

NHSN Basics and Updates



MARY ANDRUS, BA, RN, CIC
APIC CONSULTING SERVICES, INC.



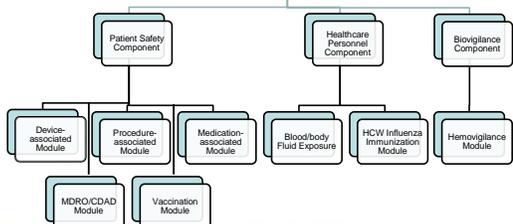
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Agenda

- Introduction – odds and ends
- Device-associated Events
 - Denominators
 - CLABSI
 - CAUTI
 - VAP
- Surgical Site Infections (SSI)
 - Denominator for procedure
 - SSI
- *C. difficile* LabID Events
- Getting the data out – NHSN Basics



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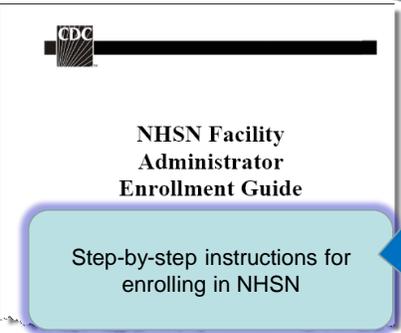
We will not discuss...

- Dialysis Events
- Central Line Insertion Practices (CLIP) Monitor
- Post-procedure pneumonia
- Patient vaccination
- Healthcare Personnel Safety Component
- Biovigilance Component
- MDRO Surveillance module



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<http://www.cdc.gov/nhsn/PDFs/FacilityAdminEnrollmentGuideCurrent.pdf>



Step-by-step instructions for enrolling in NHSN

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Every facility is unique

Locations

- MSICU
- ICU
- 6 West



Surgeons

- 101 John Smith
- 104 Greta Jones
- A13 Cochran, Randall



Users

- Mlandrus
- Jones 44
- Icp 45



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Steps for setting up your facility

- 1 • Complete enrollment
• Receive email from CDC (Facility is activated)
- 2 • Add users (if any)
- 3 • Add locations
- 4 • Add surgeons
• Add Monthly Reporting Plan(s)

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Location - Definition

The area to which a patient is assigned while receiving care in the healthcare facility

NOTE: Only locations where patients are housed overnight (i.e., inpatient locations) and where denominator data are collected can be used when monitoring infections in the Device-associated Module. This means that operating rooms (including cardiac cath labs, c-section rooms, and interventional radiology) and outpatient locations are not allowed when monitoring Device-associated infections in the Monthly Reporting Plan.



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CDC-defined Location

A CDC-defined designation given to a patient care area housing patients who have similar disease conditions or who are receiving care for similar medical or surgical specialties. Each facility location that is monitored is "mapped" to one CDC Location.

80% Rule.
If 80% of patients are of a certain type (e.g., pediatric patients with orthopedic problems) then that area is designated as that type of location (in this case, an Inpatient Pediatric Orthopedic Ward).



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Human Services
Control and Prevention

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Network | NHSN Home | My Info | Contact us | **Help**

at (ID 10000) as MVA.
10000) is following the PS component.

Add Monthly Reporting Plan

id with *

Memorial Hospital (ID 10000)

NHSN Patient Safety Modules Followed this Month

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Welcome

Popular Topics

About NHSN

Patient Safety Component

- Definition of Key Terms
- CDC Location Labels and Descriptions
- Patient Safety Monthly Reporting Plan
- Frequently Asked Questions (FAQs)
- Annual Surveys & Facility Contact Info
- General Data Entry Instructions
- Device-Associated Module
- High Risk Inpatient Influenza Module
- MDRO & CDAD Module
- Medication-Associated Module
- Procedure-Associated Module
- How To
- CDC HA1 Definitions
- Healthcare Personnel Safety Component
- Biovigilance Component: Hemovigilance N
- Analysis

Welcome to the NHSN Online Manual!

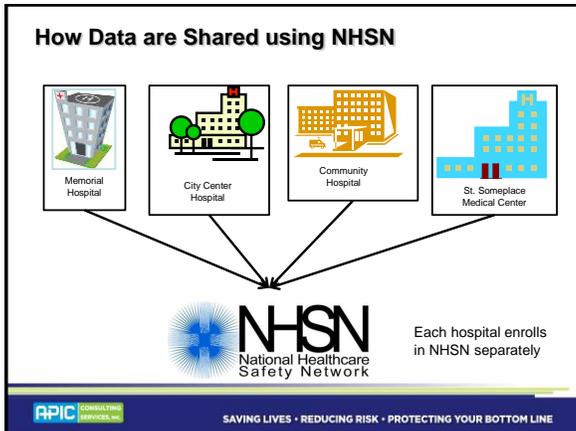
The NHSN Online Manual that guides the NHSN user through the definitions, reporting instructions, and capabilities relevant to the NHSN application. In an effort to ensure standardization of data collection and reporting procedures, considerable detail is provided throughout this help system.

