Minimally (1) | The TAP questioned the hospitals' selection of procedures to measure. The developer clarified that hospitals choose which procedures they want to track.<br><br>One TAP member noted that the interface for uploading to the NHSN is time-consuming.<br><br>**General Comments Received on the Survey**<br>Weaknesses: This measure requires input of data into the NHSN. The denominator data elements required for the NHSN surgical component is significant, which will be extremely time intensive; the interface between the NHSN and data-mining software where available is very slow. Furthermore, there is no existing comparison of data between locations using automated surveillance with software/EHR and locations using a method of manual surveillance. |
| 3b Harmonization | Completely (2)<br>Partially (4)<br>Not at all (1) | |
| 3c Added value | Completely (2)<br>Partially (4)<br>Minimally (1) | |
| FEASIBILITY | | |
| 4a Data a byproduct of care | Completely (2)<br>Partially (3)<br>Minimally (1)<br>Not at all (1) | Several TAP members were concerned about the data abstraction burden for hospitals not currently participating in the NHSN. The developer stated that there is a distinction between hospitals that collect data elements as part of the SIR but don't participate with the NHSN and those that do not collect the data elements. Because a majority of facilities already collect the data, calculating the SIR should not be |
| 4b Electronic | Completely (1)<br>Partially (2)<br>Minimally (2) | |

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| | Not at all (2) | burdensome. Additionally, the developer plans to provide coding and information for calculating SIR for this measure.<br><br>**General Comments Received on the Survey**<br>Weaknesses: This measure requires input of data into the NHSN. The denominator data elements required for the NHSN surgical component is significant, which will be extremely time intensive; the interface between the NHSN and data-mining software where available is very slow. Furthermore, there is no existing comparison of data between locations using automated surveillance with software/EHR and locations using a method of manual surveillance. |
| 4c Exclusions | Completely (3)<br>Partially (2)<br>Not applicable (2) | |
| 4d Inaccuracies | Completely (3)<br>Partially (4) | |
| 4e Implementation | Completely (2)<br>Partially (3)<br>Minimally (1)<br>Not at All (1) | |

**Measure number:** PSM-003-10

**Measure name:** National Healthcare Safety Network (NHSN) catheter-associated urinary tract infection (CAUTI) outcome

**Description:** Standardized infection ratio (SIR) of healthcare-associated, catheter-associated urinary tract infections (CAUTI) among patients in intensive care units (ICUs), excluding patients in neonatal ICUs (NICUs)

**Numerator statement:** Total number of observed healthcare-associated CAUTI among patients in ICUs (excluding patients in NICUs)

**Denominator statement:** Total number of expected CAUTIs, which is calculated by multiplying the number of urinary catheter days for each location under surveillance for CAUTI during the period by the CAUTI rate for the same types of locations obtained from the standard population. These expected numbers are summed across locations and used as the denominator of this measure (see also 2a.8).

**Level of analysis**: Facility/Agency, Population: National

**Type of measure**: Outcome

**Data source:** Electronic clinical data, Electronic health/medical record, Lab data, Special or unique data

**Measure developer:** Centers for Disease Control and Prevention (CDC)

**Type of endorsement (endorsed or time-limited):** Endorsed

**Summary table of TAP ratings of subcriteria and comments:**

| IMPORTANCE TO MEASURE AND REPORT | | |
|---|---|---|
| 1a Impact | Completely (6)<br>Not at all (1) | TAP members' opinions varied on importance to measure and report because some TAP members believed that the measure should not be limited to the ICU. The measure developer stated that the measure does not need to be restricted to the ICU. The TAP ultimately agreed to evaluate the measure as originally intended.<br><br>**General Comments Received on the Survey**<br>Weakness: CAUTI receives much attention, but it requires a lot of resources for surveillance (estimated to be 1.5 additional FTE per one large teaching hospital). Other more urgent issues should be the priority for measurement until data collection for this infection can be automated widely. |
| 1b Gap | Completely (6)<br>Partially (1) | |
| 1c Relation to outcomes | Completely (6)<br>Minimally (1) | |
| SCEINTIFIC ACCEPTABILTY | | |
| 2a Specs | Completely (6)<br>Partially (1) | The TAP noted similarities between measure PSM-001-10 National Healthcare Safety Network (NHSN) central line-associated bloodstream infection (CLABSI) outcome measure. The TAP briefly discussed the time windows, which were |
| 2b Reliability | Completely (4)<br>Partially (3) | |

