Operational Definitions

March 2018

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OPERATIONAL DEFINITION

MEASUREMENT:  Adverse Drug Events (ADE)

I. Description and Rationale

This measure answers the question: How often do is a patient harmed due to drugs given to them?

Adverse drug events will be defined per the National Coordinating Council for Medication Error Reporting and Prevention’s Index for Categorizing Medication Errors.

II. Population Definition

The patient population for this measure is defined per the patient population operational definition. Inpatient and observational stay patients will be included in the measure.

Inclusion criteria
All patients are included who are defined as inpatient or under observation at the hospital.

III. Data Source(s)

Each hospital will report data using their own collection methods until specific high detection methods are prescribed by the network.

IV. Sampling and Data Collection Plan

Adverse drug events are assigned the month the event occurred.

V. Calculation

Numerator: Number of adverse drug events per NCC MERP’s Index for Categorizing Medication Errors.

Numerator will be reported as Level E and combined Level F-I as defined below.

E = An error occurred that may have contributed to or resulted in temporary harm to the patient and required intervention

F = An error occurred that may have contributed to or resulted in temporary harm to the patient and required initial or prolonged hospitalization

G = An error occurred that may have contributed to or resulted in permanent patient harm

H = An error occurred that required intervention necessary to sustain life

I = An error occurred that contributed to or resulted in the patient’s death
Denominator: Total number patient days.

Number adverse drug events in category E per number patient days per 1000 patients
\[(\text{Numerator/Denominator}) \times 1000\]

Number of adverse drug events in categories F-I (combined) per number of patient days per 1000 patients
\[(\text{Numerator/Denominator}) \times 1000\]

VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

N/A

VIII. Experts/Resources

NCC MERP’s Index for Categorizing Medication Errors.

X. Revision History

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<td>Version 1</td>
<td>Karen Zieker</td>
<td>Version 1</td>
<td>30-Mar-2012</td>
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</table>
OPERATIONAL DEFINITION

MEASUREMENT: Multidrug-Resistant Organism & Clostridium difficile Infection (MDRO/CDI)

I. Definition

Multidrug-Resistant Organisms (MDRO) are bacteria that are resistant to many different classes of antibiotics. Treatment options are limited for patients who become infected with these organisms and infections with these organisms are associated with increased lengths of stay, costs, and mortality. Three important MDROs are methicillin-resistant Staphylococcus aureus (MRSA), vancomycin-resistant Enterococcus spp. (VRE), and carbapenem-resistant Enterobacteriaceae (CRE).

Clostridium difficile is an important pathogen associated with antibiotic use. Children who have a Clostridium difficile infection (CDI) during their hospitalization are at greater risk for mortality and prolonged hospital stay.

The excess use of antibiotics contributes to the development of MDROs and CDI. In order to monitor antibiotic use we will use antibiotic days of therapy (DOT) per 1000 patient days. A patient is considered to have a day of therapy if they receive at least one dose of an antibiotic on that day. DOT is then calculated by aggregating all the antibiotics plus their durations. For example a patient receiving 2 antibiotics for 5 days would have a DOT of 10. Combination drugs such as ampicillin/subbactam (Unasyn) and piperacillin/tazobactam (Zosyn) count as only 1 drug (specific inclusion and exclusion criteria below). Days of therapy should ideally be obtained from electronic medication administration record (eMAR) data.

Antibiotic Stewardship Programs (ASPs), optimize the use of antibiotics, reduce adverse events associated with antibiotic use, and decrease the rate of antibiotic resistance. In recognition of the urgent need to improve antibiotic use in hospitals the implementation of the CDC seven core elements is recommended: leadership commitment, accountability, drug expertise, action, tracking, reporting, and education.

MDRO and CDI definitions align with NHSN standards.

II. Description and Rationale

MDRO infections and CDI are impacted by antibiotic use. The identification of these pathogens may require additional antibiotic stewardship and infection control efforts to reduce the occurrence of these organisms and related infections. The goal of this work is to provide a mechanism for facilities to report and analyze these data as it will help in the ongoing efforts of antibiotic stewardship and infection prevention.

III. Population Definition

Multi-Drug Resistant Organisms & Clostridium difficile
- Patients residing in inpatient units and observation patients
  o Free-Standing (FS) Children’s Hospitals: all patients admitted irrespective of age
  o Children’s Hospitals within a larger adult hospital (HWH): All patients admitted to a pediatric unit irrespective of age

MDRO:
  o An MDRO event: All MDRO isolates, in accordance with NHSN counting rules below, from any specimen source and unique blood source MDRO isolates.
  o For MRSA blood isolates follow the NHSN 14 day rule (Appendix A)
For VRE and CRE follow the NHSN rules when monitoring *All Specimen* types (Appendix B)

**Inclusion criteria:**
- MRSA: Bloodstream isolates only.
- VRE: any positive isolate during hospitalization
- CRE: any positive isolate resistant to imipenem, meropenem, doripenem, or ertapenem OR documentation that the isolate possess a carbapenemase) during hospitalization
  - Enterobacteriaceae that area inherently resistant to imipenem (eg. Proteus sp., Morganella sp., Providencia sp.) are considered CRE if they are resistant to meropenem, doripenem, or ertapenem.

**Exclusion criteria:**
- Present on Admission (POA) or Community Onset (CO)
- Outpatient population
- Active surveillance testing

- **NOTE:** Active surveillance refers to routinely performing cultures to identify potential pathogens independent of the clinical situation and independent of whether these pathogens are causing the current clinical disease. For example, weekly nasal cultures of all patients in the intensive care unit would be considered active surveillance.

**Clostridium difficile infection:**
- A CDI event: All CDI's, in accordance with NHSN counting rules below, from any specimen source.
- For CDI follow the NHSN 14 day rule (Appendix C)

**Inclusion criteria**
- Positive for toxin-producing *C. difficile* on an unformed stool specimen (conforms to the shape of the container).
- Patient has evidence of pseudomembranous colitis on gross anatomic (includes endoscopic exams) or histopathologic exam.

**Exclusion criteria:**
- Present on Admission (POA) or Community Onset (CO)
- Outpatient population
- Active surveillance testing

**Days of Therapy:**
- All Antibiotic/antibacterial days of therapy (DOT). If a patient receives one or more doses of an antibiotic then that counts as a DOT.

**Inclusion criteria:**
- Intravenous, oral, intramuscular, and inhalation
- Free-Standing (FS) Children’s Hospitals: All units
- Children’s Hospitals within a larger adult hospital (HWH): Only pediatric units

**Exclusion criteria:**
- Topical antibiotics (including drops used in the ears and eyes)
- Antivirals, antifungals, anti-parasitic
- Outpatient population
Seven Core Elements of Hospital Antibiotic Stewardship Programs:

- **Leadership Commitment**: Dedicating necessary human, financial and information technology resources.
- **Accountability**: Appointing a single leader responsible for program outcomes. Experience with successful programs show that a physician leader, preferably an infectious diseases physician, is effective.
- **Drug Expertise**: Appointing a single pharmacist leader responsible for working to improve antibiotic use.
- **Action**: Implementing at least one recommended action (of the 17 outlined in link below), such as systemic evaluation of ongoing treatment need after a set period of initial treatment (i.e. “antibiotic time out” after 48 hours).
- **Tracking**: Monitoring antibiotic prescribing and resistance patterns.
- **Reporting**: Regular reporting information on antibiotic use and resistance to doctors, nurses and relevant staff.
- **Education**: Educating clinicians about resistance and optimal prescribing.

Please refer to CDC Seven Core Elements guidelines for more details on each element: [https://www.cdc.gov/getsmart/healthcare/pdfs/core-elements.pdf](https://www.cdc.gov/getsmart/healthcare/pdfs/core-elements.pdf)

IV. Data Source(s)

This work contains two core reporting options for MDRO and *C. difficile* – Laboratory Identified (LabID) Event reporting and Infection Surveillance reporting. These reporting options function as two separate and independent reporting methods - one focused on laboratory based reporting and the second on infection criteria based surveillance reporting.

**Participants may choose either one of these reporting options.** If an institution already uses either option they are free to continue using that method. An institution can use different methods depending on the organism being followed.

Please refer to NHSN guidelines for more details on each reporting method: [http://www.cdc.gov/nhsn/pdfs/pscmanual/12pscmdro_cdadcurrent.pdf](http://www.cdc.gov/nhsn/pdfs/pscmanual/12pscmdro_cdadcurrent.pdf)

Please refer to Appendix D on differences between LabID and Infection Surveillance.

V. Sampling and Data Collection Plan

MDRO and CDI events are assigned to the month the event was diagnosed.

VI. Calculation

**Numerator**

1. Number of hospital-acquired MRSA bacteremia events in hospitalized patients (FS Institutions: All admitted patients; HWH: admitted patients to pediatric units)
2. Number of hospital-acquired VRE events in hospitalized patients (FS Institutions: All admitted patients; HWH: admitted patients to pediatric units)
3. Number of hospital acquired CRE events in hospitalized patients (FS Institutions: All admitted patients; HWH: admitted patients to pediatric units)
4. Number of hospital-acquired *C. difficile* infection event (FS Institutions: All admitted patients; HWH: admitted patients to pediatric units)
5. Days of therapy (FS: antibiotics/antibacterial prescribed to all admitted patients on all units; HWH: antibiotics/antibacterial prescribed to admitted patients on pediatric units only) example of metric calculation: a patient receiving 2 antibiotics for 5 days would have a DOT of 10.)
6.) Number of hospitals utilizing ALL seven core elements

**Denominator**
1.) per 1000 patient days
2.) Per 1000 patient days
3.) Per 1000 patient days
4.) Per 1000 patient days
5.) Per 1000 patient days
6.) Number of TOTAL hospitals reporting on the seven core elements

**VII. Data Quality Audit Procedures**

Hospitals should develop their own procedures for auditing data quality, until quality auditing procedures are suggested by the network.

**VIII. Notes**

N/A

**IX. Experts/Resources**

https://www.cdc.gov/getsmart/healthcare/pdfs/core-elements.pdf

http://www.cdc.gov/nhsn/pdfs/pscmanual/2psc_identifyinghais_nhsncurrent.pdf

http://www.cdc.gov/nhsn/pdfs/pscmanual/12pscmdro_cdadcurrent.pdf

**X. Attachments**

**Appendix A:**
MRSA 14 day count rule:
EXAMPLE: Monitoring Blood Specimens only with multiple isolates from same location

On January 1, an ICU patient has a positive MRSA urine culture which is **not entered** into NHSN because blood specimens only are being monitored. On January 2, while in the same location (ICU), the same patient has a positive MRSA blood culture which **is entered** into NHSN. This starts the 14 day count. On January 5, while in the same location (ICU), the same patient has another positive MRSA blood culture which is **not entered** into NHSN because it has not been 14 days since the original positive MRSA blood culture while in the same location. The January 5 positive blood culture starts a new 14 day count. On January 19, while in the same location (ICU), the same patient has another positive MRSA blood culture. The January 19 MRSA blood culture **is entered** into NHSN because it has been > 14 days since the patient’s most recent positive blood culture (January 5) while in the same location (January 19 is day 15).

### Appendix B: VRE and CRE All Specimens rule

**EXAMPLE:** Monitoring All Specimens with multiple isolates from same location

On January 1, an ICU patient has positive MRSA urine culture which is **entered** into NHSN because it is the first MDRO isolate of the month for this patient. **No other non-blood MRSA isolates should be reported for the month for this patient and location as these would represent duplicate isolates.** On January 2, while in the same location (ICU), the same patient has a positive MRSA blood culture which **is entered** into NHSN because it is the first positive MRSA blood isolate for the month. Any additional MRSA positive blood isolates for the month should be reported following the same 14-day rule as when reporting Blood Specimens only. Subsequent months should be reported in the same manner.
Appendix C
CDI 14 day count rule
EXAMPLE: On January 1, an ICU patient has a *C. difficile* toxin-positive laboratory result which is entered into NHSN. On January 4, while in the same location (ICU), the same patient has another positive *C. difficile* toxin-positive laboratory result which is *not* entered into NHSN because it is a duplicate for the patient and location (has not been >14 days since the original *C. difficile* toxin-positive laboratory result while in the same location). On January 16, while in the same location (ICU), the same patient has another *C. difficile* toxin-positive laboratory result. While it has been more than 14 days since the initial positive *C. difficile* toxin-positive laboratory result was entered into NHSN (January 1) for the same patient and same location, it has not been >14 days since the patient’s most recent *C. difficile* toxin-positive laboratory result (January 4) while in the same location. Therefore, the *C. difficile* toxin-positive laboratory result for January 16 is *not* entered into NHSN. On January 31, the patient has another *C. difficile* toxin-positive laboratory result while in the same location (ICU). Since it has been >14 days since the patient’s most recent *C. difficile* toxin-positive laboratory result (January 16) while in the same location, this event is entered into NHSN.