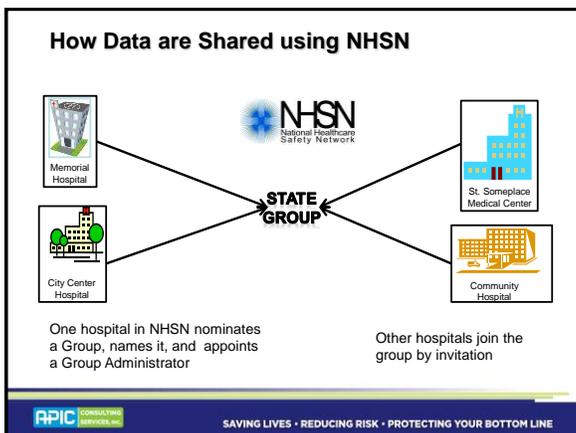
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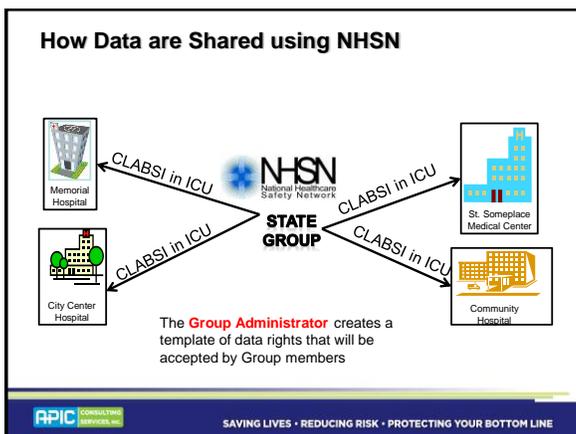


GROUPS – SHARING DATA WITH OTHERS

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Conferring Rights to a Group

NHSN Home

- Reporting Plan
- Event
- Procedure
- Summary Data
- Import/Export
- Analysis
- Surveys
- Users
- Facility
- Group**
 - Confer Rights
 - Join
 - Leave
 - Nominate
- Log Out

Memberships

Groups that have access to this facility's data

NHSN State Users Test Group #2 (20263)

Confer Rights HELP
Leave Group HELP

Enter ID and Password for this facility to join a new group

Group ID:

Group Joining Password:

Join Group HELP
Back

CDC Department of Health and Human Services
Centers for Disease Control and Prevention

NHSN - National Healthcare Safety Network

Logged into Texas General Hospital (ID 19092) as HANDBOIS.
Facility Texas General Hospital (ID 19092) is following the PIS component.

Confer Rights-Patient Safety

I Please review the data rights that "NHSN State Users Test Group #2" is requesting from

- Verify locations
- Press "accept" button to confer rights or [review current rights before accepting new rights](#)

[HELP](#)

Patient Safety

General View Options

Patient	With All Identifiers	
	<input checked="" type="checkbox"/> Without Any Identifiers	
	<input checked="" type="checkbox"/> With Specified Identifiers	Gender DOB Ethnicity Race
Monthly Reporting Plan	<input checked="" type="checkbox"/>	
Data Analysis	<input checked="" type="checkbox"/>	
Facility Information	<input checked="" type="checkbox"/>	

Surveys

Year	Year	Survey Type
2008 to		Facility Survey Data

Infections and other Events (Not specific to MDRO/CDI)

Plan	Month	Year	Month	Year	Event
In 1		2009			BSI - Bloodstream Infection (CIA)
					Location type: CC Location: Medical Cardiac Critical Care Other Location Requirements: Adult Your Locations: 2 CCU - 2ND FLOOR
In 1		2009			BSI - Bloodstream Infection (CIA)

CEPHRKS
CREKCOL1
CREKLEB
MISA
MISA
VRE

MDRO/CDI Summary Data (Denominators)

Plan	Month	Year	Month	Year	Location Type	Location	Other Location Requirements	Your
In 1		2012			FACWIDE	FacWideIN		

Total Patient Days Total Admissions Total Encounters

For monitoring C. difficile in a FACWIDE location:

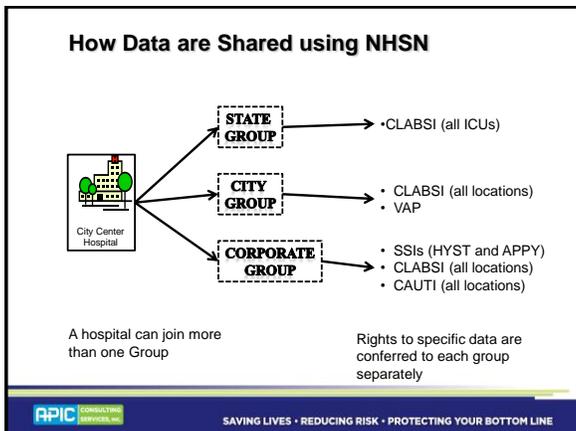
Patient Days Admissions Encounters

MDRO/CDI Process & Outcome Measures

Plan	Month	Year	Month	Year	Location Type	Location	Other Location Requirements	Your
------	-------	------	-------	------	---------------	----------	-----------------------------	------

Accept Back

7



CMS Reporting

NHSN will automatically share your data with CMS. There is no CMS "Group" that must be joined!

If your hospital participates in the Medicare – Medicaid program, NHSN will send the **required** data to CMS if they are in your Monthly Reporting Plan

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CMS Reporting via NHSN

Current and Proposed Requirements (as of 11/14/2011)

HAI Event	Facility Type	Reporting Start Date
CLABSI Adult, Pediatric, and Neonatal ICUs	IPPS Acute Care Hospitals	January 2011
CAUTI Adult and Pediatric ICUs	IPPS Acute Care Hospitals	January 2012
SSI Colon and Abdominal Hysterectomy	IPPS Acute Care Hospitals	January 2012
I.V. antimicrobial start	Dialysis Facilities	January 2012
Positive blood culture	Dialysis Facilities	January 2012
Signs of vascular access infection	Dialysis Facilities	January 2012
CLABSI	Long Term Care Hospitals *	October 2012
CAUTI	Long Term Care Hospitals *	October 2012
CAUTI	Inpatient Rehabilitation Facilities	October 2012
MRSA Bacteremia	IPPS Acute Care Hospitals	January 2013
C. difficile LabID Event	IPPS Acute Care Hospitals	January 2013
HCW Influenza Vaccination	IPPS Acute Care Hospitals	January 2013
HCW Influenza Vaccination	ASCs	October 2014
SSI (Future Proposal)	Outpatient Surgery/ASCs	TBD

* Long Term Care Hospitals are called Long Term Acute Care Hospitals in NHSN

Does a hospital have to submit these data to both CMS and NHSN?