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| 2c Validity | Completely (3)<br>Partially (2)<br>Minimally (2) | described as greater than monthly, but revisited an earlier measure developer's justification that the data sample must be sufficient and may require additional time to achieve an adequate sample.<br><br>The TAP debated whether non-indwelling catheterization led to additional infections. The measure developer stated that there were very few infections identified with non-indwelling catheterization.<br><br>The TAP requested the following from the measure developer:<br>• Testing data;<br>• Revised start date of validity study as articulated during conference call (see 2c.2); and<br>• Justification for exclusions.<br><br>The measure developer updated the specifications per the TAP's recommendations.<br><br>**General Comments Received on the Survey**<br>At this time, there is no comparison available between locations automating surveillance using electronic trigger tool or EHR functionality versus manual surveillance using paper or EHR. |
| 2d Exclusions | Completely (5)<br>Partially (1)<br>Minimally (1) | |
| 2e Risk-adjustment | Completely (4)<br>Partially (3) | |
| 2f Meaningful differences | Completely (5)<br>Partially (2) | |
| 2g Comparability | Completely (2)<br>Partially (3)<br>Not at All (2) | |
| 2h Disparities | Completely (3)<br>Partially (1)<br>Not at All (2) | |
| USEABILITY | | |
| 3a Distinctive | Completely (4)<br>Partially (1)<br>Minimally (1)<br>Not at All (1) | The TAP noted that it would be reviewing a similar measure, PSM-007-10: Risk adjusted urinary tract infection outcome measure.<br><br>**General Comments Received on the Survey**<br>Weakness: CAUTI is an issue, but it causes less morbidity and mortality than other major HAI categories, and, until infection surveillance is automated, other HAI categories should take precedence. |
| 3b Harmonization | Completely (3)<br>Partially (2)<br>Minimally (1)<br>Not at All (1) | |
| 3c Added value | Completely (5)<br>Minimally (1)<br>Not at All (1) | |
| FEASIBILITY | | |
| 4a Data a byproduct of care | Completely (4)<br>Partially (2)<br>Minimally (1) | One TAP member cautioned that endorsing an ICU CAUTI measure may add to the surveillance burden.<br><br>**General Comments Received on the Survey**<br>Weakness: Although data elements are readily available in the EHR, they are also in paper records. This, however, does nothing to reduce the surveillance burden except eliminate the physical walk to the medical records department and physical paging through the medical record. The infection case finding still requires reviewing EHRs for patients with positive culture, determining which have a foley, and then ensuring consistency with NHSN definition. Until automated surveillance using standard formula-based infection triggers is widely available, or definitions are less rigorous in order to permit clerical staff to perform surveillance, this would not be a productive use of existing resources. |
| 4b Electronic | Completely (2)<br>Partially (2)<br>Minimally (2)<br>Not at All (1) | |
| 4c Exclusions | Completely (6)<br>Minimally (1) | |
| 4d Inaccuracies | Completely (5)<br>Partially (1)<br>Minimally (1) | |
| 4e Implementation | Completely (3)<br>Partially (3)<br>Minimally (1) | |

**Measure number:** PSM-004-10

**Measure name:** Central venous catheter-related bloodstream infections (adults)

**Description:** Number of central venous catheter-related bloodstream infections per 1,000 discharges in cases age 18 years and older

**Numerator statement:** Discharges with central venous catheter related infections. The numerator event occurs during the inpatient stay. The quantity of time can be determined by the user, but it is generally one-three years.