Appendix D
Lab ID vs. Infection Surveillance

<table>
<thead>
<tr>
<th>LabID Event</th>
<th>Infection Surveillance (using HAI surveillance definitions)</th>
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<tr>
<td>Protocol</td>
<td>LabID Event protocol in Chapter 12 of NHSN manual</td>
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<tr>
<td></td>
<td>Infection Surveillance protocol in Chapter 12 of NHSN manual and HAI site-specific definitions in NHSN manual (e.g., BSI, UTI, SSI, PNEU, VAE, and GI-CDI and other HAI definitions)</td>
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<tr>
<td>Signs &amp; Symptoms</td>
<td>NONE. Laboratory and admission data, without clinical evaluation of patient</td>
</tr>
<tr>
<td></td>
<td>Combination of laboratory data and clinical evaluation of patient (signs/symptoms)</td>
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<tr>
<td>Surveillance Rules</td>
<td>- HAI and POA do NOT apply</td>
</tr>
<tr>
<td></td>
<td>- Transfer Rule does NOT apply</td>
</tr>
<tr>
<td></td>
<td>- Location = location of patient at time of specimen collection</td>
</tr>
<tr>
<td></td>
<td>- Event date = specimen collection date</td>
</tr>
<tr>
<td></td>
<td>- Device days and patient days must be collected separately for each monitored location</td>
</tr>
<tr>
<td></td>
<td>- Inpatient reporting only</td>
</tr>
<tr>
<td>Denominator Reporting</td>
<td>- Number of patient days and admissions</td>
</tr>
<tr>
<td></td>
<td>- Can be reported by specific location or facility-wide, depending on reporting option(s) selected</td>
</tr>
<tr>
<td></td>
<td>- Inpatient and/or outpatient</td>
</tr>
<tr>
<td></td>
<td>- HAI protocols used</td>
</tr>
<tr>
<td></td>
<td>- Events are either HAI or not, therefore LabID Event categorizations do not apply</td>
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<tr>
<td></td>
<td>- Only HAIs are reported to NHSN</td>
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<tr>
<td>Categorization of Infections</td>
<td>- Events categorized based on inpatient or outpatient and admission and specimen collection dates</td>
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<tr>
<td></td>
<td>- Healthcare Facility Onset (HO) or Community Onset (CO)</td>
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<td></td>
<td>- Community Onset Healthcare Facility-Associated (CO-HCFA) for <em>C. difficile</em> only</td>
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<tr>
<td></td>
<td>- HO and CO LabID Events must be reported to NHSN</td>
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<tr>
<td></td>
<td>- Additional categorizations are applied to <em>C. difficile</em>, which include Incident CDI event and Recurrent CDI event</td>
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XI. Revision History
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<td>V 1.0</td>
<td>Chris Kramer</td>
<td>Initial Draft</td>
<td>12/16/2016</td>
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<tr>
<td>V 2.0</td>
<td>Expert Panel</td>
<td>Clarifications to population definition, days of therapy, numerator/denominator, and added appendices</td>
<td>2/21/2017</td>
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<tr>
<td>V 3.0</td>
<td>Jason Newland</td>
<td>Active Surveillance example added</td>
<td>3/30/2017</td>
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<td>V 4.0</td>
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<td>V 5.0</td>
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<td>V 6.0</td>
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<tr>
<td>V 7.0</td>
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OPERATIONAL DEFINITION

MEASUREMENT: Central Line Associated Blood Stream Infections (CLA-BSI)

I. Description and Rationale

This measure answers the question: How often is a patient harmed due to central line associated blood stream infections (CLABSIs)?


II. Population Definition

The patient population for this measure is defined per the patient population operational definition. Inpatient and observational stay patients will be included in the measure.

ALL units collect CLA-BSI data: PICU, CICU, NICU, Hematology-Oncology and all other units.

Inclusion criteria
All patients are included who are defined as inpatient or under observation at the hospital including one calendar day post discharge (including CLABSI’s related to Mucosal Barrier Injuries (MBI’s)).

Exclusion criteria
Infection must not be present on admission into the hospital as defined by NHSN. For most infections, this means that the infection does not become evident until two calendar days or more after admission, but each infection must be assessed individually.

III. Data Source(s)

Each hospital will report data using their own collection methods until specific high detection methods are prescribed by the network.

IV. Sampling and Data Collection Plan

CLA-BSIs are assigned to the month when the infection occurred.

CLA-BSIs are collected at the PICU, NICU, CICU, hematology-oncology units and for all remaining units (grouped as ‘other’)

V. Calculation

Numerator: Number of patients with a CLABSI event, as defined by CDC guidelines. For this measure, distinction is not made between an infection due to CVC/PICC insertion and one due to maintenance practices.

Denominator: Total number of central line days during the time period.

Two analyses:
 a) Number of CLABSI’s per 1000 central line days (Numerator/Denominator) x 1000
b) Total number of blood stream infections

**Process Data:** Observations collected by unit: PICU, CICU, NICU, Hematology-Oncology and all other units.

For more information regarding blood culture monitoring and data collection within the HEM/ONC units please refer to Appendix A.

VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

N/A

VIII. Experts/Resources

[www.cdc.gov/nhsn](http://www.cdc.gov/nhsn)


IX. Attachments

N/A

X. Revision History

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<td>Karen Zieker</td>
<td>Version 1</td>
<td>30-Mar-2012</td>
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<tr>
<td>Version 2</td>
<td>Karen Zieker</td>
<td>Noted that ‘other’ includes all other CLABSI that do not fit the intensive care units</td>
<td>17-Oct-2014</td>
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<tr>
<td>Version 3</td>
<td>Karen Zieker</td>
<td>Indicated the current year for the NHSN measure definition</td>
<td>25-Mar-2015</td>
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<td>Version 4</td>
<td>CLABSI Co-leaders</td>
<td>Exclusion time changed from 48 hrs to 2 calendar days; Added HEM/ONC events by: CLABSI, Secondary infections, Single positive cultures; Added events outside of HEM/ONC units with MBI; Process Data observations collected by: PICU, CICU, NICU, Hematology-Oncology and all other units.</td>
<td>1/13/2016</td>
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<td>Version 5</td>
<td>CLABSI Co-leaders</td>
<td>Changed inclusion criteria from 2 calendar days to 1 calendar day. Aligned with NHSN on manual reference and present on admission. Clarified culture calculation and added appendix</td>
<td>7/21/2017</td>
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Appendix A

HEM/ONC patients residing in HEM/ONC units should have additional blood culture data collected and submitted for: Secondary Blood Stream Infections (BSI) and Single Positives

- For further clarification on Secondary infections [click here](#) for the NHSN guidelines (pages 14-16).
- If a positive blood culture doesn’t meet definitions for CLABSI or a Secondary Infection it would be considered a Single Positive Culture.
- **Calculation Example:** Number of CLABSIs (including MBIs) + number of Secondary BSI + Single Positive cultures (all others) = Total number of all positive blood cultures drawn from central lines on a HEM/ONC unit
OPERATIONAL DEFINITION

MEASUREMENT: Catheter Associated Urinary Tract Infections (CA-UTI)

I. Description and Rationale

This measure answers the question: How often are patients harmed by the occurrence of a catheter associated urinary tract infections?


II. Population Definition

The patient population for this measure is defined per the patient population operational definition. Inpatient and observational stay patients will be included in the measure.

Inclusion criteria

All patients admitted to an inpatient unit are included who are defined as inpatient or under observation at the hospital with an indwelling urinary catheter.

Exclusion criteria

Observation patients admitted to observation units and patients admitted to neonatal intensive care units will be excluded.

Infection must not be incubating at the time of the admission into the hospital. For most infections, this means that the infection does not become evident until 48 hours or more after admission, but each infection must be assessed individually. There is no minimum period of time that the catheter must be in place in order for the UTI to be considered catheter associated.

III. Data Source(s)

Each hospital will report data using their own collection methods until specific high detection methods are prescribed by the network.

IV. Sampling and Data Collection Plan

CA-UTIs are assigned to the month when the infection occurred.

V. Calculation

Events per Catheter Day

Numerator: Number of patients contracting an infection, as defined by CDC guidelines.

Denominator: Total number of indwelling urinary catheter days during the time period.

Number of urinary tract infections per 1000 urinary catheter days

(Numerator/Denominator) x 1000
**Catheter Days per Patient Days**

**Numerator:** Number of catheter days.

**Denominator:** Total number of patient days (excluding NICU)

Number of catheter per 1000 patient days (Numerator/Denominator) x 1000

**VI. Data Quality Audit Procedures**

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

**VII. Notes**

N/A

**VIII. Experts/Resources**

[www.cdc.gov/nhsn](http://www.cdc.gov/nhsn)

[http://www.cdc.gov/nhsn/PDFs/pscManual/7pscCAUTIcurrent.pdf](http://www.cdc.gov/nhsn/PDFs/pscManual/7pscCAUTIcurrent.pdf)

**IX. Attachments**

N/A

**X. Revision History**

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<tr>
<td>Revision</td>
<td>Sharyl Wooton</td>
<td>Addition of catheter rate calculation, and further inclusion/exclusion criteria</td>
<td>02-July-2012</td>
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<tr>
<td>Revision</td>
<td>Karen Zieker</td>
<td>Added the year (2015) after the current version of NHSN in section 1.</td>
<td>25-Mar-2015</td>
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OPERATIONAL DEFINITION

MEASUREMENT: All Employee/Staff Harm (TRIR)

I. Description and Rationale

This measure answers the question: How often are employees/staff hurt in the workplace that requires medical treatment beyond first aid? Work related injuries and illnesses include death, loss of consciousness, days away from work, restricted work activity or job transfer, medical treatment beyond first aid, or needle stick injury or cut from a sharp object that is contaminated with another person’s blood or other potentially infectious material (refer to OSHA website for definition of recordable injury as defined with OSHA’s definition of the TRIR).

II. Population Definition

The employee/staff population for this measure is defined as:

Inclusion criteria
Any individual whose occupational injury or illness would be recorded on the hospital’s OSHA 300 log.

Exclusion criteria
Any individual whose occupational injury or illness would not be recorded on the hospital’s OSHA 300 log.

III. Data Source(s)

Each hospital will report data using their own collection methods that support OSHA recordable injury definitions.

IV. Sampling and Data Collection Plan

Workplace injuries and illnesses are assigned to the month and year when the incident occurred. If multiple injuries/illnesses result, the most significant of such is the recordable injury/illness.

V. Calculation

Numerator: Number of recordable injuries (injury or illness that results in death, loss of consciousness, days away from work, restricted work activity or job transfer, medical treatment beyond first aid, or needle stick injury or cut from a sharp object that is contaminated with another person’s blood or other potentially infectious material (refer to OSHA website in notes for further details).

Denominator: Total number of hours worked in the month.

If a hospital cannot get hours worked in the month then their denominator will be total FTE * 2,000/12 to get a monthly number of hours worked. See appendix A for example.

Measure: Number of workplace injuries and illnesses x 200,000 / Total hours worked; Number of injuries per 100 FTEs
VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

N/A

VIII. Experts/Resources

OSHA website information on recordable injuries.

OSHA 300 log – with definitions of a recordable injury

IX. Attachments

N/A

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<td>Karen Zieker</td>
<td>Version 1</td>
<td>13-Apr-2016</td>
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Appendix A

Determining number of hours worked if only have FTEs.

If your hospital is unable to provide a monthly number of employee hours worked, the number of FTEs can be converted to monthly number of hours with the following equation.

Number of FTEs * 2,000 / 12.

As an example:

Your hospital documents 56 FTEs.
2000 hours in a year (50 weeks * 40 hrs per week)

56 * 2000 = 112,000 number of hours in an entire year for these 56 employees.

Since we want the monthly number of hours worked for these employees we divide 112,000 by 12.

112,000 / 12 = 9,333 hours worked in the month for these 56 employees.

9,333 would be the data value submitted for number of hours worked in the month at your hospital.
OPERATIONAL DEFINITION

MEASUREMENT: Serious Employee/Staff Harm (DART)

I. Description and Rationale

This measure answers the question: How often are employees/staff seriously hurt in the workplace that requires the worker to take time off from their job or be transferred to another job or doing lighter (restricted) duties as defined with OSHAs definition of the DART?

II. Population Definition

The employee/staff population for this measure is defined as:

Inclusion criteria
Any individual whose occupational injury or illness would be recorded on the hospital’s OSHA 300 log.

Exclusion criteria
Any individual whose occupational injury or illness would not be recorded on the hospital’s OSHA 300 log.

III. Data Source(s)

Each hospital will report data using their own collection methods that support OSHA recordable injury definitions.