No, CDC will share the data with CMS.

Remember, only "in plan" data will be shared with CMS. It is the responsibility of each facility to check its monthly reporting plans to make sure they include the necessary events and locations and/or procedures in order to comply with the CMS reporting requirements,



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CLABSI
CAUTI
VAP

DEVICE-ASSOCIATED EVENTS



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Steps for setting up your facility

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- 1 • Add users (if any)
- 2 • Add locations
- 3 • Add surgeons
- 4 • Add Monthly Reporting Plan(s)

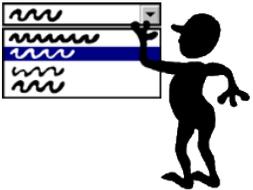


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Monthly Reporting Plan Device-associated Events

- Your way of telling CDC which of your data to use
- CDC will use the data you specify in your plan when the aggregate is calculated

You can generate the Monthly Reporting Plan on the form, or directly into NHSN



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Add Monthly Reporting Plan

Important Note!
You will *not* be allowed to enter any data into NHSN for a month that has no Plan

From the blue navigation bar, select **Reporting Plan** then **Add**



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Add Monthly Reporting Plan

Mandatory fields marked with *

Facility ID*:

Month*:

Year*:

Select the Month and Year for the Plan

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Monthly Reporting Plan – DA Module

Patient Safety Monthly Reporting Plan
OMB No. 0920-0065
Exp. Date: 03-31-2011

* required for saving
 Facility ID: 40000 *Month/Year: 10 / 2009

No NHSN Patient Safety Modules Followed this Month

Device-Associated Module

Locations	CLA BS1	DE	VAP	CAUTI	CLIP
3 West Medical	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CTICU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SICU	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

First, choose the location(s) where you will monitor the event

Then choose which events you will monitor in each selected location

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Denominators (Summary Data)

- Train someone on the floor to collect summary data
- At the same time each day, count:
 - the number of patients on the unit
 - the number of patients with one or more of the devices you're collecting

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Counting Patient Days

- At the same time each day, count the number of patients on the unit.
- In NICU's, patients are counted separately for each birthweight category
- Do not count patients who have not yet been admitted
- Do not count patients who have been discharged
- Do count patients who may be off the floor for tests (e.g., radiology, surgery, etc.) at the time the count is done
- The total is recorded in NHSN at the end of the month

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Locations – where DA events can be monitored

- Intensive Care Unit (ICU)
- Neonatal Intensive Care Unit (NICU)
- Specialty Care Areas (SCA)
 - Hematology/Oncology
 - Bone Marrow Transplant
 - Solid Organ Transplant
 - Inpatient/Acute Dialysis
 - Long-term Acute Care
- Other inpatient locations where patients are housed overnight and where denominator data are collected



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ICU/Other Locations Denominator Form

- Used for critical care locations
- Used for step down units
- Used for other patient care wards
 - Examples:
 - Medical-surgical
 - Orthopedic
 - OB/GYN
- Is **not** used for NICU or SCA locations

NHSN Denominators for Intensive Care Unit (ICU) Other locations (not NICU or SCA)				
Facility ID	Location Code	Month	Date	
Base	Number of patients	Number of patients with 1 or more central lines	Number of patients with a urinary catheter	Number of patients with a ventilator
1				
2				
3				
4				
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Example

- A surgical ICU (SICU) has 16 beds. Today, when patient days are counted (4 pm), there are 8 medical patients and 7 surgical patients
- For this unit today, 15 patients are recorded on the Denominator for ICU/Other Locations form
- Totals recorded in NHSN at the end of the month

NHSN Denominators for Intensive Care Unit (ICU) Other locations (not NICU or SCA)				
Facility ID: 13000	Location Code: SICU	Month: Oct	Date	
Date	*Number of patients	**Number of patients with 1 or more central lines	**Number of patients with a urinary catheter	Number of patients with a ventilator
1	15			
2				
3				

Counting Device Days

- At the same time each day, count the number of patients with one or more of the devices you are monitoring

Example: There are 6 patients on Medical Ward. 3 of the patients have a PICC line and one additional patient has both a PICC line and a Swan Ganz catheter. The number of Central Line days for the Medical Ward is 4

Example: There are 8 patients in the CTICU at 2 pm. 2 of the patients are on ventilators. The number of ventilator days for the CTICU today is 2.



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Examples:

James

1 James is admitted today at 5 am and an indwelling urethral catheter is inserted. At noon today, one catheter day is counted



Cathy

2 Cathy had an indwelling catheter inserted at the time of her cesarean section. It was removed at 11 am this morning.



She was unable to void following the removal of the catheter and a new foley was inserted at 3:30 pm.

At noon today, zero catheter days are recorded for Cathy



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Example of Summary Data

NHSN Denominators for Intensive Care Unit (ICU)/ Other locations (not NICU or SCA) OMB No. 0920-0040 Exp. Date: 09-30-12

Facility ID: 000111 *Location Code: MICU **Month: Jan ***Year: 2012 ** required for saving.

Date	*Number of patients	**Number of patients with 1 or more central lines	***Number of patients with a urinary catheter	****Number of patients on a ventilator
1	6	5	6	
2	7	5	6	
3	7	4	5	
4	9	6	7	
5	10	9	10	
6	10	9	10	
7	9	9	9	
8	6	5	5	

Note: collect only those device days that are monitored



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Electronic Collection of Denominators

When denominator data are available from electronic databases (e.g., ventilator days from respiratory therapy), these sources may be used as long as the counts are not substantially different (+/- 5%) from manually collected counts (3 months)