**Denominator statement:** All surgical and medical discharges among adults, and all obstetric discharges

**Level of Analysis**: Facility/Agency

**Type of Measure:** Outcome

**Data Source:** Electronic administrative data/claims

**Measure developer:** Agency for Healthcare Research and Quality

**Type of Endorsement (endorsed or time-limited):** Endorsed

**Summary table of TAP ratings of subcriteria and comments:**

<table>
<tr><td colspan="3">IMPORTANCE TO MEASURE AND REPORT</td></tr>
<tr><td>1a Impact</td><td>Completely (7)</td><td rowspan="3">The TAP stated that the measure meets the criteria for importance to measure and report.<br><br>There was concern that the measure's reliance on administrative and claims data might inhibit timely data collection.</td></tr>
<tr><td>1b Gap</td><td>Completely (7)</td></tr>
<tr><td>1c Relation to outcomes</td><td>Completely (6)<br>Not at all (1)</td></tr>
<tr><td colspan="3">SCEINTIFIC ACCEPTABILTY</td></tr>
<tr><td>2a Specs</td><td>Completely (3)<br>Partially (3)<br>Minimally (1)</td><td rowspan="5">The TAP noted that the measure is well specified, including the exclusions.<br><br>Some TAP members questioned why the timeframe involves a one- to three-year range; the measure developer explained that the timeframe is vague because the measure requires collection of a specified number of data points to assess risk. This time window is meant to allow for enough cases to occur so that the measure can be calculated.<br><br>The developer stated that the measure is undergoing validity testing and that the measure originally used two ICD-9-CM codes that were somewhat vague and were not adequately limited to central-line infections. To improve surveillance, the CDC and CMS applied a new ICD-9-CM code, which is specifically limited to central-line infections. The validity</td></tr>
<tr><td>2b Reliability</td><td>Completely (1)<br>Partially (4)<br>Minimally (1)<br>Not at all (1)</td></tr>
<tr><td>2c Validity</td><td>Completely (1)<br>Partially (3)<br>Not at All (3)</td></tr>
<tr><td>2d Exclusions</td><td>Completely (4)<br>Partially (2)<br>Minimally (1)</td></tr>
<tr><td>2e Risk-adjustment</td><td>Completely (3)<br>Partially (3)<br>Minimally (1)</td></tr>
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|---|---|---|
| 2f Meaningful differences | Completely (3)<br>Partially (2)<br>Minimally (1)<br>Not at all (1) | testing, however, was conducted using the previous codes. Results yield a large number of false positives from infections on admission or other bloodstream infections not related to central lines. AHRQ is currently conducting projects to address the false negatives results.<br><br>A TAP member questioned why the measure encourages stratifying to identify disparities; yet, it was not considered mandatory. After some discussion, the TAP and measure developer agreed that this method of stratification would not impact results. |
| 2g Comparability | Completely (2)<br>Partially (1)<br>Minimally (1)<br>Not at all (1)<br>Not applicable (2) | |
| 2h Disparities | Completely (3)<br>Partially (2)<br>Minimally (1) | |
| USEABILITY | | |
| 3a Distinctive | Completely (3)<br>Partially (3)<br>Not at All (1) | This measure was previously endorsed as one component of a composite measure (0531: Patient safety for selected indicators). TAP members addressed the similarities of this measure and measure PSM-001-10 National Healthcare Safety Network (NHSN) central line-associated bloodstream infection (CLABSI) outcome measure. Although there are notable similarities, both measures use difference data sources, which could affect the comparability of results. The TAP agreed that the Steering Committee will ultimately determine the additive value of endorsing both measures.<br><br>**General Comments Received on the Survey**<br>The measure is similar to PSM 001 but has a different patient population. |
| 3b Harmonization | Completely (2)<br>Partially (2)<br>Minimally (1)<br>Not at All (2) | |
| 3c Added value | Completely (2)<br>Partially (2)<br>Not at All (3) | |
| FEASIBILITY | | |
| 4a Data a byproduct of care | Completely (4)<br>Partially (1)<br>Minimally (2) | |
| 4b Electronic | Completely (3)<br>Partially (1)<br>Minimally (2)<br>Not at all (1) | |
| 4c Exclusions | Completely (4)<br>Partially (2)<br>Minimally (1) | |
| 4d Inaccuracies | Completely (4)<br>Partially (2)<br>Minimally (1) | |
| 4e Implementation | Completely (4)<br>Partially (2)<br>Minimally (1) | |