IV. Sampling and Data Collection Plan

Workplace injuries and illnesses are assigned to the month and year when the incident occurred. If multiple injuries/illnesses result, the most significant of such is the recordable injury/illness.

V. Calculation

Numerator: Number of recordable injuries that require the worker to take time off from their job or be transferred to another job or doing lighter (restricted) duties as defined with OSHAs definition of the DART

Denominator: Total number of hours worked for the month.

If a hospital cannot get hours worked for the month then their denominator will be total FTE * 2,000/12 to get a monthly number of hours worked. See appendix A for example.

Measure: Number of workplace injuries and illnesses requiring job transfer, time off or restricted duties x 200,000 / Total hours worked; Number of serious injuries per 100 FTEs

VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.
VII. Notes

N/A

VIII. Experts/Resources

OSHA website information on recordable injuries.

IX. Attachments

N/A

X. Revision History

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<th>Description of Version</th>
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<tr>
<td>Version 1</td>
<td>Karen Zieker</td>
<td>Version 1</td>
<td>13-Apr-2016</td>
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Appendix A

Determining number of hours worked if only have FTEs.

If your hospital is unable to provide a monthly number of employee hours worked, the number of FTEs can be converted to monthly number of hours with the following equation.

Number of FTEs * 2,000 / 12.

As an example:

Your hospital documents 56 FTEs.
2000 hours in a year (50 weeks * 40 hrs per week)

56 * 2000 = 112,000 number of hours in an entire year for these 56 employees.

Since we want the monthly number of hours worked for these employees we divide 112,000 by 12.

112,000 / 12 = 9,333 hours worked in the month for these 56 employees.

9,333 would be the data value submitted for number of hours worked in the month at your hospital.
OPERATIONAL DEFINITION

MEASUREMENT: Falls

I. Description and Rationale

This measure answers the question: How often do falls happen and how often is harm caused due to falls?

The current version of the National Database of Nursing Quality Indicators (NDNQI), will serve as the official reference guide for rules around defining the injury severity of falls.

II. Population Definition

The patient population for this measure is defined as follows:

**Inclusion criteria**
All patients who are defined as inpatient or under observation at the hospital.

**Exclusion criteria**
Outpatients, non-patient siblings, visitors, and/or employees.

III. Data Source(s)

Each hospital will report data using their own collection methods until specific high detection methods are prescribed by the network. Methods may include, but are not limited to, safety event report or medical record review, automated notifications, or other.

IV. Sampling and Data Collection Plan

Falls are assigned in the month the event occurred.

V. Calculation

**Network Goal Calculation (Falls with injury moderate or greater)**

**Numerator:** Number of falls with injury of moderate or greater severity as defined by NDNQI.

**Denominator:** Total number patient days

**Number of falls with injury per number patient days per 1000 patients**

\[
\text{Number of falls with injury per number patient days per 1000 patients} = \frac{\text{Numerator}}{\text{Denominator}} \times 1000
\]
All Falls Calculation

Numerator: The total number of all inpatient and observation patient falls, excluding developmental falls without injury.

Clarification: All falls do include those with injury moderate or greater. In other words, falls with injury moderate or greater are a subset of All Falls.
Example – In the month of June, your hospital has a total of 5 falls (2 of those with injury of moderate or greater severity) – The # reported for all falls would be 5, and the # reported for injury of moderate or greater severity would be 2.

Denominator: Total number of patient days

(Numerator/Denominator)*1000

VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

A. NDNQI Injury Definitions

None – resulted in no signs or symptoms of injury as determined by post-fall evaluation (which may include x-ray or CT scan)

Minor – resulted in application of ice or dressing, cleaning of a wound, limb elevation, topical medication, pain, bruise or abrasion

Moderate – resulted in suturing, application of steri-strips or skin glue, splinting, or muscle/joint strain

Major – resulted in surgery, casting, traction, required consultation for neurological (e.g., basilar skull fracture, small subdural hematoma) or internal injury (e.g., rib fracture, small liver laceration), or patients with any type of fracture regardless of treatment or patients with coagulopathy who receive blood products as a result of a fall

Death – the patient died as a result of injuries sustained from the fall (not from physiologic events causing the fall)."

B. Developmental Falls with injury should be included in the SPS reporting.

VIII. Experts/Resources

http://www.pressganey.com/solutions/clinical-quality/nursing-quality

Hila Collins, MSN, RN, CPNP-AC, CIC  
Dayton Children’s Hospital  
937-641-5033

Heidi Fields, MSN, RN, CPNP-PC  
St. Louis Children’s Hospital  
314-435-9595
IX. Attachments

N/A

X. Revision History

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<td>Version 1</td>
<td>Karen Zieker</td>
<td>Version 1</td>
<td>30-Mar-2012</td>
</tr>
<tr>
<td>Revision</td>
<td>Sharyl Wooton</td>
<td>Addition to Op Definition of All Falls, and exclusion criteria</td>
<td>02-July-2012</td>
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</table>
| Revision  | Sharyl Wooton     | 1) Update to All Falls – clarify it includes falls with moderate or greater injury.  
2) Removed words do not include under exclusion criteria  
3) Removed () descriptors after exclusion and inclusion criteria (redundant)  
4) Added NDNQI description of Moderate or Greater Falls  
5) Clarified that Developmental Falls, and Assisted Falls are included | 22-Aug-2012    |
| Revision  | Matt Short        | Updated definition based on NDNQI changing Major falls to include “patients with any type of fracture regardless of treatment”                           | 04-Aug-2015    |
| Revision  | Hila Collins, Heidi Fields | Clarified exclusion of developmental falls without injury in All Falls.                                                                                           | 25-Aug-2017    |
OPERATIONAL DEFINITION

MEASUREMENT: OCHSPS Hospital Score by HAC

I. Description and Rationale

This measure answers the question: What improvement stage is the hospital in for a particular HAC? And, what is the overall status of improvement for all 10 HACs (Hospital summary)

OCHSPS utilized the IHI scoring system in addition to specific objective criteria related to the National Network deliverables.

II. Population Definition

The population is all 10 HACs for each of the network hospitals.

III. Data Source(s)

Each hospital will self-report utilizing the attached scoring system. (Appendix A)

IV. Sampling and Data Collection Plan

Hospitals will report data for the month which their data is reported.

V. Calculation

Hospital Summary -

Numerator = Sum of OCHSPS score for each HAC

Denominator: Total number of HACs

VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

N/A

VIII. Experts/Resources

N/A

IX. Attachments

IHI Adapted Scoring – Appendix A
### APPENDIX A

<table>
<thead>
<tr>
<th>Assessment Score</th>
<th>Description</th>
<th>OCHSPS Network Definition (adapted from IHI)</th>
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<tr>
<td>0</td>
<td>Start</td>
<td>No Change</td>
</tr>
<tr>
<td>0.5</td>
<td>Building Alignment</td>
<td>Hospital has signed up to participate in HAC improvements.</td>
</tr>
</tbody>
</table>
| 1                | Forming Team | Team or individual assigned  
|                  |             | Define charter  
|                  |             | Population Defined  
|                  |             | Lit Review, Evidence, Visit Sharepoint  
|                  |             | Operational definition adopted |
| 1.5              | Planning for the project has begun | Team Formed  
|                  |             | Initial AIM Statement & Key Driver Diagram defined  
|                  |             | Data Collection begun & validated  
|                  |             | Project Work Plan |
| 2                | Activity, but no changes | Work Plan Adopted  
|                  |             | Goals Adopted (Annual and Quarterly)  
|                  |             | Key Driver Diagram Adopted (including bundle validated)  
|                  |             | Baseline established  
|                  |             | PDSAs planned |
| 2.5              | Changes tested, but no improvement | Active PDSA Cycles started (improve bundle reliability)  
|                  |             | No improvement to process/outcome measures |
| 3                | Modest Improvement | Centerline shifts for bundle/process at .>= 90% reliability |
| 3.5              | Improvement | Bundle/process sustained at >= 90% reliability  
|                  |             | Centerline for outcome measure at least 50% of goal |
| 4                | Significant Improvement | Bundle/process sustained at >= 90% reliability  
|                  |             | Centerline shifts for outcome measures at goal |
| 4.5              | Sustainable Improvement | Bundle/process sustained at >= 90% reliability  
|                  |             | Outcome measures centerline sustains at goal without special cause |
| 5                | Outstanding sustainable results | Outcome measures equals best in class and sustained |
OPERATIONAL DEFINITION

MEASUREMENT: Patient Definition

I. Description and Rationale

This definition clearly defines the patient population for the OCHSPS project for inpatient/observational status patients.

II. Population Definition

The patient population for the OCHSPS national network is defined as inpatient and observation stay patients. Data for outpatient patients are not considered.

Inclusion criteria

Inpatient patient: A person who has been admitted to a hospital for inpatient hospital services. Generally, a patient is considered an inpatient if admitted with the expectation that he or she will occupy a bed overnight. CMS definition referenced

Observation stay patient: Observation care is a well-defined set of specific, clinically appropriate services, which include ongoing short term treatment, assessment, and reassessment before a decision can be made regarding whether patients will require inpatient care. Observation services are commonly ordered for patients who present to the emergency department and who then require a significant period of treatment or monitoring in order to make a decision concerning their admission or discharge. CMS definition referenced.

Exclusion criteria

Outpatient patients are defined as those patients who are neither classified as observation status nor as inpatient status but who receive treatment/diagnosis at the hospital.

III. Data Source(s)

Each hospital will report data using their own collection methods until specific high detection methods are prescribed by the network.

IV. Sampling and Data Collection Plan

N/A

V. Calculation

N/A
VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

N/A

VIII. Experts/Resources


IX. Attachments

N/A

X. Revision History

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<td>Version 1</td>
<td>Karen Zieker</td>
<td>Initial Draft</td>
<td>30-Mar-2012</td>
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OPERATIONAL DEFINITION

MEASUREMENT: Peripheral Intravenous Infiltration and Extravasations (PIVIEs)

I. Description and Rationale

This measure answers the question: How often are patients harmed due to peripheral intravenous infiltrations and extravasations (PIVIEs).

A peripheral IV is a short vascular access device that terminates in a peripheral vein which is used for infusion therapy. In pediatric and neonatal populations, these devices may be inserted in upper or lower extremities.

PIV site refers to the insertion site (i.e., the site the IV catheter enters the skin).

PIV site location refers to the location on the body (e.g. upper or lower limb) of the PIV site. [1]

Exclude the following [1]:

- Vascular access devices that terminate in a great vessel
  - Central venous catheters [refer to the central line-associated bloodstream infection (CLABSI) indicator for a list of great vessels]
  - Umbilical artery/vein catheters
  - Peripherally inserted central catheters (PICC)
  - Midline catheters

- Saline or heparin-locked PIV devices NOT receiving either fluids or medications

- Wounds from devices relating pressure ulcers

Location [2]

<table>
<thead>
<tr>
<th>Right arm</th>
<th>Right leg</th>
<th>Right antecubital (AC space)</th>
<th>Digit on right hand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left arm</td>
<td>Left leg</td>
<td>Left antecubital (AC space)</td>
<td>Digit on left hand</td>
</tr>
<tr>
<td>Right hand</td>
<td>Right foot</td>
<td>Right wrist</td>
<td>Other</td>
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<tr>
<td>Left hand</td>
<td>Left foot</td>
<td>Left wrist</td>
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II. Population Definition

The patient population for this measure is defined per the patient population operational definition. Inpatient and observational stay patients will be included in the measure.

Inclusion criteria

- All patients are included who are defined as inpatient or under observation at the hospital.

Exclusion criteria

- If identified upon initial assessment

III. Data Source(s)

Each hospital will report data using their own collection methods

- Possible collection methods:
IV. Sampling and Data Collection Plan

PIVIE injuries are assigned the month the event is identified.

V. Calculation

The definition of moderate, severe not resulting in serious harm, and severe resulting in serious harm PIVIE injuries is included in appendix A.