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March 11-12, 2009
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MSICU - Wednesday, November 28, 2007 10:00 am				
Room #	Name	Urinary catheter	IV line	Ventilator
201	Mrs. Jones		CVC – Jugular	IPPB q 6 hr
202	Miss Scarlett		CVC – Femoral	
203	Mr. Green	Suprapubic to dd	Swan ganz PICC	Tracheostomy ventilator
204	Mrs. White	Foley to dd	PIV X 2	
205	Col. Mustard	Foley out 8:00 am	PIV right antecub CVC Jugular	
206	Mrs. Doubtfire			Weaning (off vent)
207	Mr. Jackson	Cath for spec.	PIV right antecub	IPPB q 6 hr
208	Mr. Blue	Foley to dd	CVC – Subclavian	Vent cont.
209	Mrs. Smith – transferred to MS Ward at 11 am	Straight cath prm	PICC	Vent . Exubated at 10:30 am – on room air
210	Miss Brown – transferred from CVICU @ 9 am	Foley to dd	PICC	

Patient days _____ Central line days _____
 Indwelling catheter days _____ Ventilator days _____
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Definition: Healthcare-associated Infection (HAI)

A localized or systemic condition resulting from an adverse reaction to the presence of an infectious agent(s) or its toxin(s).

There must be no evidence that the infection was present or incubating at the time of admission to the acute care setting

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Sources of Infection

- HAI may be caused by infectious agents from endogenous or exogenous sources



Endogenous sources are body sites, such as the skin, nose, mouth, gastrointestinal (GI) tract, or vagina that are normally inhabited by microorganisms



Exogenous sources are those external to the patient, such as patient care personnel, visitors, patient care equipment, medical devices, or the health care environment



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Surveillance Definitions

- Combination of different types of evidence



Radiologic



Laboratory



Clinical signs/symptoms



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Other considerations

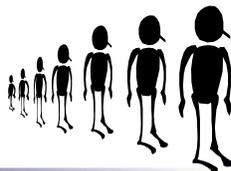
Clinical Criteria (Physician)

- Individualized to the patient
- Designed to provide diagnosis and treatment



Surveillance Definitions (Infection Preventionist)

- Population-based
- Consistently used uniformly over time



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Contamination and Colonization

- Not considered “present or incubating”
- Do not cause adverse clinical symptoms even though organisms are present

Contamination Example:
 Patient with abdominal trauma with gross spillage of bowel contents. If infection develops it is an HAI.

Colonization Example:
 Patient who screens positive with MRSA in nares on admission. If infection develops it is an HAI



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New infection? Extension of old infection?

- Look for evidence of resolution
- Change in pathogen, by itself, is not enough to call it a new infection



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Secondary BSI

A culture-confirmed BSI associated with a documented HAI at another site



Cultured primary site

If the primary infection is cultured, the Secondary BSI must yield culture of the same organism and exhibit the same antibiogram as the primary HAI site



Not cultured primary site

If a culture is not used to meet the criteria for a primary HAI, and the blood culture grows an appropriate organism, the BSI is secondary and the organism grown is reported for the primary HAI



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Examples of Secondary BSI

- A patient with an indwelling urinary catheter and a central line has a fever on day 2 following admission. He grows *E. coli* in a urine culture. A blood culture grows the same *E. coli* organism. A UTI is reported with the organism *E. coli*. A secondary BSI is reported on the UTI form.
- On postoperative day 4, a COLO patient grows *E. facium* in a blood culture. A CT scan of the abdomen reveals an abscess in the peritoneum. SSI-GIT is reported with the organism *E. facium*. A secondary BSI is reported.



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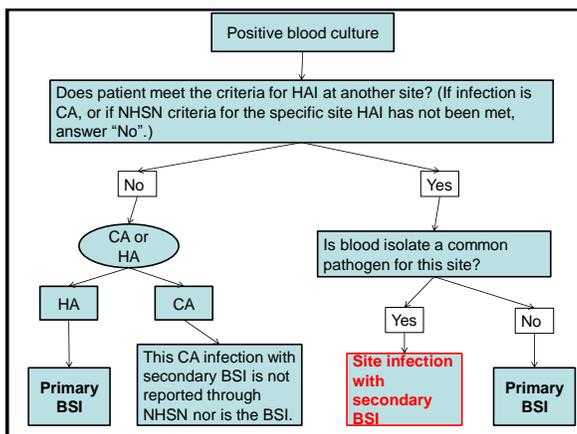
Secondary BSI (cont.)



- Mr. Brown has a PICC line. His physician documents that he has a urinary tract infection not associated with an indwelling catheter. No urine culture is done, but a urinalysis is positive for nitrites. On the same day, Mr. Brown has a blood culture which grows MRSA.
- A CLABSI is reported with *S. aureus* (MRSA) as the organism.



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Methodology: How Data are Collected

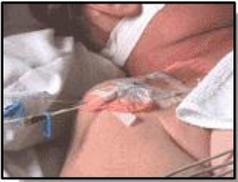
- Active**
 - Trained ICPs look for and identify infections
 - Information from multiple data sources
- Patient-based**
 - Not based entirely on laboratory data
 - Identification of risk factors and patient care procedures
- Prospective**
 - Monitoring patients while still in the hospital
 - Not based just on chart review after patient is discharged
- Priority-directed**
 - Objectives for surveillance are defined and focused on specific events
 - Not total house (comprehensive) surveillance

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Methodology How Rates are Calculated

- Risk-adjusted**
 - Rates are controlled for variations in the distribution of major risk factors
 - Allows for comparison of rates
- Expressed as Incidence Rates**
 - New events in a population during a specific time period
- Standardized Infection Ratios**
 - Adjusts for patients of varying risk within each facility

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Central Line-associated Bloodstream Infection (CLABSI)

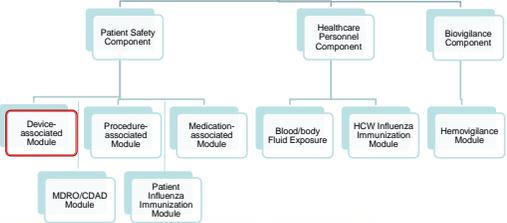
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Introduction – CLABSI