**Measure number:** PSM-005-10

**Measure name:** Central venous catheter-related bloodstream infections (pediatrics)

**Description:** Number of central venous catheter-related bloodstream infections per 1,000 discharges in cases under age 18 years

**Numerator statement:** Discharges with central venous catheter related infections. The numerator event occurs during the inpatient stay. The quantity of time can be determined by the user, but it is generally one-three years.

**Denominator statement:** All surgical and medical discharges among pediatrics. The denominator event occurs during the inpatient stay. The quantity of time can be determined by the user, but it is generally one-three years.

**Level of Analysis:** Facility/Agency

**Type of Measure:** Outcome

**Data Source:** Electronic administrative data/claims

**Measure developer:** AHRQ

**Type of Endorsement (endorsed or time-limited):** Endorsed

**Summary table of TAP ratings of sub criteria and comments:**

| IMPORTANCE TO MEASURE AND REPORT | | |
|---|---|---|
| 1a Impact | Completely (7) | The TAP had no concerns about importance to measure and report. It stated that this measure is similar to the previously discussed NQF measure PSM-004-10 Central venous catheter-related bloodstream infections (adults) and that it has similar positions on the measure's subcriteria. |
| 1b Gap | Completely (7) | |
| 1c Relation to outcomes | Completely (6)<br>Not at all (1) | |
| SCEINTIFIC ACCEPTABILTY | | |
| 2a Specs | Completely (3)<br>Partially (4) | A TAP member questioned why the defined pediatrics population includes patients 18 years and younger. The measure developer indicated that the age range is somewhat arbitrary. The developer also noted that it is a standard age range cut-off for AHRQ indicators. |
| 2b Reliability | Completely (1)<br>Partially (4)<br>Minimally (1)<br>Not at all (1) | |
| 2c Validity | Completely (1)<br>Partially (4)<br>Minimally (1)<br>Not at all (1) | |
| 2d Exclusions | Completely (4)<br>Partially (2)<br>Minimally (1) | |
| 2e Risk-adjustment | Completely (3)<br>Partially (3)<br>Minimally (1) | |

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| 2f Meaningful differences | Completely (4)<br>Partially (2)<br>Not at all (1) | |
| 2g Comparability | Completely (2)<br>Partially (2)<br>Not at all (1)<br>NA (2) | |
| 2h Disparities | Completely (2)<br>Partially (4)<br>NA (1) | |
| USEABILITY | | |
| 3a Distinctive | Completely (4)<br>Partially (2)<br>Minimally (1) | |
| 3b Harmonization | Completely (3)<br>Partially (2)<br>Minimally (1)<br>Not at all (1) | |
| 3c Added value | Completely (4)<br>Partially (1)<br>Minimally (1)<br>Not at all (1) | |
| FEASIBILITY | | |
| 4a Data a byproduct of care | Completely (5)<br>Partially (1)<br>Minimally (1) | |
| 4b Electronic | Completely (4)<br>Partially (2)<br>Not at all (1) | |
| 4c Exclusions | Completely (5)<br>Partially (2) | |
| 4d Inaccuracies | Completely (4)<br>Partially (2)<br>Not at all (1) | |
| 4e Implementation | Completely (2)<br>Partially (4) | |

**Measure number:** PSM-006-10

**Measure name:** Risk adjusted surgical site infection outcome measure

**Description:** This is a hospital-based, risk-adjusted, case mix-adjusted surgical site infection measure of adults 18 years of age and over.

**Numerator statement:** The outcome of interest is a hospital-specific risk-adjusted deep incisional surgical site infection (SSI) or organ/space SSI as defined by American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) within 30 days of any ACS NSQIP listed (CPT) surgical procedure. Targeted events within 30 days of the operation are included.