**Severe PIVIEs injury resulting in serious harm**

**Numerator:** Number of serious harm PIVIE injuries  
**Denominator:** Total number patient days

\[
\text{Number of Severe PIVIEs injury resulting in serious harm per 1000 patient days} = \left( \frac{\text{Numerator}}{\text{Denominator}} \right) \times 1000
\]

**Severe PIVIEs injury not resulting in serious harm**

**Numerator:** Number of severe PIVIE injuries  
**Denominator:** Total number patient days.

\[
\text{Number of Severe PIVIEs injury not resulting in serious harm per 1000 patient days} = \left( \frac{\text{Numerator}}{\text{Denominator}} \right) \times 1000
\]

**Moderate PIVIEs injury**

**Numerator:** Number of moderate PIVIE injuries  
**Denominator:** Total number patient days.

\[
\text{Number of Moderate PIVIE Injuries per 1000 patient days} = \left( \frac{\text{Numerator}}{\text{Denominator}} \right) \times 1000
\]

**All PIVIEs injury**

**Numerator:** Number of moderate, severe, and serious harm PIVIE injuries  
**Denominator:** Total number patient days.

\[
\text{Number of Moderate, Severe, & Serious Harm PIVIE Injuries per 1000 patient days} = \left( \frac{\text{Numerator}}{\text{Denominator}} \right) \times 1000
\]

VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

N/A

VIII. Experts/Resources

N/A

IX. Attachments

Appendix A
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<td>Version a</td>
<td>Karen Zieker</td>
<td>New HAC definition</td>
<td>Sep 15, 2014</td>
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</table>
| Version b | Co-Leaders | • Denominator will be patient days  
• Clarified injuries definitions in Appendix A | Oct 15, 2014 |
| Version c | Co-Leaders | Changed: IV added clarity that the injury is recorded when the event is identified Appendix A | Oct 20, 2014 |
| Version d | Co-Leaders | Appendix A clarifications | Oct 27, 2014 |
| Version e | Co-Leaders | Appendix A clarifications regarding moderate swelling | Nov 14, 2014 |
| Version f | Co-Leaders | Appendix A clarification that meeting any will trigger of the event  
Section I. added PIV description and locations  
Added ‘References’ section | Dec 01, 2014 |
| Version g | Co-Leaders | Appendix A – changed swelling calculation for severe > 60% and moderate to | Dec 10, 2014 |
| Version h | Co-Leaders, Measurement Team | Section I, exclusions– removed “within the past hour” from the saline/heparin exclusion | Dec 15, 2014 |
| Version i | Co-Leaders | Section I, exclusions: Wounds from devices relating pressure ulcers | Dec 17, 2014 |
| Version j | Co-Leaders | Excluded scalp site location | Jan 8, 2015 |
| Version k | Co-Leaders | Removed "The skin is moist and painful" from Appendix A as an attribute of injury | Mar 10, 2015 |
| Version L | Melissa Whitehead | Added minor clarity to the two limb drawing to measure swelling | May 7, 2015 |
| Version M | Chris Kramer | Added Serious Harm PIVIE as a measured category, removed “discontinued PIVs” | March 22, 2017 |
| Version N | Co-Leaders | Added collection methods and updated injury categories | October 9th, 2017 |
| Version O | Co-Leaders | Removed “Cap refill >8 seconds” from Distal Arterial Compromise symptom | March 2nd, 2018 |
Appendix A

Severe PIVIEs injury resulting in Serious Harm is defined as (meeting any of these trigger the event):
- Fasciotomy
- Skin graft or tissue transfer at any time after extravasation event
- Amputation

Severe PIVIEs injury not resulting in Serious Harm is defined as (meeting any of these trigger the event):
- Distal arterial compromise (No palpable distal pulse, exclude chronic low blood flow conditions) on initial assessment upon insult
- Full thickness skin loss
- Deep partial thickness burns that extend deeply into the second layer of skin and can quickly evolve into a full thickness (or third degree) burn. Symptoms include [3]:
  - Red and white skin that does not blanch readily
  - Bloody blisters are present
- Swelling > 60% as calculated on either diagram

Moderate PIVIEs injury is defined as (meeting any of these trigger the event):
- Superficial partial thickness burns that extend superficially into the second layer of skin. Symptoms include [3]:
  - Red skin that blanches (turns white) when pressure is applied (such as when pressing a finger on the skin)
  - Any number of clear blisters (open or closed) are present
- Diminished pulse in extremity distal to the PIV on initial assessment
- Swelling > 30-60% as calculated on either diagram

Measure

<table>
<thead>
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<th>Calculate</th>
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<tbody>
<tr>
<td></td>
<td>( \left( \frac{X}{Y} \right) \cdot 100 = \square % )</td>
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</table>

Notes:
- Define edges of swelling by palpation/visual observation
  - \( X \) = maximum dimension (length or width) of swelling
  - \( Y \) = tip of longest finger to anterior/inferior skin fold of axilla with arm as straight as possible.
  - Tip of toes to anterior/inferior skin fold of groin with leg and foot as straight as possible.
- For rare patients with limb deletions, malformations or contractures, use an estimated length measurement of the extremity.
References


OPERATIONAL DEFINITION

MEASUREMENT: Pressure Injury (PI)

I. Description and Rationale

This measure answers the question: How often is a patient harmed due to pressure injury?

The National Pressure Ulcer Advisory Panel (NPUAP) will serve as the guide for the defining and staging of pressure injury. The Solutions for Patient Safety (SPS) operational definition (this document) will serve as the official guide for the reporting of all hospital acquired pressure injuries detected during hospitalization.

II. Population Definition

The patient population for this measure is defined per the patient population operational definition. Inpatient and observational stay patients will be included in the measure.

Inclusion criteria
All patients are included who are defined as inpatient or under observation at the hospital.

Exclusion criteria
Any patient who has a PI documented upon admission to the hospital, would be excluded because this would be considered a non-facility acquired PI (unless the PI progresses to a stage 3, 4, or unstageable during their hospital stay).

III. Data Source(s)

Each hospital will report data using their own collection methods until specific high detection methods are prescribed by the network.

IV. Sampling and Data Collection Plan

Pressure injuries are assigned the month the event occurred. One pressure injury is only recorded once at the “highest” stage.

V. Calculation

A pressure injury is localized damage to the skin and/or underlying soft tissue usually over a bony prominence or related to a medical or other device. The injury can present as intact skin or an open ulcer and may be painful. The injury occurs as a result of intense and/or prolonged pressure or pressure in combination with shear. The tolerance of soft tissue for pressure and shear may also be affected by microclimate, nutrition, perfusion, comorbidities and condition of the soft tissue.

Pressure Injury Stages
Mucosal Membrane Pressure Injury: Mucosal membrane pressure injury is found on mucous membranes with a history of a medical device in use at the location of the injury. Due to the anatomy of the tissue these injuries cannot be staged.

Medical Device Related Pressure Injury: This describes and etiology of the injury. Use the staging system to stage. Medical device related pressure injuries result from the use of devices designed and applied for diagnostic other therapeutic purposes. The resultant pressure injury generally conforms to the pattern or shape of the device. The injury should be staged using the staging system.

Stage 2: Partial thickness loss of skin with exposed dermis. The wound bed is viable, pink or red, moist and my also present as an intact or ruptured serum-filled blister. Adipose (fat) is not visible and deeper tissues are not visible. Granulation tissue, slough and eschar are not present. These injuries commonly result from adverse microclimate and shear in the skin over the pelvis and shear in the heel. This stage should not be used to describe moisture associated skin damage (MASD) including incontinence associated dermatitis (IAD), medical adhesive related skin injury (MARSI), or traumatic wounds (skin tears, burns, abrasions).

Stage 3: Full thickness loss of skin, in which adipose (fat) is visible in the ulcer and granulation tissue and epiboly (rolled wound edges) are often present. Slough and/or eschar may be visible. The depth of tissue damage varies by anatomical location; areas of significant adiposity can develop deep wounds. Undermining and tunneling may occur. Fascia, muscle, tendon, ligament, cartilage and/or bone are not exposed. If slough or eschar obscures the extent of tissue loss this is an Unstageable Pressure Injury.

Stage 4: Full thickness skin and tissue loss with exposed or directly palpable fascia, muscle, tendon, ligament, cartilage or bone in the ulcer. Slough and/or eschar may be visible. Epiboly (rolled edges), undermining and/or tunneling often occur. Depth varies by anatomical location. If slough or eschar obscures the extent of tissue loss this is an Unstageable Pressure Injury.

Deep Tissue Pressure Injury: Intact or non-intact skin with localized area of persistent non-blanchable deep red, maroon, purple discoloration or epidermal separation revealing a dark wound bed or blood filled blister. Pain and temperature change often precede skin color changes. Discoloration may appear differently in darkly pigmented skin. This injury results from intense and/or prolonged pressure and shear forced at the bone-muscle interface. The wound may evolve rapidly to reveal the actual extent of tissue injury, or may resolve without tissue loss. If necrotic tissues, subcutaneous tissue, granulation tissue, fascia, muscle or other underlying structures are visible, this indicates a full thickness pressure injury (Unstageable, Stage 3 or Stage 4). Do not use DTPI to describe vascular, traumatic, neuropathic, or dermatologic conditions.

Unstageable: Full thickness skin and tissue loss in which the extent of tissue damage within the ulcer cannot be confirmed because it is obscured by slough or eschar. If slough or eschar is removed, a Stage 3 or Stage 4 pressure injury will be revealed. Stable eschar (i.e. Dry, adherent, intact without erythema or fluctuance) on an ischemic limb or heel(s) should not be removed.

All Harm Numerator: Number of Mucosal, Stage 2, 3, 4, deep tissue pressure injuries (DTPI), and unstageable pressure injuries as defined below.
All Harm Excludes Stage I pressure injury: Intact skin with a localized area of non-blanchable erythema, which may appear differently in darkly pigmented skin. Presence of blanchable erythema or change in sensation, temperature or firmness may precede visual changes. Color changes do not include purple or maroon discoloration; these may indicate deep tissue pressure injury.

**Serious Harm Numerator:** Number of Stage 3, 4, and unstageable pressure injuries as defined below.

*Note: effective January 2015, Suspected Deep Tissue Injuries will no longer be reported as a serious harm measure. Suspected deep tissue injuries will still be reported to SPS each month and included in the All Harm measure. Injuries detected and determined to be suspected deep tissue injuries should be monitored every 2 to 3 days for the first week following discovery, then weekly until injury fades or the patient is discharged. If these injuries progress and develop into Stage III, Stage IV or Unstageable pressure injuries then the progression of this injury should be reported to SPS.*

Serious Harm Excludes: Stage 1, 2, Mucosal Injuries, and DTPI.

*When counting PI's (Pressure Injuries):*

**For Immobility:**
Separate pressure injuries, due to immobility, that are detected on the same location of the body within 24 hours are counted as a single pressure injury of the highest stage, even if they are not contiguous.

**Example 1:** Patient with a stage 2 PI on the sacrum and stage 3 PI on coccyx (detected at the same time or within 24 hours) would be one injury, and should be captured at the highest stage, which would be a stage 3.

**Example 2:** Patient with a stage 2 PI on heel, and stage 3 PI on coccyx (detected at the same time) would be counted as 2 separate PI's.

**For Device Related PI's (Pressure Injuries):**
If multiple PI's are caused by a single device and are detected within 24 hours of each other, they are counted as a single pressure injury of the highest stage.

**Example 1:** Patient with two PI’s identified within 12 hours of each other (one stage 3 PI on the chin and one stage 4 PI on the back of the neck – both caused by a C-Collar); This would count as one PI at the highest stage, which would be a stage 4.

**Example 2:** Patient with a stage 3 PI identified on the right side of the neck caused by trach ties, and 48 hours later, a stage 3 PI is identified on the back of the neck and caused by trach ties. This would count as two separate stage 3 PI's.

**Example 3:** Patient with two PI's identified simultaneously (one stage 3 PI identified on the right hand and one stage 3 PI identified on the left forearm – both caused by the hub of PIV's); This would count as two separate stage 3 PI's.

**Example 4:** Patient with a stage 3 PI identified on the bridge of the nose, caused by CPAP mask, and 8 hours later, a stage 2 PI is identified on the chin, also caused by CPAP mask; This would count as one PI at the highest stage, which would be a stage 3.

**Example 5:** Patient with SCD’s on bilateral legs (one stage 3 PI identified on right knee, and one stage 3 PI identified simultaneously on right ankle); This would count as one PI at the highest stage, which would be a stage 3.

**Example 6:** Patient with SCD’s on bilateral legs (one stage 2 PI identified on left knee, and 12 hours later, one stage 2 PI is identified on right knee); This would count as two separate stage 2 PI's.

**Denominator for both All Harm and Serious Harm:** Total number patient days.
Serious Harm Calculation:

Number pressure injuries (stages 3-4, unstageable) per number patient days per 1000 patients

Rate = (Numerator/Denominator) * 1000

VI. Data Quality Audit Procedures

Each hospital will report data using active surveillance definition as defined in Section IX.

VII. Notes

N/A

VIII. Experts/Resources

https://www.nursingquality.org/

IX. Active Surveillance Definition

The network recommends active surveillance as the method of detection for pressure injuries. Active surveillance is defined as head to toe assessment of all patients on a given unit for the presence of pressure injury. The network recommends this assessment be conducted weekly, but at a minimum monthly. Detection rounds should be completed by a team made up of front-line nursing staff, Wound and Ostomy nurses and an identified nurse champion from the unit where detection rounds are taking place.

Description and Rationale

This measure answers the question(s): What is the trend over time of percent of hospitals conduct active surveillance for pressure injury? Which hospitals are following the active surveillance definition?