- 250,000 CLABSIs occur in the United States each year
- Increased length of hospital stay
- Increased cost; the non-inflation-adjusted attributable cost of CLABSIs has been found to vary from \$3,700 to \$29,000 per episode

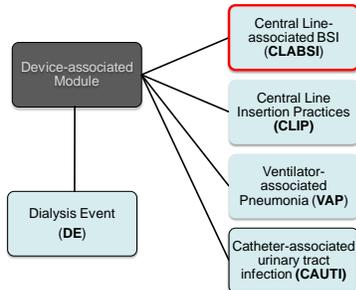


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Device-associated Module



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CLABSI –Terms and Definitions

- Use CDC Definitions for the following:
 - CLABSI
 - Central Line
 - Infusion
 - Transfer Rule
 - Types of Central Lines
 - Bloodstream Infection
 - LCBI
 - Criterion 1
 - Criterion 2
 - Criterion 3



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CLABSI Definition

- Central Line-Associated Bloodstream Infection (CLABSI) is a primary bloodstream infection (BSI) in a patient that had a central line *within* the 48-hour period before the development of the BSI



NOTE: There is no minimum time period that the central line must be in place in order for the BSI to be considered central line-associated



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Definition: Central Line

A vascular infusion device that terminates at or close to the heart or in one of the great vessels which is used for infusion, withdrawal of blood, or hemodynamic monitoring.



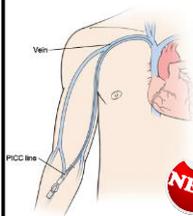
The following are considered great vessels for the purpose of reporting central line infections and counting central line days

- Aorta
- Pulmonary artery
- Superior vena cava
- Inferior vena cava
- Brachiocephalic veins
- Internal jugular veins
- Subclavian veins
- External iliac veins
- Common iliac veins
- Femoral veins



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Additional information about central lines



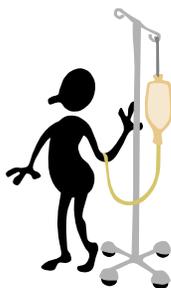
- In neonates, the umbilical artery is considered a great vessel
- Pacemaker wires and other non-lumened devices inserted into central blood vessels or the heart are not considered central lines, because fluids are not infused, pushed, nor withdrawn through such devices.
- An introducer is considered an intravascular catheter.
- **Intraaortic balloon pumps (IABP) are not central lines**
- **Extracorporeal membrane oxygenation (ECMO) and femoral artery catheters are not central lines.**



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Definition: Infusion

- Introduction of a solution through a blood vessel via a catheter lumen
- Includes:
 - Continuous infusions such as nutritious fluids or medications, or
 - Intermittent infusions such as flushes or IV antimicrobial administration
 - Administration of blood or blood products in the case of transfusion or hemodialysis



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Transfer Rule

- If the BSI develops in a patient within 48 hours of transfer from one inpatient location to another, indicate the *transferring* location on the infection report.



Example: Jane Smith is a patient in the Surgical ICU. On Tuesday her central line is removed and she is transferred to the GI Medical Ward. She develops a bloodstream infection on Wednesday afternoon. This is a CLABSI which is reported to the Surgical ICU.

- NOTE: It is not required to monitor for CLABSIs after the patient is discharged from the facility. However, if discovered, they should be reported to NHSN. No additional central line days are recorded.



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Types of Central Lines

- **Temporary**– A central line that is nontunneled
- **Permanent**– includes
 - Tunneled catheters including certain dialysis catheters
 - Implanted catheters (including ports)
- **Umbilical Catheter** – central vascular device inserted through the umbilical artery or vein in a neonate



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BSI Definitions

- Use Primary Bloodstream Infection (BSI) form for each potential CLABSI record that reviewed.
- The specific type of BSI will be:
 - Laboratory-confirmed Bloodstream Infection (LCBI) - can be used for any patient, including patients \leq 1 year of age



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Laboratory-confirmed Bloodstream Infection (LCBI)

LCBI Criterion 1

Patient has a **recognized pathogen** cultured from **one or more blood cultures**

and

organism cultured from blood is not related to an infection at another site



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Notes about Criterion 1



The phrase, "one or more blood cultures" means that at least one bottle from a blood draw is reported by the laboratory as having grown organisms (i.e., is a positive blood culture)

The term "recognized pathogen" does not include organisms considered common commensals

Examples of "recognized pathogens":
S. aureus
Enterococcus spp.
E. coli
Pseudomonas spp.
Klebsiella spp.
Candida spp.





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Laboratory-confirmed bloodstream infection (LCBI)

LCBI Criterion 2

Patient has at least one of the following signs or symptoms: fever (>38° C), chills, or hypotension

and signs and symptoms and positive laboratory results are not related to an infection at another site

and **common commensal** is cultured from two or more blood cultures drawn on separate occasions

- **Common commensal**
 - Diphtheroids (*Corynebacterium* spp.)
 - *Bacillus* spp. (not *B. anthracis*)
 - *Propionibacterium* spp.
 - Coagulase-negative staphylococci (including *S. epidermidis*)
 - Viridans group streptococci
 - *Aerococcus* spp.
 - *Micrococcus* spp.



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Two or more blood cultures on separate occasions



"Two or more blood cultures drawn on separate occasions" means

1. Blood from at least 2 blood draws were collected within two days of each other and
2. At least one bottle from each draw is reported as having grown the same common commensal



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“Sameness” of organism

If the common commensal is identified to the species level from one culture, and a companion culture is identified with only a descriptive name (i.e., to the genus level), this it is assumed that the organisms are the same



Example: If a culture grows *Staphylococcus epidermidis* and a companion culture grows *Coagulase-negative staphylococci*, then you can report that the common commensals are the same and that they are *S. epidermidis*



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Only genus and species identification should be utilized to determine the **sameness of common commensals**. No additional comparative methods should be used (e.g., morphology or antibiograms) because laboratory testing capabilities and protocols may vary between facilities

This will reduce reporting variability, solely due to laboratory practice, between facilities reporting LCBIs meeting criterion 2. Report the organism to the genus/species level only once, and if antibiogram data are available, report the results from the most resistant panel.