**Denominator statement:** Patients undergoing any ACS NSQIP listed (CPT) surgical procedure (see separate list of ACS NSQIP CPT codes). Data are derived from a systematic sample collected over a one-year period constructed so as to meet sample size requirements specified for the measure.

**Level of analysis:** Facility/Agency

**Type of measure:** Outcome

**Data source:** Documentation of original self-assessment, Management data, pharmacy data

**Measure developer:** American College of Surgeons

**Type of endorsement (endorsed or time-limited):** Endorsed

**Summary table of TAP ratings of subcriteria and comments:**

| IMPORTANCE TO MEASURE AND REPORT | | |
|---|---|---|
| 1a Impact | Completely (7) | TAP members strongly believe that this measure meets importance criteria. Two attributes highlighted by the TAP are that the measure is intended to be utilized by hospitals not formally participating in the NSQIP and that the measure allows for benchmarking between hospitals. |
| 1b Gap | Completely (7) | |
| 1c Relation to outcomes | Completely (6)<br>Partially (1) | |
| SCEINTIFIC ACCEPTABILTY | | |
| 2a Specs | Completely (5)<br>Partially (2) | Some TAP members raised concern about the reliability testing, particularly related to data collection and case load, which could be 200-500 cases per facility. Other TAP members questioned the exclusion of trauma and transplant patients. In response, the developer stated that since NSQIP uses a different database to collect data on trauma and transplant patients, it was difficult to develop a model for those patients.<br><br>Overall consensus from the TAP was that the measure strongly meets subcriteria for scientific acceptability, although it was acknowledged that field testing has not yet been completed because the measure is new.<br><br>The TAP requested the following additional information from the |
| 2b Reliability | Completely (3)<br>Partially (3)<br>Not at all (1) | |
| 2c Validity | Completely (4)<br>Partially (1)<br>Minimally (2) | |
| 2d Exclusions | Completely (5)<br>Partially (2) | |
| 2e Risk-adjustment | Completely (6)<br>Partially (1) | |
| 2f Meaningful differences | Completely (6)<br>Partially (1) | |

| | | |
|---|---|---|
| 2g Comparability | Completely (2)<br>Partially (2)<br>Minimally (1)<br>Not at all (1)<br>NA (1) | measure developer:<br>• Confirmation on whether the measure is applicable to "any" ACS NSQIP listed CPT surgical procedure;<br>• List of ACS NSQIP CPT Codes as indicated on measure submission form; and<br>• Rationale for excluding transplant patients.<br><br>The measure developer updated the specifications per the TAP's recommendations. |
| 2h Disparities | Completely (4)<br>Partially (2)<br>NA (1) | |
| USEABILITY | | |
| 3a Distinctive | Completely (6)<br>Partially (1) | Overall the TAP believed that a wide range of hospitals could utilize this measure because a fewer number of variables would need to be collected, thus lessening the burden of data collection. |
| 3b Harmonization | Completely (3)<br>Partially (2)<br>Minimally (1) | |
| 3c Added value | Completely (6)<br>Minimally (1) | |
| FEASIBILITY | | |
| 4a Data a byproduct of care | Completely (2)<br>Partially (5) | The data collection burden for non-NSQIP sites was viewed as problematic. The developer estimates that less than one FTE would be required to fulfill data collection responsibilities.<br><br>The TAP requested the following additional information from the measure developer:<br>• Explanation of implementation plan for non-ACS NSQIP participants.<br><br>The measure developer updated the specifications per the TAP's recommendations. |
| 4b Electronic | Completely (3)<br>Partially (3)<br>Not at all (1) | |
| 4c Exclusions | Completely (6)<br>Partially (1) | |
| 4d Inaccuracies | Completely (6)<br>Partially (1) | |
| 4e Implementation | Completely (4)<br>Partially (2)<br>Minimally (1) | |

**Measure number:** PSM-007-10

**Measure name:** Risk adjusted urinary tract infection outcome measure

**Description:** Risk adjusted, case mix adjusted urinary tract infection outcome measure of adults 18+ years.

**Numerator statement:** The outcome of interest is a hospital-specific risk-adjusted urinary tract infection (UTI) as defined by American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) within 30 days of any ACS NSQIP listed (CPT) surgical procedure.
Targeted events within 30 days of the operation are included.