Population Definition

The population for this measure is defined hospitals that are members of the SPS Network.

Data Source(s)

Each hospital PI HAC Leader will review the active surveillance questions, and report status on active surveillance to their SPS data manager utilizing the definition below. The data manager will enter status on the SPS Web forms when changes occur.

Sampling and Data Collection Plan – Active Surveillance

Hospitals will answer a series of questions on the SPS PI Web form to determine active surveillance status. If they have no change in status, they can leave the previous months answers.
Active Surveillance Questions:

The Active Surveillance fields on the Pressure Injuries web form should be filled out with the initial information for your active surveillance program and only edited if something changes. These fields do not have to be filled out monthly.

Q1. How often does your hospital conduct active surveillance in Non-ICU units? (Select the least frequent occurrence in your hospital’s non-ICU units. For example, if you do daily in Med/Surgery and monthly in HEM/ONC, select monthly.)

This question is answered by picking a value from a drop box.

The values available are: Daily, Weekly, Monthly, Quarterly, Other, N/A.

Q2. Enter the approximate date active surveillance was implemented in all non-ICU units.

Q3. How often does your hospital conduct active surveillance for ALL intensive care units? (Select the least frequent occurrence in your hospital ICU units. For example, if you do daily in PICU and monthly in CICU, select monthly.)

Q4. Enter the approximate date active surveillance was implemented in all ICU units.

Q5. Does the surveillance include EVERY patient on the units (not just high risk) from head to toe?

Q6. Who is included in the active surveillance team? (Select all that apply.)

- Wound Ostomy Nurse
- Bedside Nurse
- Nursing Champion for your units
- Other
Q2. Enter the approximate date active surveillance was implemented in all non-ICU units.
   • This question is answered by entering the date your hospital FIRST implemented your active surveillance program in your non-ICU units.
   • This is not the date that active surveillance was performed for the month.

Q3. How often does your hospital conduct active surveillance for ALL intensive care units? (Select the least frequent occurrence in your hospital ICU units. For example, if you do daily in PICU and monthly in CICU, select Monthly.)
   • This question is answered by picking a value from a drop box.
   • The values available are: Daily, Weekly, Monthly, Quarterly, Other, N/A.

Q4. Enter the approximate date active surveillance was implemented in all ICU units.
   • This question is answered by entering the date your hospital FIRST implemented your active surveillance program in your ICU units.
   • This is not the date that active surveillance was performed for the month.

Q5. Does the surveillance include examining EVERY patient on the units (not just high risk) from head to toe?
   • This question is answered by selecting Yes or No from the dropdown box.

Q6. Who is included in the active surveillance team? (Select all that apply)
   • This question is answered by selecting the check box that describes each team member’s position.
   • The options for selection are: Wound Ostomy Nurse, Bedside Nurse, and Nursing Champion for your unit, and Other.
   • You can select as many as needed.

Calculations

Active Surveillance Hospitals = those that conduct at LEAST monthly active surveillance for ALL units, on EVERY patient, head to toe with a team that includes at least Wound Ostomy Nurse, Bedside Nurse, and Nursing Champion.

Percent of Active Surveillance Hospitals = Number of Active Surveillance Hospitals (defined above) / Total SPS Network Hospitals

Trend of Percent of Hospitals = Number of Active Surveillance Hospitals (defined above) / Total SPS Network Hospitals for each month.
### X. Revision History

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<td>Clarified DTI definition, and the Network Goal/All Harm</td>
<td>30-Oct-2012</td>
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<td>2</td>
<td>Sharyl Wooton</td>
<td>Added mucosal pressure ulcer &quot;stage&quot;</td>
<td>20-May-2013</td>
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<td>3</td>
<td>Sharyl Wooton</td>
<td>Updated to include standard definition for detection – Section IX – Active Surveillance</td>
<td>17-Nov-2014</td>
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<td>4</td>
<td>Sharyl Wooton</td>
<td>Updated the definition of serious harm with removal of DTIs – effective Jan ’15</td>
<td>19–Jan-2015</td>
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<td>5</td>
<td>Trish Burdett, Matt Short</td>
<td>Updated definition to stay aligned with NPUAP guidelines released in April 2016. Changing name from Pressure Ulcer to Pressure Injury.</td>
<td>21 – Jun-2016</td>
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<td>6</td>
<td>Laurie Mustin</td>
<td>Added exclusion criteria and added additional information to provide more clarity under the section of serious harm numerator</td>
<td>17 – April-2017</td>
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OPERATIONAL DEFINITION

MEASUREMENT: Readmissions

I. Description and Rationale

This measure answers the question: How often do patients get readmitted?

II. Population Definition

The patient population for this measure is defined per the patient population operational definition. Inpatient and observational stay patients will be included in the measure.

Inclusion criteria
All patients are included who are defined as inpatient or under observation at the hospital.

III. Data Source(s)

Each hospital will report data using their own collection methods until specific high detection methods are prescribed by the network.

IV. Sampling and Data Collection Plan

Readmissions are assigned the month the discharge occurred.

V. Calculations

7 Day Readmissions (National Network Goal)

Numerator: Number of readmissions that occur within 7 days of discharge (<=7)

Patients are excluded from the numerator count if they are readmitted for planned scheduled procedures such as patients discharged and readmitted in the psychiatric and rehabilitative units for planned scheduled procedures or for planned and scheduled chemotherapy.

Denominator: Total number of discharged patients during time period

Number of readmissions per 100 discharged patients
(Numerator/Denominator) X 100
30 Day Readmissions

**Numerator:** Number of readmissions that occur within 30 days of discharge (<=30)

The 30 day count does include the 7 day as well.

Patients are excluded from the numerator count if they are readmitted for planned scheduled procedures such as patients discharged and readmitted in the psychiatric and rehabilitative units for planned scheduled procedures or for planned and scheduled chemotherapy.

**Denominator:** Total number of discharged patients during time period

Number of readmissions per 100 discharged patients
(Numerator/Denominator) x 100

VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

N/A

VIII. Experts/Resources

N/A

IX. Attachments

N/A

X. Revision History

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<td>Sharyl Wooton</td>
<td>Addition of 30 day calculation</td>
<td>02-July-2012</td>
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<td>Clarification of exclusion of planned scheduled procedures</td>
<td>06-Nov-2012</td>
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I. Description and Rationale

This measure answers the question: How many serious harm events occur across the SPS National Network each month?

Serious Harm Events have been defined to include the following Hospital Acquired Conditions (HACs):

- Surgical Site Infections*
- Ventilator Associated Pneumonia
- Central Line Blood Stream Infections
- Catheter Associated Urinary Tract Infections
- Pressure Ulcers – Stage 3, Stage 4, and Unstageable
- Falls with moderate injury and above
- Adverse Drug Events – Level 6-9 (Level F-I)
- Obstetrical Adverse Events
- Venous Thromboembolism Events

* Surgical Site Infections for serious harm will include only those infections that occurred in the following surgical specialties: Orthopedic spinal fusion surgeries, Cardiothoracic surgeries (open and closed procedures), and Neurosurgical ventricular shunt placements.

II. Population Definition

The patient population for this measure is defined per the patient population operational definition. Inpatient and observational stay patients will be included in the measure.

Inclusion criteria

All patients of the SPS National Network Hospitals as defined in the patient population operational definition.

III. Data Source(s)

Each hospital will report data using their own collection methods until specific high detection methods are prescribed by the network.

IV. Sampling and Data Collection Plan

Each of the SPS National Network hospitals will submit data on the serious harm domains via a web form reporting tool.

V. Calculation

This measure is a simple sum of all counts of serious harm events across all SPS National Network hospitals who have submitted data.
VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

VIII. Experts/Resources

IX. Attachments

N/A

X. Revision History

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<td>Karen Zieker</td>
<td>Final draft</td>
<td>4-Dec-2012</td>
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<tr>
<td>Version 3</td>
<td>Karen Zieker</td>
<td>Removed PU-Deep Tissue Injuries SHE charts were reset – removing PU-DTI from 1/2011 onward. Included SSI – open and closed cardiac procedures – previously only closed cardiac procedures considered</td>
<td>17-Mar-2015</td>
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OPERATIONAL DEFINITION

MEASUREMENT: Serious Safety Events (SSER)

I. Description and Rationale

This measure answers the question: How often is a patient seriously harmed?

The classification of serious safety events is included in Appendix A.

II. Population Definition

The patient population for this measure is defined per the patient population operational definition. Inpatient, outpatient, surgical, short stay and observational stay patients will be included in the measure.

Inclusion criteria
All patients are included who are defined as outpatient, surgical, short stay and observational stay patients at the hospital.

III. Data Source(s)

Each hospital will report data using their own collection methods until specific high detection methods are prescribed by the network.

IV. Sampling and Data Collection Plan

Serious Safety Events are assigned the month the event occurred.

V. Calculation

Numerator: Number of serious safety events that occurred per the classification guidelines in Appendix A or Appendix B. A hospital can choose to categorize their SSEs using either table classification guidelines, but should consistently use the same classification for reporting. A hospital may decide to change their classification but should then consistently report to the new classification guidelines and annotate their chart as appropriate.

Numerator will be reported as Level 1 – Level 5 or as Level 1 – Level 4

Denominator: Adjusted Patient Days (APD) – Adjusted patient days is a calculation that takes the total inpatient days and adds a proportion of outpatient, surgical, ER, and short stay admits. The proportion of outpatient, surgical, ER and short stay admits is determined by allocating a ratio of patient days based on the proportion of billing contribution these departments contribute to the total contribution of billing for institution. An example is provided in Appendix C.

The SSER is a 12 month rolling average rate.
Number of events in past 12 months per number of adjusted patient days per 10000 patients.  \[(\text{Numerator} / \text{Denominator}) \times 10000\]
VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

N/A

VIII. Experts/Resources

N/A

IX. Attachments

N/A

X. Revision History

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<td>Karen Zieker</td>
<td>Second draft</td>
<td>17-Jul-2013</td>
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### Appendix A

**HPI Safety Event Classification Levels of Harm**

Guidelines - Operational Definition

One Page Summary

<table>
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<th>Code</th>
<th>Level of Harm</th>
<th>Description – per HPI</th>
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<td>SSE 1</td>
<td>Death</td>
<td>A deviation in GAPS resulting in death.</td>
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<tr>
<td>SSE 2</td>
<td>Severe Permanent Harm</td>
<td>A deviation in GAPS resulting in critical, life-changing harm with no expected change in clinical status; includes events resulting in permanent loss of organ, limb, or vital physiologic or neurologic function.</td>
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<tr>
<td>SSE 3</td>
<td>Moderate Permanent Harm</td>
<td>A deviation in GAPS resulting in significant harm with no expected change in clinical condition yet not sufficiently severe to impact activities of daily living or business functioning; includes events that result in permanent reduction in physiologic reserve, disfigurement, and impaired or aided sense or function.</td>
</tr>
<tr>
<td>SSE 4</td>
<td>Severe Temporary Harm</td>
<td>A deviation in GAPS resulting in critical, potentially life-threatening harm yet lasting for a limited time with no permanent residual; requires prolonged transfer to a higher level of care/monitoring, transfer to a higher level of care for a life-threatening condition, or an additional major surgery, procedure or treatment to resolve the condition.</td>
</tr>
<tr>
<td>SSE 5</td>
<td>Moderate Temporary Harm</td>
<td>A deviation in GAPS resulting in significant harm lasting for a limited time; requires a higher level of care/monitoring or an additional minor procedure or treatment to resolve the condition.</td>
</tr>
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**Reference:**