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Examples of how to report speciated and unspeciated common commensals

Culture Report	Companion Culture Report	Report as...
<i>S. Epidermidis</i>	Coagulase-negative staphylococci	<i>S. epidermidis</i>
<i>Bacillus</i> spp. (not anthracis)	<i>B. Cereus</i>	<i>B. Cereus</i>
<i>S. Salivarius</i>	<i>Strep viridans</i>	<i>S. salivarius</i>



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Blood Culture Specimen Collection

Ideally, blood specimens for culture should be obtained from two to four blood draws from separate venipuncture sites, not through the vascular catheter.

These blood draws should be performed simultaneously or over a very short period of time (i.e., within a few hours).

If your facility does not currently obtain specimens using this technique, you may still report BSIs using these criteria, but you should work with appropriate personnel to facilitate better specimen collection practices for blood cultures



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Laboratory-confirmed bloodstream infection (LCBI)

LCBI Criterion 3

Patient <= 1 year of age has at least one of the following signs or symptoms: fever (> 38° C core), hypothermia (>36° C. Core), apnea, or bradycardia

and signs and symptoms and positive laboratory results are not related to an infection at another site

and

common commensal is cultured from two or more blood cultures drawn on separate occasions

Common commensal

- Diphtheroids (*Corynebacterium* spp.)
- Bacillus* spp. (not *B. anthracis*)
- Propionibacterium* spp.
- Coagulase-negative staphylococci (including *S. epidermidis*)
- Viridans group streptococci
- Aerococcus* spp.
- Micrococcus* spp.



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Primary Bloodstream Infection (BSI)

Page 1 of 4

Required for saving **required for completion

Facility ID:	Event #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
*Event Type: BSI	*Date of Event:
Post-procedure BSI: Yes No	Date of Procedure:
NHSN Procedure Code:	ICD-9-CM Procedure Code:
*MDRO Infection Surveillance:	
<input type="checkbox"/> Yes, this infection's pathogen & location are in-plan for Infection Surveillance in the MDRO/CDI Module <input type="checkbox"/> No, this infection's pathogen & location are not in-plan for Infection Surveillance in the MDRO/CDI Module	
*Date Admitted to Facility:	*Location:
Risk Factors	
*If ICU/Other locations, Central line: Yes No	Location of Device Insertion: _____
*If Specialty Care Area:	Date of Device Insertion: ___/___/___
Permanent central line: Yes No	
Temporary central line: Yes No	
*If NICU,	
Central line, including umbilical catheter: Yes No	



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Antimicrobial Susceptibility

Pathogen #	Gram-positive Organisms	AMP	DAPTO	LNZ	PENG	VANC
2	Coagulase-negative staphylococci	S	S	S	S	S
1	Enterococcus faecalis	S	S	S	S	S
	Enterococcus faecium	S	S	S	S	S
	Staphylococcus aureus	S	S	S	S	S

Select susceptibility pattern for each antimicrobial agent using the following scale:
 S = Susceptible
 I = Intermediate
 R = Resistant
 N = Not tested
 NS = Non-susceptible
 S-DD = Susceptible – dose dependent

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Circle Yes if the patient died during this hospitalization.

Circle Yes if the patient died directly as a result of the BSI or if the BSI was a contributing factor to the patient death.

**Died:	Yes	No	BSI Contributed to Death:	Yes	No
Discharge Date:	12/21/2011		*Pathogens Identified:	Yes	No

Optional field. Date of patient discharge.

If patient has BSI, this will always be Yes

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QUESTIONS?

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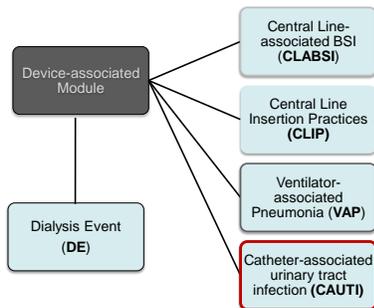


Catheter-associated Urinary Tract Infection (CAUTI)



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Device-associated Module



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Introduction – Urinary Tract Infections and Indwelling Urinary Catheters

- The urinary tract is the most common site of HAI
- Almost all UTIs are directly related to catheterization of the urinary tract
- CAUTI can lead to complications such as pyelonephritis or bacteremia



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CLABSI –Terms and Definitions

- Use CDC NHSN definitions for the following:
 - CAUTI
 - Indwelling urinary catheter
 - CAUTI
 - Symptomatic UTI (SUTI)
 - Asymptomatic Bacteremic UTI (ABUTI)

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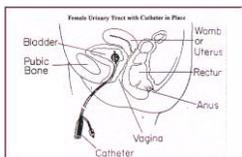
Definition: CAUTI

UTI that occurs in a patient who had an indwelling urethral catheter in place at the time of or within the 48- hour period before the onset of the UTI

NOTE: There is no minimum time period that the catheter must be in place in order for the UTI to be considered ventilator-associated.

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Definition: Indwelling Catheter



- **A drainage tube that is inserted into the urinary bladder through the urethra, is left in place, and is connected to a closed collection system.**
 - Also called a Foley catheter
 - Does not include straight in and out catheters
 - Does not include suprapubic or nephrostomy catheters



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Transfer Rule

- If the CAUTI develops in a patient within 48 hours of transfer from one inpatient location to another, indicate the *transferring* location on the infection report.

Example: Mr. Doe is a MICU patient. His foley catheter is removed on Thursday and he is transferred to the Orthopedic Ward on Saturday. Sunday evening he meets the criteria for SUTI. This is reported as a CAUTI and the location is the Orthopedic Ward.