**Denominator statement:** Patients undergoing any ACS NSQIP listed (CPT) surgical procedure except certain CPTs involving the urinary tract (50220, 50545, 50400, 50205, 51040, 54640, 53852, 55866, 52450, 52234 (see separate list of ACS NSQIP CPT codes). Data are derived from a systematic sample collected over a one-year period constructed to as to meet sample size requirements specified for the measure.

**Level of Analysis:** Facility/Agency

**Type of Measure:** Outcome

**Data Source:** Documentation of original self-assessment, Management data, pharmacy data

**Measure developer:** ACS

**Type of Endorsement (endorsed or time-limited):** Endorsed

**Summary table of TAP ratings of sub criteria and comments:**

| | | |
|---|---|---|
| IMPORTANCE TO MEASURE AND REPORT | | |
| 1a Impact | Completely (6)<br>Minimally (1) | There was strong agreement that the measure meets the sub-criteria for importance. |
| 1b Gap | Completely (6)<br>Not at all (1) | |
| 1c Relation to outcomes | Completely (6)<br>Not at all (1) | |
| SCEINTIFIC ACCEPTABILTY | | |
| 2a Specs | Completely (5)<br>Partially (2) | Although the TAP generally believed that the definitions within the specifications are clearly articulated, they were unsure if NSQIP utilizes the NHSN's definition for UTI.<br><br>The TAP was also concerned that reliability and validity testing of the risk model had only been done through modeling. The developer stated that inter-rater reliability is tested regularly. Also, NSQIP has measured UTIs using the endorsed set of predictors; this risk model uses fewer predictors ("NSQIP lite"). There was consensus from the TAP that the measure meets the |
| 2b Reliability | Completely (2)<br>Partially (4)<br>Not at all (1) | |
| 2c Validity | Completely (3)<br>Partially (2)<br>Not at all (2) | |
| 2d Exclusions | Completely (4)<br>Partially (3) | |

| | | |
|---|---|---|
| 2e Risk-adjustment | Completely (5)<br>Partially (2) | subcriteria for scientific acceptability.<br><br>The TAP requested that the measure developer do the following:<br>• Explain how the ACS defines urinary tract infection;<br>• Confirm whether measure is applicable to "any" ACS NSQIP listed CPT surgical procedure.<br>• Provide list of ACS NSQIP CPT codes as indicated on measure submission form; and<br>• Provide rationale for excluding transplant patients.<br><br>The measure developer updated the specifications per the TAP's recommendations. |
| 2f Meaningful differences | Completely (4)<br>Partially (3) | |
| 2g Comparability | Completely (2)<br>Minimally (1)<br>Not at all (1)<br>NA (3) | |
| 2h Disparities | Completely (3)<br>Partially (2)<br>Minimally (1)<br>Not at all (1) | |
| USEABILITY | | |
| 3a Distinctive | Completely (5)<br>Partially (1)<br>Minimally (1) | The TAP agreed that the Steering Committee will ultimately determine the additive value of endorsing this measure over other UTI measures.<br><br>The TAP expressed concerns about harmonization with other UTI measures.<br><br>The TAP noted that this measure does not span the continuum of care, raising a potential harmonization issue. |
| 3b Harmonization | Completely (3)<br>Minimally (1)<br>Not at all (3) | |
| 3c Added value | Completely (4)<br>Partially (1)<br>Minimally (1)<br>Not at all (1) | |
| FEASIBILITY | | |
| 4a Data a byproduct of care | Completely (2)<br>Partially (4)<br>Minimally (1) | The data collection burden for non-NSQIP sites was viewed as problematic.<br><br>The TAP requested the following additional information from the measure developer:<br>• Explanation of implementation plan for non-ACS NSQIP participants.<br><br>The measure developer updated the specifications per the TAP's recommendations. |
| 4b Electronic | Completely (2)<br>Partially (5) | |
| 4c Exclusions | Completely (4)<br>Partially (2) | |
| 4d Inaccuracies | Completely (3)<br>Partially (3)<br>Minimally (1) | |
| 4e Implementation | Completely (3)<br>Partially (3)<br>Not at all (1) | |