*The HPI SEC & SSER Patient Safety Measurement System for Healthcare*

Published by Healthcare Performance Improvement, LLC  (c) 2009

**HPI Safety Event Classification (SEC) Levels of Harm**

Appendix D – Page 1
# Appendix B

## Ohio (OCHSPS) Serious Safety Event Harm Classification

*Guidelines - Operational Definition*

*Final- January 2012*

<table>
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<th>Code</th>
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<th>Description – per OCHSPS</th>
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<tr>
<td>SSE 1</td>
<td>Death</td>
<td>A variation from expected practice followed by death (includes suicide)</td>
</tr>
<tr>
<td>SSE 2</td>
<td>Severe Permanent Harm</td>
<td>A variation from expected practice followed by critical, life-changing harm with no expected improvement in clinical status; includes events resulting in permanent loss of organ, limb, or vital physiologic or neurologic function that impacts developmentally appropriate activities of daily living, severe facial disfigurement. Examples of Harm: - removal of healthy limb - permanent physical impairment - Anoxic brain injury resulting in permanent brain damage - need for permanent dialysis - full-thickness burns to face, and persistent facial disfigurement</td>
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<tr>
<td>SSE 3</td>
<td>Moderate Permanent Harm</td>
<td>A variation from expected practice followed by significant harm with no expected improvement in clinical condition yet not sufficiently severe to impact developmentally appropriate activities of daily living or business functioning; includes events that result in permanent reduction in physiologic reserve, acquisition of a significant chronic disease, disfigurement, psychological trauma/dysfunction, and impaired or aided sense or function. Examples of Harm: - reduced renal function - fasciotomy resulting in minimal loss of function but disfiguring scars (non-facial) - loss of an entire finger, other than the thumb or 2nd finger which may qualify the event as SSE 2 - Hepatitis C infection resulting in decreased liver function - damage to growth plate resulting in patient left with a shortened leg and limp</td>
</tr>
<tr>
<td>SSE 4</td>
<td>Significant Temporary Harm</td>
<td>A variation from expected practice followed by critical, potentially life-threatening harm lasting for a limited time with no permanent residual; requires significant and intensive medical intervention (likely but not necessarily provided in the ICU setting) or an additional major surgery, procedure, or treatment to resolve the condition; severe unrecognized pain, not treated in a timely manner, requiring significant intensive intervention. Examples of Harm: - respiratory or cardiac failure/arrest should strongly be considered as an SSE 4 - surgical repair and/or intervention that impacts developmentally appropriate activities of daily living for greater than one week – 7 days (e.g., placed in cast) - Retained object that requires return to the operating room - temporary paralysis or other loss of function affecting developmentally appropriate activities of daily living for &gt;= one week - kidney failure requiring temporary dialysis - requiring a trip to the operating room for extensive surgical incision and drainage - victim of physical assault following elopement</td>
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Appendix C:

Example Adjusted Patient Days Calculation:

\[
\text{Adjusted Patient Days (APD) = Total Patient Days} + \frac{\text{Total OP & ER Visits}}{\text{Avg Billing Per Day} \times \text{Avg Billing Per OP Visit}} + \frac{\text{Short Stay Admits}}{\text{Avg Billing Per Day} \div \text{Avg Billing Per Short Stay}}
\]
OPERATIONAL DEFINITION

MEASUREMENT: Surgical Site Infections (SSIs)

I. Description and Rationale

This measure answers the question: How often is a patient harmed due to surgical site infection following selected surgeries?

The current version of the National Healthcare Safety Network (NHSN) Manual: Patient Safety Component Protocol will serve as the official reference guide for definitions and criteria for reporting surgical site infections.


Rationale for focus on selected surgeries: In pediatrics, SSI rates tend to be highest among spinal fusion, neurosurgical shunt, and cardiothoracic surgeries.

IIa. Population Definition

The patient population for this measure includes all patients undergoing the included procedures, including inpatient and observational stay patients.

Three surgery categories are considered for this measurement:

- Spinal fusion surgeries as defined by NHSN (FUSN).
  - Procedures such as growing construct placements and adjustments should be included if a facility routinely uses CPT or ICD-10 codes included in the FUSN category for such procedures.
- Neurosurgical shunt surgeries as defined by NHSN (VSHN)
  - Procedures such as third ventriculostomy and external ventricular drain placement are included even though technical these are not shunt procedures.
  - The CPT code 44055 (correction of malrotation) should be used only if the procedure involves a ventricular shunt.
- Cardiothoracic surgeries as defined by NHSN (CARD)

ICD-10 and CPT codes for each of the above categories are available on the NHSN website in the Supporting Materials section (http://www.cdc.gov/nhsn/acute-care-hospital/ssi/) and SPS sharepoint site ()

Inclusion criteria

All patients who experience one of the above surgical procedures.

Exclusion criteria

Patients with physician/advanced practice nurse/physician assistant documentation of an active infection at the time of the surgical procedure.

- Signs/symptoms of infection can include but not be limited to: fever, redness/tenderness, elevated white blood cell count, positive culture.

IIb. Surgical Site Infection Definitions:
• **Superficial Incisional SSI**
  Infection occurs within 30 days after the operative procedure AND involves only skin and subcutaneous tissue of the incision AND patient has at least one of the following:
  a. purulent drainage from the superficial incision.
  b. organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision.
  c. superficial incision that is deliberately opened by a surgeon, attending physician or other designee and is culture positive or not cultured and 
    at least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat. A culture-negative finding does not meet this criterion.
  d. diagnosis of superficial incisional SSI by the surgeon or attending physician or other designee.

• **Deep Incisional SSI**
  Infection occurs within 90 days AND involves deep soft tissues (e.g., fascial and muscle layers) of the incision AND patient has at least one of the following:
  a. purulent drainage from the deep incision.
  b. a deep incision spontaneously dehisces or is deliberately opened by a surgeon, attending physician, or other designee and is culture-positive or not cultured and 
    the patient has at least one of the following signs or symptoms: fever (>38°C); localized pain or tenderness. A culture-negative finding does not meet this criterion.
  c. an abscess or other evidence of infection involving the deep incision is found on direct examination, during invasive procedure, or by histopathological examination or imaging test.

• **Organ/Space SSI**
  Infection occurs within 90 days after the operative procedure AND infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure AND patient has at least one of the following:
  a. Purulent drainage from a drain that is placed in the organ/space
  b. Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space
  c. An abscess or other evidence of infection involving the organ/space that is found on direct examination, during invasive procedure, or by histopathologic examination or imaging test and
  Meets at least one criterion for a specific organ/space infection site (see [http://www.cdc.gov/nhsn/PDFs/pscManual/17pscNosInfDef_current.pdf](http://www.cdc.gov/nhsn/PDFs/pscManual/17pscNosInfDef_current.pdf))

III. Data Source(s)
Each hospital will report data using its own collection methods based on the ICD-10 procedure or CPT codes listed by NHSN or other methods that reliably collect the cases included in the NHSN categories.

IV. Sampling and Data Collection Plan

SSI rate is reported separately for each of the following surgical procedure categories: Spinal fusions, neurosurgical shunt surgeries, and cardiothoracic procedures.

SSIs are assigned to the month when the attributable surgical procedure(s) was performed.

Due to challenges communicating information across hospitals, should the attributable procedure be performed at a hospital other than the hospital where the SSI was identified, the following guidelines apply:

- Hospital performing attributable procedure: add procedure to the denominator, even if unable to add the related SSI to the numerator (due to lack of awareness that the SSI has occurred); add SSI to the numerator if aware that the SSI has been identified by another hospital.
- Hospital identifying the SSI: exclude SSI from the numerator since the attributable procedure was performed at a different hospital. (Note: hospital identifying the SSI should contact the infection control department of the hospital that performed the attributable procedure to report the identified SSI; cross-hospital communication of patient information should comply with legal, legislative, and regulatory requirements.)

V. Calculation

For each of the 3 categories under surveillance (spinal fusion, neurosurgical shunt, and cardiothoracic procedures) the following numbers should be prospectively tracked and reported each month:

Numerator: Number of SSIs related to designated surgical procedures.

Denominator: Number of designated surgical procedures during the applicable reporting period.

\[(\text{Numerator/Denominator}) \times 100\]

(Note: reported as SSIs per 100 procedures.)

VI. Data Quality Audit Procedures

Hospitals should develop internal procedures for auditing data quality.
VII. Notes

As the minimum required scope of surveillance is limited to hospital-based encounters (e.g. inpatient, ED/urgent care, hospital-based outpatient clinics), there is a possibility of missing SSIs identified in community-based settings.

Data is not adjusted for differences in case mix, volumes, or patient severity across reporting hospitals. NHSN SSI risk-adjustment methodologies will not be utilized. The NHSN algorithm based on operation duration, wound class, and ASA classification has not been validated for pediatric populations. As pediatric-specific SSI prevalence rates for the designated surgical procedures are not available from evidence-based literature, the alternative NHSN methodology based on “observed vs. expected” cannot be applied.

VIII. Experts/Resources

www.cdc.gov/nhsn


X. Revision History

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<td>V1</td>
<td>Jason Olivea</td>
<td>Change in Surgical Site Definitions</td>
<td>Summer 2012</td>
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<td>Changed length of time from day of surgery to infection from one year to 90 days in order to align with NHSN definition changes in 1/2013.</td>
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<td>Karen Zieker</td>
<td>Changed length of time from 1 year to 90 days in order to align with NHSN definition changes in 1/2013. The original correction was missed for CSF shunt infections in the text.</td>
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<td>V4</td>
<td>Sharyl Wooton</td>
<td>Removed surgery population exclusion which said “chest must be fully closed in the OR during the index procedure. Cases in which there is delayed closure of the chest will be excluded.” to align with NHSN definition changes. Updated language and definitions to match NHSN 2014 definitions.</td>
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<td>V5</td>
<td>Josh Schaffzin</td>
<td>Removed subclassification of neurosurgical shunt procedures and of open vs closed cardiothoracic procedures. Changed/added language to fit ICD-10 and CPT codes.</td>
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Frequently Asked Questions

**Should refusion procedures be included?**

Yes. Previously, ICD-9 codes could differentiate between the two, and there were two NHSN categories for reporting (FUSN and REFUSN). ICD-10 codes cannot distinguish between the two, so NHSN has combined the two categories into one (FUSN).

**Should EVD placement following shunt removal be included?**

Maybe. If the removal and EVD placement is for infection, no. If the removal and EVD placement is for another indication (eg hemorrhage), yes. Since these procedures occur during the same trip to the operating room, they should be counted once.

**Why are we no longer separating out shunt or cardiothoracic data?**

SPS SSI leadership decided to consolidate reporting once it became clear that separating the data was not contributing to our improvement efforts. Additionally, we wanted to remove any undue burdens on facilities and align with other national reporting avenues.

**Why are common pediatric surgeries at high risk of SSI not included in our reporting (eg, Norwood procedure for congenital heart defect)?**

In order to evaluate the network as a whole and for facilities to compare their local rates with the network, there needs to be a standard definition for included and excluded procedures. Currently, SPS is aligning its reporting with NHSN category CARD, similar to other reporting avenues. We continue to explore opportunities to modify definitions to address pediatric-specific procedures.
OPERATIONAL DEFINITION
MEASUREMENT: UNPLANNED EXTUBATIONS (UE)

I. Description and Rationale

This measure answers the question how often is a patient harmed due to unplanned extubation which is defined as:

An unplanned extubation is any dislodgement of an endotracheal tube from the trachea that is not intentional.

II. Population Definition

The patient population includes all patients who have an endotracheal tube.

Inclusion criteria
Any patient with an endotracheal tube, including emergency department, operative/procedural suites, radiology and inpatient units.

Exclusion criteria
Patients with tracheostomy tubes; patients with events occurring outside the hospital during transport.

III. Data Source(s)

Each hospital will report data using their own collection methods until specific detection methods are prescribed by the network. Redundant identification and reporting methods, are strongly recommended (e.g. EMR, incident reporting, RT reporting).

IV. Sampling and Data Collection Plan

Unplanned extubation injury events are assigned the month the event occurred and is attributed to the physical location of care.

V. Calculation

NUMERATOR:

By Unit: NICU UE, PICU UE, CICU UE, Other UE (numerator only)

By Severity: Unplanned with no reintubation within one hour, Unplanned with reintubation within one hour, Unplanned with reintubation and cardiovascular collapse requiring CPR and/or bolus epinephrine within one hour. Record an event only once using the most severe category.

Exclusions: Mechanical failure related to endotracheal tube; endotracheal tube obstruction; tracheostomy decannulations
DENOMINATOR:

Total number of ventilator days overall and per unit. Excludes tracheostomy days.