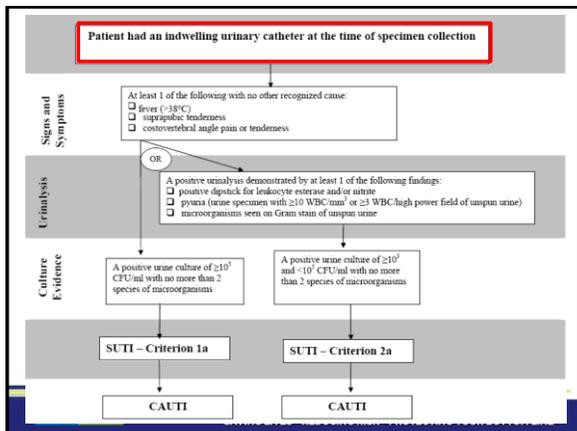
- NOTE: It is not required to monitor for CAUTIs after the patient is discharged from the facility. However, if discovered, they should be reported to NHSN. No additional catheter days are recorded.

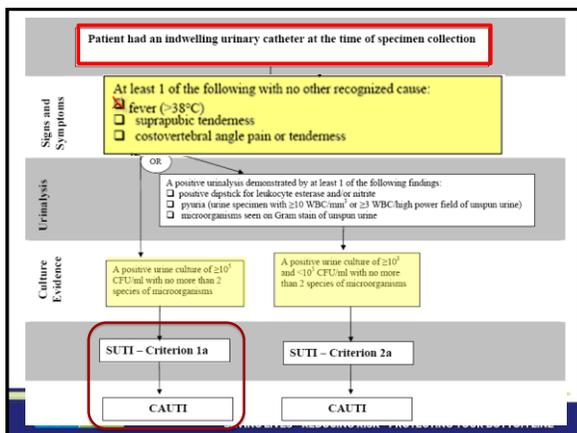


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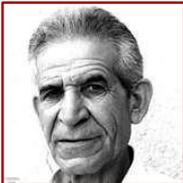
Symptomatic Urinary Tract Infection (SUTI) Definitions

- Indwelling catheter in place at the time of specimen collection
- Patient had an indwelling catheter discontinued within 48 hours prior to specimen collection
- Patient with no catheter in place at the time of specimen collection or within 48 hours prior to specimen collection





CAUTI



Example:
Charles Green began to experience suprapubic pain the day following the insertion of a foley catheter. A urine culture shows $> 10^5$ CFU/cc *Klebsiella oxytoca*.
Reported as a CAUTI

Uropathogens

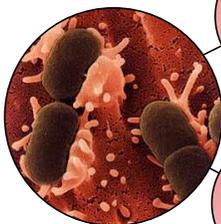
Defined by NHSN

- Gram-negative bacilli
- *Staphylococcus* spp.
- Yeasts
- Beta-hemolytic *Streptococcus* spp.
- *Enterococcus* spp.
- *G. vaginalis*
- *Aerococcus urinae*
- *Corynebacterium* (urease positive)



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CAUTI Criteria



SUTI

- Indwelling catheter
- Positive urine culture
- Signs/Symptoms

ABUTI

- Indwelling catheter
- Positive urine culture
- No signs/symptoms
- Matching blood culture



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Specimen Collection

Urine specimens for culture should be processed as soon as possible, preferably within 1 to 2 hours. If urine specimens cannot be processed within 30 minutes of collection, they should be refrigerated, or inoculated into primary isolation medium before transport, or transported in an appropriate urine preservative. Refrigerated specimens should be cultured within 24 hours.



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*Specific Event: Symptomatic UTI (SUTI) Asymptomatic Bacteremic UTI (ABUTI) Other UTI (OUTI)

*Specify Criteria Used: (check all that apply)

Signs & Symptoms	Laboratory & Diagnostic Testing
<input checked="" type="checkbox"/> Fever <input type="checkbox"/> ≤ 1 year old	<input type="checkbox"/> 1 positive culture with $\geq 10^5$ CFU/ml with no more than 2 species of microorganisms
<input type="checkbox"/> Urgency <input type="checkbox"/> Fever	<input checked="" type="checkbox"/> Positive dipstick for leukocyte esterase or nitrite
<input type="checkbox"/> Frequency <input type="checkbox"/> Hypothermia	<input type="checkbox"/> Pyuria
<input type="checkbox"/> Dysuria <input type="checkbox"/> Bradycardia	<input type="checkbox"/> Microorganisms seen on Gram stain of unspun urine
<input type="checkbox"/> Suprapubic tenderness <input type="checkbox"/> Dysuria	<input checked="" type="checkbox"/> 1 positive culture with $\geq 10^3$ CFU/ml and $< 10^5$ CFU/ml with no more than 2 species of microorganisms
<input type="checkbox"/> Costovertebral angle pain or tenderness <input type="checkbox"/> Vomiting	<input type="checkbox"/> Positive culture
<input type="checkbox"/> Abscess <input type="checkbox"/> Pain or tenderness	<input type="checkbox"/> Positive blood culture
<input type="checkbox"/> Purulent drainage or material <input type="checkbox"/> Radiographic evidence of infection	
<input type="checkbox"/> Other evidence of infection found on direct exam, during surgery, or by diagnostic tests	

Check each of the specific UTI criteria that were met

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If this UTI also demonstrates a documented secondary BSI, circle **Yes**. Otherwise, circle **No**

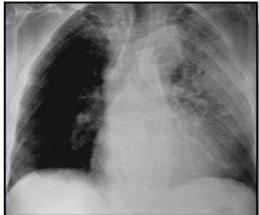
*Secondary Bloodstream Infection: Yes No