** This measure was withdrawn following the TAP's discussions.*

**Measure number:** PSM-008-10

**Measure name:** Surgical site infection rate—ambulatory surgery

**Description:** The measure identifies the percentage of ambulatory surgery admissions developing a post-operative surgical site infection within 30 days after the operation, or within one year of the operation if an implant was placed.

**Numerator statement:** Ambulatory Surgery Center (ASC) admissions developing a post-operative surgical site infection (SSI) detected through surveillance within 30 days after the operation, or within one year of the operation if an implant was placed. Within 30 days after the operation or within one year of the operation if an implant was placed.

**Denominator statement:** All ASC admissions that have an operation performed. Within 30 days after the operation or within one year of the operation if an implant was placed.

**Level of analysis:** Facility/Agency

**Type of measure:** Outcome

**Data source:** Organizational policies and procedures, paper medical record/flowsheet, management data

**Measure developer:** ASC Quality Collaboration

**Type of endorsement (endorsed or time-limited):** Endorsed

**Summary table of TAP ratings of sub criteria and comments:**

| | | |
|---|---|---|
| IMPORTANCE TO MEASURE AND REPORT | | |
| 1a Impact | | Conceptually, the TAP agreed that this is an important ambulatory care metric. |
| 1b Gap | | |
| 1c Relation to outcomes | | |
| SCEINTIFIC ACCEPTABILTY | | |
| 2a Specs | | The TAP was concerned about reliability of the data, noting that the measure required data from all patients at all facilities. Additionally, the data have not been validated or audited. The developer stated that this is a routine data collection protocol in most ASCs. However, there is no protocol for data auditing at the present time.<br><br>Several TAP members also mentioned how difficult it would be for |
| 2b Reliability | | |
| 2c Validity | | |
| 2d Exclusions | | |
| 2e Risk-adjustment | | |
| 2f Meaningful differences | | |
| 2g Comparability | | |

| | | |
|---|---|---|
| 2h Disparities | | surgeons to obtain post-operative day 30 patient information.<br><br>TAP members were especially concerned about the inclusion of colonoscopy and endoscopy procedures and how these procedures inflated the denominator. The developer recognized that this will contribute to an inflated denominator but stated that removing these procedures would present challenges because facilities capture all data from all procedures in the same data pool.<br><br>Additionally, TAP members were concerned that the data collection tool is not standardized across sites. The developer stated that although there is no standardized data collection tool, collecting these data is a fairly standard process across ASCs.<br><br>The burden of patient follow-up was also listed as a barrier to adequate data collection.<br><br>The TAP agreed that adoption of standard definitions and approaches to tracking these will mitigate the accountability issues in reporting from ASCs.<br><br>Finally, TAP members noted that the measure has not been formally tested. According to the developer, several pilot programs are underway. |
| USEABILITY | | |
| 3a Distinctive | | The TAP determined that the metric is not usable in its present state because of the inclusion of colonoscopy and endoscopy procedures. |
| 3b Harmonization | | |
| 3c Added value | | |
| FEASIBILITY | | |
| 4a Data a byproduct of care | | The TAP reiterated that the patient follow-up for SSI poses a data collection burden, because it requires follow-up by phone with all patients. Furthermore, the clinician conducting the follow-up must be well versed in verifying presence of SSIs through the description of patient symptoms over the phone.<br><br>The financial cost linked to patient follow-up was also viewed as a barrier to implementation. |
| 4b Electronic | | |
| 4c Exclusions | | |
| 4d Inaccuracies | | |
| 4e Implementation | | |