EQUATIONS:

\[
\text{NICU UE Rate per 100 vent days} = \frac{\# \text{ NICU UEs}}{\text{NICU vent days}} \times 100
\]

\[
\text{PICU UE Rate per 100 vent days} = \frac{\# \text{ PICU UEs}}{\text{PICU vent days}} \times 100
\]

\[
\text{CICU UE Rate per 100 vent days} = \frac{\# \text{ CICU UEs}}{\text{CICU vent days}} \times 100
\]

\[
\text{Hospital UE Rate per 100 vent days} = \frac{\sum(\# \text{ ICU UEs}) + \# \text{ Other UEs}}{\sum(\text{ICU vent days})} \times 100
\]

VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes

N/A

VIII. Experts/Resources

N/A

IX. Attachments

N/A

X. Revision History

<table>
<thead>
<tr>
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<th>Description of Version</th>
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<tr>
<td>Version b</td>
<td>D. Klugman, N. Maynord, K Melton</td>
<td>Severity clarification from Measurement Team Feedback; added a hospital rate as the sum of ICUs</td>
<td>Nov. 20, 2015</td>
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<td>Version c</td>
<td>D. Klugman, N. Maynord, K Melton</td>
<td>Removed &quot;not assisted by a healthcare provider&quot; from the definition</td>
<td>Dec 15, 2015</td>
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<td>Version d</td>
<td>D. Klugman, N. Maynord, K Melton; input from Measurement Team</td>
<td>Removed section II, Inclusion criteria: under pediatric care – to ensure all patients; Severity: clarified that unplanned with no reintubation occurs within one hour; The severity is tabulated by the most severe category; added the formal equations</td>
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### Contributing Attendees

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<tr>
<th>First Name</th>
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<td>Vanderbilt</td>
<td>RT</td>
<td>Critical care</td>
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<td>Critical care</td>
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<td>Darren</td>
<td>Klugman</td>
<td>Children’s National Health System</td>
<td>MD</td>
<td>Intensivist</td>
</tr>
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<td>Anthony</td>
<td>Lee</td>
<td>Nationwide Children’s Hospital</td>
<td>MD</td>
<td>Intensivist</td>
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<td>Monroe Carell Jr Children’s Hospital at Vanderbilt</td>
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<td>Intensivist</td>
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<td>Neonatologist</td>
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<td>Vicki</td>
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<td>Mary</td>
<td>Nock</td>
<td>Rainbow Babies and Children’s Hospital</td>
<td>MD</td>
<td>Neonatologist</td>
</tr>
<tr>
<td>Sheri</td>
<td>Rosato</td>
<td>Children’s Hospital of Pittsburgh of UPMC</td>
<td>RN</td>
<td>Neonatologist</td>
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</table>
OPERATIONAL DEFINITION

MEASUREMENT: Venous Thromboembolism (VTE)

I. Definition

VTE is a condition in which a blood clot forms within a deep vein and may compromise blood flow or embolize to the lungs (pulmonary embolism). In the specific case of pulmonary embolism, obstructed pulmonary arteries can result in life-threatening decreased oxygenation of the blood.

II. Description and Rationale

This measure answers the question: How many patients are harmed due to hospital-acquired VTE events?

III. Population Definition

Inpatient and observational stay patients of any age will be included in the measure.

Inclusion criteria

a. All acute VTE events deemed to be hospital-acquired including:
   1. Any clot within a deep vein (see section X. Attachments)
   2. Pulmonary embolism (PE)
   3. Any intra-cardiac clot (all 4 chambers of the heart)
   4. Any clot within the cerebral sinus veins
   5. Clots related to fistula, graft, and other prosthetic materials
b. Any VTE event (meeting the above criteria) that occurs within one week of hospital discharge.
c. Multiple clots in any anatomic location identified within 3 days of each other should be considered as a single VTE event.

Exclusion criteria

a. VTEs that developed prior to hospital admission, based on clinical history and exam, and are identified within 48 hours of admission (i.e., community-acquired rather than hospital-acquired.)
   An exception to a. above is a VTE associated with the placement of a new central venous catheter (CVC) during the admission. These should be counted regardless of the time of VTE diagnosis.
b. Fibrin sheath, or a thrombus limited to the catheter only, with no vascular component
c. Venous narrowing, stenosis, or scarring
d. Post-thrombotic syndrome
e. Chronic clot: either previously identified or based upon clinical judgement it is determined to be clot that developed prior to the current admission by taking into account the patient’s clinical history, imaging characteristics and symptoms.
f. Extension of an acute VTE already reported for the current hospitalization
g. Arterial and superficial vein thrombosis (see section X. Attachments)
   Note: if a patient has both a deep vein and an arterial thrombi or a deep vein and a superficial vein thrombi, the deep vein thrombosis should be counted.
h. Clots originating within externalized, mechanical cardiopulmonary circulation.
   (Examples: ECMO, Cardiopulmonary Bypass, LVAD circuit)
IV. Data Source(s)

A VTE diagnostic validation process is expected to include two or more of the following methods to identify potential VTE events:

* Review of radiology reports, discharge ICD-10 codes, problem list, hematology/oncology consults, new anticoagulation order review, self-reporting, other, etc.

Then, review each chart for presence of a VTE event. Radiologic confirmation or direct surgical visualization of the VTE event is required.

V. Sampling and Data Collection Plan

VTE events are assigned to the month the event was diagnosed.

VI. Calculation

**Numerator(s):**

a. Number of central venous catheter (CVC) related VTEs (all ages)
b. Number of NON-CVC VTE events in children (≥ 12 years of age)
c. All VTEs (CVC all ages + NON-CVC <12 y.o. + NON-CVC ≥ 12 y.o.)

**Denominator:**

a. CLABSI definition of line days
b. and c. Number of patient days

**Formulas:**

a. \( CVC \text{ VTE Rate per 1,000 CVC days} = \frac{No. \text{ of CVC related VTE}}{Number \text{ of CVC days}} \times 1,000 \)

b. \( NON - CVC \geq 12 \text{ y.o. VTE Rate per 1,000 patient days} = \frac{No. \text{ of Non CVC}\geq 12 \text{ y.o.}}{Number \text{ of patient days}} \times 1,000 \)

c. \( Total \text{ VTE Rate per 1,000 patient days} = \frac{(all \text{ VTE events})}{Number \text{ of patient days}} \times 1,000 \)

VII. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality, until quality auditing procedures are suggested by the network.

VIII. Notes

IX. Experts/Resources

N/A
A Central Venous Catheter (CVC) is defined as:
1. A catheter that has an access/insertion site in a deep vein, regardless of tip location.
2. Non central catheters (midlines) are counted as catheter associated events if their access point or tip location is a deep vein.
3. All types of catheters should be counted including implanted ports, tunneled catheters (i.e. Hickman or Broviac), non-tunneled central venous catheters (i.e. subclavian, jugular or femoral catheters, apheresis catheters, hemodialysis catheters, ECMO catheters, etc), Peripherally Inserted Central Catheters (PICC) with the tip location in a deep vein and procedures that require temporary placement of a catheter (i.e. cardiac catheterization, interventional radiology procedures requiring catheterization, etc).

A deep vein is defined as:
In the upper and lower extremities veins are classified as either deep or superficial. Only patients with DEEP vein thrombosis are reportable events, descriptions and figures are provided below. All other veins outside of the extremities are considered deep veins (i.e. cerebral sinus veins, jugular vein, superior vena cava, inferior vena cava, renal veins, hepatic vein, portal vein etc.)

References:

Reference #1
Arm and Leg Veins – Anatomy + Terminology

Confusion as to which veins of arms and legs are superficial and which are deep can lead to misclassification superficial thrombophlebitis and DVT and, thus, to incorrect treatment decisions.

A. Arm Veins
Graph of Arm Vein Terminology
- Basilic and cephalic veins are superficial veins;
- Brachial veins are deep veins;
- Brachial veins drain into the axillary vein, followed by the subclavian vein, brachiocephalic vein, and then the SVC (superior vena cava).

B. Leg Veins
Graph of Leg Vein Terminology
- Greater and lesser saphenous veins are superficial veins;
- popliteal vein and anything proximal to it are considered a proximal veins;
- gastrocnemius and soleal veins are intramuscular calf veins and part of the deep venous system. Together with the peroneal and tibial veins they make up the deep veins of the distal leg.
- The “superficial femoral vein” is an outdated term. It is now called the “femoral vein”. It is the major deep vein of the thigh.

Finally, Doppler ultrasound of the legs can only visualize the veins distal to the inguinal ligament, i.e. the common femoral vein and below. For assessment of iliac vein (i.e. pelvic vein) thrombosis or narrowing (such as detection of May-Thurner syndrome), pelvic CT venogram or MRI venogram need to be performed.
Reference #2: Arm Vein Terminology

Excluded

Deep Veins

Leg Vein Terminology

Superficial veins

Deep Veins

Inferior vena cava (IVC)
Common iliac vein
Internal iliac vein
External iliac vein
Common femoral vein
Deep femoral vein
Femoral vein
(Formerly: Superficial femoral vein)
Popliteal vein
Gastrocnemius vein
Anterior tibial vein
Soleus vein
Peroneal vein
Posterior tibial vein

Excluded

Proximal veins

Distal veins
A central line associated VTE is defined as:
1. A deep vein thrombosis that is found in the path of a central venous catheter
   i. Including branching veins (i.e. left portal vein thrombosis from an umbilical catheter.)
   ii. A DVT may not be identified until after a CVC is removed but should be considered CVC related if identified within 4 weeks of catheter removal.
   iii. A DVT at a site of multiple venous puncture “attempts” to place a CVC.
2. A pulmonary embolism in the setting of a central venous catheter without a non-line associated source.

A non-line associated VTE is defined as:
1. A DVT in an area with no prior CVC or attempts to place a CVC.

XI. Revision History

<table>
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<tr>
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<th>Description of Version</th>
<th>Date Completed</th>
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<td>V 1.0</td>
<td>Karen Zieker</td>
<td>Initial Draft</td>
<td>30-Mar-2012</td>
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<td>V 2.0</td>
<td>Jason Olivea/Neil Goldenberg</td>
<td>Draft #2</td>
<td>6-Nov-2012</td>
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<tr>
<td>V 3.0</td>
<td>Jason Bailey/Brian Branchford</td>
<td>Added exclusion of NICU patients</td>
<td>27-Feb-13</td>
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<td>V 4.0</td>
<td>Brian Branchford</td>
<td>Added more information location of DVT.</td>
<td>05-Nov-2013</td>
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<td>V 5.0</td>
<td>Karen Zieker, Jason Olivea, Brian Branchford</td>
<td>Further clarity with Notes</td>
<td>14-Nov-2013</td>
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<td>V 6.0</td>
<td>Karen Zieker</td>
<td>Added exclusion F (excluding clots) and added notes regarding multiple VTE events</td>
<td>17-Mar-2015</td>
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<tr>
<td>V 7.0</td>
<td>VTE Leaders and SMEs</td>
<td>Completely re-written to refocus group efforts</td>
<td>3-Mar-2016</td>
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<tr>
<td>V 8.0</td>
<td>VTE Leaders</td>
<td>Definition of a CVC clot and a Non-CVC clot</td>
<td>7-Oct-2016</td>
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OPERATIONAL DEFINITION

MEASUREMENT: Ventilator Associated Event (VAE)

I. Description and Rationale

This measure answers the question: How frequently does pediatric VAE occur?

The current version of the SPS Peds VAE Manual will serve as the official reference guide for rules around defining/reporting ventilator associated events to SPS.

II. Population Definition

The patient population for this measure is defined per the patient population operational definition. Patients in the inpatient setting will be included in the measure.

**Inclusion criteria**

Any patient in the inpatient setting who is receiving invasive mechanical ventilation. Inpatient locations eligible to participate in peds VAE surveillance are those locations in acute care hospitals, long term acute care hospitals, and inpatient rehabilitation facilities where denominator data (ventilator and patient days) can be collected for patients. Such locations may include critical/intensive care units (ICU), specialty care areas (SCA), step-down units and general care units.

**Exclusion criteria for (Ventilator Associated Events)**

- Any ventilation days on ECLS (Extracorporeal Life Support), e.g. ECMO, will be EXCLUDED.
- Patient who does not have a baseline period of stability or improvement on the ventilator, defined by ≥ 2 calendar days of stable or decreasing daily minimum* FiO2 or MAP values will be EXCLUDED.

III. Data Source(s)

Each hospital will report data using their own collection methods until specific high detection methods are prescribed by the network.

IV. Sampling and Data Collection Plan

VAE’s are assigned to the month when the event occurred.

V. Calculation

**Numerator**: Number of patients with a ventilator associated event, as defined by SPS Peds VAE manual. (See below for algorithm)

**Denominator**: Total number of mechanical ventilation days during the time period.

**Number of ventilator associated events per 1000 ventilator days**

(Numerator/Denominator) x 1000
Pediatric Ventilator Associated Event

Patient has a baseline period of stability or improvement on the ventilator, defined by ≥ 2 calendar days of stable or decreasing daily minimum* FiO2 or MAP (Mean Airway Pressure) values. The baseline period is defined as the 2 calendar days immediately preceding the first day of increased daily minimum MAP or FiO2.

*Daily minimum defined by lowest value of FiO2 or MAP during a calendar day (for FiO2, the lowest value needs to be maintained for at least 1 hour, and for MAP, it is only the daily minimum, regardless of duration)

In order to meet criteria, you need to be mechanically ventilated for at least 4 calendar days (2 days for stability and 2 days for worsened oxygenation).

After a period of stability or improvement on the ventilator, the patient has at least one of the following indicators of worsening oxygenation:
1) Increase in daily minimum* FiO2 of ≥ 0.25 (25 points) over the daily minimum FiO2 of the first day in the baseline period, sustained for ≥ 2 calendar days.
2) Increase in daily minimum* MAP values of ≥ 4 cmH2O over the daily minimum MAP of the first day in the baseline period, sustained for ≥ 2 calendar days. The MAP recordings should be reflective of ventilator breaths vs. patient breaths

*Daily minimum defined by lowest value of FiO2 or MAP during a calendar day. The lowest value of FiO2 needs to be maintained for at least 1 hour. For MAP's, it is only the daily minimum, regardless of the duration (The minimum values that should be considered for VAE surveillance is FiO2 of 0.21, MAP of 8 for < 30 days of age, and MAP of 10 for ≥ 30 days of age).

NOTE: “If they cannot meet the 1 hr minimum maintained for FiO2, take the lowest value recorded.
*For chronic patients who are on home ventilators and/or patients who are on APRV or VDR modes, and a MAP is not readily available, the use of FiO2 criteria only is acceptable.

VI. Data Quality Audit Procedures

Hospitals should develop their own procedures for auditing data quality until quality auditing procedures are suggested by the network.

VII. Notes: N/A

VIII. Experts/Resources

www.cdc.gov/nhsn (resource for adult VAE)
SPS Peds VAE Manual (SPS resource for peds VAE)

IX. Attachments: N/A

X. Revision History

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<td>Version 1</td>
<td>Laurie Mustin</td>
<td>Version 1 (initial draft)</td>
<td>11-10-16</td>
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<td>Version 3</td>
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<td>Version 3 (minor revision of inclusion criteria and exclusion criteria; Addition of footnote below algorithm</td>
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<td>Version 4</td>
<td>Laurie Mustin</td>
<td>Revision of inclusion and exclusion criteria</td>
<td>2-10-17</td>
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<td>Version 5</td>
<td>Laurie Mustin</td>
<td>Minor revision in algorithm</td>
<td>6-4-17</td>
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<td>Version 6</td>
<td>Laurie Mustin</td>
<td>Revision in criteria algorithm</td>
<td>6-19-17</td>
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**General Questions**

1. **Question**: For bundle reliability, does "observation" mean "direct observation"?
   **Answer**: We are not being prescriptive about how each institution is collecting this information, but will ask that the measure include process steps that increase the level of confidence that compliance represents actual understanding that the bundle was followed. This may include direct observation. Each institution will define the way they measure bundle compliance.

2. **Question**: Will there be a mechanism to share our various approaches to detection, such as sharing of trigger tools, coding definitions, etc.?
   **Answer**: The web form for data collection allows each institution to select the type of detection system that is used for each outcome measure. As learning occurs within the Hospital Acquired Condition Improvement Teams, the understanding of detection systems utilized by institutions will be shared, and tools and techniques for enhancing detection will also be a part of the Network sharing.

3. **Question**: Is there a target defined for number of bundle observations to be completed each month?
   **Answer**: No, each institution will define the way they measure bundle compliance. We are not being prescriptive about how each institution is collecting this information.

4. **Question**: How do we verify bundle compliance? Are we supposed to randomly observe a set number of bundles per month? What is the process?
   **Answer**: We are not being prescriptive about how each institution is collecting this information, but will ask that the measure include process steps that increase the level of confidence that compliance represents actual understanding that the bundle was followed. This may include direct observation. Each institution will define the way they measure bundle compliance.

5. **Question**: When we start submitting in May, will we be submitting April data only or back to January 2012? Also, should we only submit outcome metrics for those we’ve have a measure? (i.e., we haven’t been measuring Venous Thromboembolism (VTE) and don’t have our process ready to do so for May).
   **Answer**: We will be collecting data from January 2011 through March 2012 in the first data collection in May. We recognize that not every hospital will have every measure, or have data from that far back. We are asking each hospital to provide as much data as possible. It will not be a problem for you to exclude the VTE data.

6. **Question**: To date, we have received the final definitions for Catheter Line Associated Blood Stream Infections (CLA-BSI), Surgical Site Infections (SSI), Adverse Drug Events (ADE), and Patient Definition. When will the final definitions for the other HACs be distributed?
   **Answer**: Operational Definitions are posted on the OCHSPS website along with frequently asked questions. If you have additional questions, please send email to OCHSPS.data@cchmc.org.

7. **Question**: Will we need to submit process measures in addition to outcomes measures for our May 10th due date?
**Answer:** We will ask Network members to submit process measures along with outcome measures if they are readily available. We understand some process measures may not be available but our goal is to have all Network members submitting process measures as soon as possible.

8. **Question:** For events which meet definition for more than one HAC, how do we determine under which HAC category to submit? Or would this be submitted in both categories?
   **Answer:** There shouldn’t be a lot of overlap with these HACs. While there are a few examples, (e.g., readmission + SSI, or OB-AE + VTE), we don’t foresee a lot of double counting.

9. **Question:** We have an inpatient psychiatric unit (IPU) and an inpatient rehabilitation unit. The Patient Definition document states that all inpatient and observation patients are included in the measurement. We want to be certain that this should also include any/all data for our IPU and Rehab populations, as they are excluded from several other measures we collect. Please clarify.
   **Answer:** Include if these patients are inpatients or observation status patients

10. **Question:** if don’t have data for field, you said can enter 0. Does 0 mean o and N/A?
    **Answer:** Zero (0) means there were zero events and does not mean “N/A (not applicable)”. If the data collection is not applicable to your institution, please select “Data for this HAC not available”.

11. **Question:** Will these (webinar) slides be available for reference?
    **Answer:** Yes, the slides will be emailed out at the end of the presentation.

12. **Question:** For events which meet definition for more than one HAC, how do we determine under which HAC category to submit? Or would this be submitted in both categories?
    **Answer:** For data submission for the National Collaborative, the event should be counted once to avoid artificial inflation of the overall harm total. The hospital can choose which category it should be reported in since there are too many variables to make a rule that will apply appropriately across all hospitals and all HACs.
## SPS National Children’s Network HAC Measures Table

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<th>Denominator</th>
<th>Analysis</th>
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<td>Voluntary/optional reporting (for hospitals with a combined PICU/CICU enter your data in this row)</td>
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<tr>
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## SPS National Children's Network HAC Measures Table

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<tr>
<th>HAC</th>
<th>Numerator</th>
<th>Denominator</th>
<th>Analysis</th>
<th>Include in Serious Harm Index? This is what will be in the national count.</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surgical Site Infection</strong></td>
<td><strong>Total number of SSIs / 100 surgeries</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>SOURCE: NHSN</strong></td>
</tr>
<tr>
<td>SSI - Primary Neuro Shunt Surgeries</td>
<td>Number of SSIs for primary neuro shunt patients</td>
<td>Number of primary neuro shunt surgeries</td>
<td>Number of primary neuro shunt SSIs/100 primary neuro shunt surgeries</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SSI - Secondary Neuro Shunt Surgeries</td>
<td>Number of SSIs for secondary neuro shunt patients</td>
<td>Number of secondary neuro shunt surgeries</td>
<td>Number of secondary neuro shunt SSIs/100 secondary neuro shunt surgeries</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SSI - Revision Shunt Surgeries</td>
<td>Number of SSIs for revision shunt patients</td>
<td>Number of revision shunt surgeries</td>
<td>Number of revision shunt SSIs/100 revision shunt surgeries</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>SSI - Orthopedic Spine Surgeries</td>
<td>Number of SSIs for orthopedic spine patients</td>
<td>Number of orthopedic spine surgeries</td>
<td>Number of orthopedic SSIs/100 orthopedic spine surgeries</td>
<td>Yes</td>
<td>Orthopedic spine surgeries only includes spine fusions/refusions.</td>
</tr>
<tr>
<td>SSI - Cardiothoracic Surgeries</td>
<td>Number of SSIs for cardiothoracic patients</td>
<td>Number of closed chest cardiothoracic surgeries</td>
<td>Number of cardiothoracic SSIs/100 cardiothoracic surgeries</td>
<td>Yes</td>
<td>Closed chest cardiothoracic surgeries as defined by the NHSN.</td>
</tr>
<tr>
<td>SSI - Cardiothoracic Surgeries</td>
<td>Number of SSIs for cardiothoracic patients</td>
<td>Number of open chest cardiothoracic surgeries</td>
<td>Number of cardiothoracic SSIs/100 cardiothoracic surgeries</td>
<td>Yes</td>
<td>Open chest cardiothoracic surgeries as defined by the NHSN.</td>
</tr>
<tr>
<td><strong>Adverse Drug Events</strong></td>
<td><strong>Total number of SSIs / 100 surgeries</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>SOURCE: NCC MERP</strong></td>
</tr>
<tr>
<td>ADE - Category E (5)</td>
<td>Number of ADEs at level E (5)</td>
<td>Number of inpatient days (including observation status)</td>
<td>ADEs at level E/1000 patient days</td>
<td>No</td>
<td>NCC Merp</td>
</tr>
<tr>
<td>ADE - Categories F-I (6-9)</td>
<td>Number of ADEs at levels F-I (6-9)</td>
<td>Number of inpatient days (including observation status)</td>
<td>ADEs at level F-I/1000 patient days</td>
<td>Yes</td>
<td>NCC Merp</td>
</tr>
<tr>
<td><strong>Falls</strong></td>
<td><strong>Total number of SSIs / 100 surgeries</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>SOURCE: NDNQI</strong></td>
</tr>
<tr>
<td>Moderate or greater Falls</td>
<td>Number of falls with injury of moderate or above by definition of NDNQI</td>
<td>Number of inpatient days (including observation status)</td>
<td>Number of moderate or greater falls/1000 patient days</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>All Falls</td>
<td>Number of falls (with or without injury)</td>
<td>Number of inpatient days (including observation status)</td>
<td>Number of falls/1000 patient days</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>VTE</strong></td>
<td><strong>Total number of SSIs / 100 surgeries</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>SOURCE: Miller 2009</strong></td>
</tr>
<tr>
<td>VTE</td>
<td>Number of VTEs as defined in the notes</td>
<td>Number of inpatient days (including observation status)</td>
<td>Number of VTEs/1000 (patient days excluding NICU)</td>
<td>Yes</td>
<td>Includes PE, DVT and stroke (strokes deemed related to VTEs) (and possibly other clots per HAC working group recommendations); exclude VTEs that are present on admission; exclude VTEs that occur in NICU</td>
</tr>
</tbody>
</table>
### SPS National Children's Network HAC Measures Table

<table>
<thead>
<tr>
<th>HAC</th>
<th>Numerator</th>
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<th>Analysis</th>
<th>Include in Serious Harm Index? This is what will be in the national count.</th>
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</tr>
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<tbody>
<tr>
<td>Readmissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SOURCE: Rotter 2008</td>
</tr>
<tr>
<td><strong>7 Day Readmissions</strong></td>
<td>Number of readmissions to inpatient &amp; observation status *** see notes for exclusions</td>
<td>Number of discharges in inpatient &amp; observation status patients</td>
<td>number of readmissions/100 discharges</td>
<td>Reported separately</td>
<td>Excludes psych, rehab, chemo, and planned scheduled procedures. Readmission within 7 days of discharge (&lt;=7). Only exclude from the numerator.</td>
</tr>
<tr>
<td><strong>30 Day Readmissions</strong></td>
<td>Number of readmissions to inpatient &amp; observation status *** see notes for exclusions</td>
<td>Number of discharges in inpatient &amp; observation status patients</td>
<td>number of readmissions/100 discharges</td>
<td>Reported separately</td>
<td>Excludes psych, rehab, chemo, and planned scheduled procedures. Readmission within 30 days of discharge (&lt;=30). Only exclude from the numerator.</td>
</tr>
<tr>
<td>OB-Adverse Events</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SOURCE: Pettker et al. May 2009 Maternal - death, uterine rupture, admission to ICU (excluding planned admissions to ICU), return to OR, 4th degree laceration, hemorrhage requiring 4 or more units of packed rbc, VTE; Fetal - elective induction/delivery &lt; 39 weeks, brachial plexus injury, other nerve/cord injuries, Cord or Scalp pH &lt; 7.1. A low APGAR is defined as a score &lt;=3 at the 5 minute score. A birth is defined as a pregnancy. A mother who has multiples will count as one birth.</td>
</tr>
<tr>
<td>OB-AE - Hospitals with routine and high-risk delivery services</td>
<td>Number of births with one or more events (includes low APGAR)</td>
<td>Number of births during the time period. A mother delivering multiple babies is counted as one birth.</td>
<td>number of births with events/number of births * 100</td>
<td>Yes</td>
<td>To be completed by hospitals who do all deliveries</td>
</tr>
<tr>
<td>OB-AE - Hospitals with high risk delivery services only</td>
<td>Number of births with one or more events (excludes low APGAR)</td>
<td>Number of births during the time period. A mother delivering multiple babies is counted as one birth.</td>
<td>number of births with events/number of births * 100</td>
<td>Yes</td>
<td>To be completed by hospitals who do only high-risk deliveries</td>
</tr>
<tr>
<td>No OB services</td>
<td>na</td>
<td>na</td>
<td></td>
<td></td>
<td>To be completed by hospitals who do not deliver</td>
</tr>
</tbody>
</table>