*Pathogens Identified: Yes No *If Yes, specify on page 2

Comments: _____

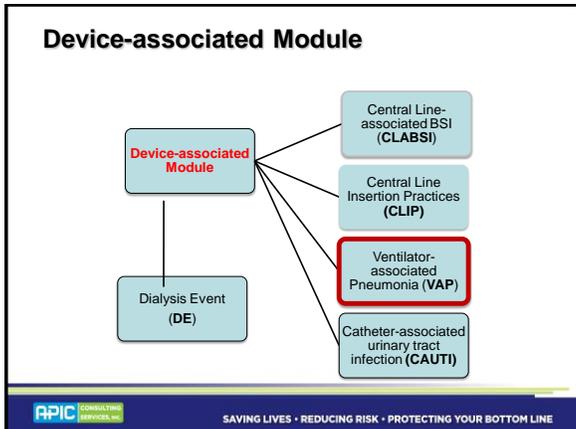
Important Note!
If the specific UTI event type is **ABUTI**, secondary BSI must be **Yes**

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Ventilator-associated Pneumonia (VAP)

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Introduction – Ventilator-associated Pneumonia (VAP)

- Pneumonia -- 15% of all hospital-associated infections
- 27% of all infections acquired in the critical care areas of acute care hospitals
- PNEU -second most common hospital-associated infection after that of UTI
- The primary risk factor -- mechanical ventilation (with its requisite endotracheal intubation).

March 11-12, 2009

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Monthly Reporting Plan – Device-associated Events

NHSN Patient Safety Monthly Reporting Plan

Page 1 of 2
 *Required for saving
 Facility ID: 000142 *Month/Year: Nov / 2011
 No NHSN Patient Safety Modules Followed this Month

Locations	CLABSI	DE	VAP	CAUTI	CLIP
MICU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
NICU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SICU	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Locations – Where VAP Events Can be Monitored

- Intensive Care Unit (ICU)
- Neonatal Intensive Care Unit (NICU)
- Specialty Care Areas (SCA)
- Other inpatient locations where patients are housed overnight and where denominator data are collected



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Example of Summary Data

NHSN Denominators for Intensive Care Unit (ICU)/ Other locations (not NICU or SCA) ONS No. 0820-0888 Exp. Date: 02-29-2009

Facility ID: 13000 *Location Code: MSICU *Month: Aug *Year: 2008 ** required for saving

Date	*Number of patients	**Number of patients with 1 or more central lines	***Number of patients with a urinary catheter	****Number of patients on a ventilator
1	6	5	1	1
2	7	5	2	2
3	7	5	2	2
4	8	7	4	4
5	5	5	2	2
6	8	7	4	4
7	10	8	6	6
8	9	7	4	4
9	9	7	4	4
10				
11				
12				

Each day, at the same time each day, collect the number of patients on a ventilator

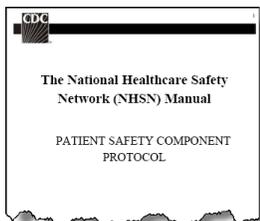


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VAP –Terms and Definitions

- Use CDC Definitions for the following:

- VAP
- Ventilator
- PNU1
- PNU2
- PNU3



NHSN Manual Chapter 6



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March 11-12, 2009

Definition: VAP



- A pneumonia (PNEU) that occurs in a patient who was intubated and ventilated at the time of or within 48 hours before the onset of the pneumonia

NOTE: There is no minimum time period that the ventilator must be in place in order for the pneumonia to be considered ventilator-associated.

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Definition: Ventilator



- A device to assist or control respiration continuously, inclusive of the weaning period, through a tracheostomy or by endotracheal intubation.

NOTE: Lung expansion devices such as intermittent positive-pressure breathing (IPPB); nasal positive end-expiratory pressure (PEEP); and continuous nasal positive airway pressure (CPAP or hypoCPAP) are not considered ventilators unless delivered via tracheostomy or endotracheal intubation (e.g., ET-CPAP)

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Pneumonia Definitions

- PNU1: Clinically defined pneumonia
- PNU2: Pneumonia with common bacterial pathogen
- PNU2: Pneumonia with Viral, *Legionella*, etc. pathogen
- PNU3: Pneumonia in immunocompromised patients

Pneumonia criteria are based on the following types of criteria:

1. X-ray
2. Clinical signs and symptoms
3. Laboratory

Follow pneumonia flow diagram for definitions

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PNU1 – Clinically-defined Pneumonia

X-Ray findings



Patient with underlying disease has **2 or more serial x-rays** with one of the following:

- New or progressive and persistent infiltrate
- Consolidation
- Cavitation
- Pneumatoceles, in <1 y.o.

OR

Patient without underlying disease has **one or more serial x-rays** with one of the following:

- New or progressive and persistent infiltrate
- Consolidation
- Cavitation
- Pneumatoceles, in <1 y.o.





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PNU1 – Clinically-defined Pneumonia

Signs and Symptoms

At least one of the following:

- Fever (>38°C/100.4°F) with no other cause
- Leukopenia (<4,000 WBC/mm³ or leukocytosis (≥12,000 WBC/mm³)
- Altered mental status with no other cause, in ≥ 70 y.o.





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PNU1 – Clinically-defined Pneumonia

Signs and Symptoms

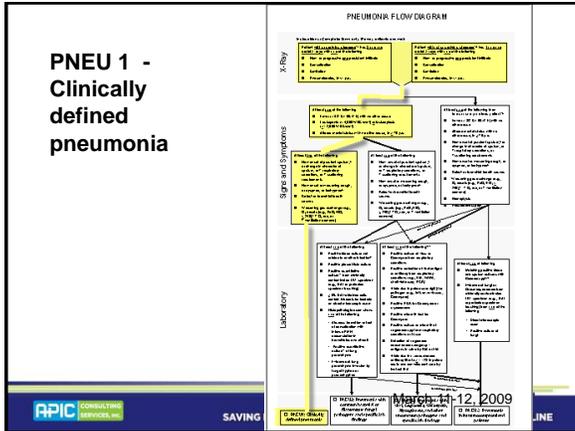
At least two of the following:

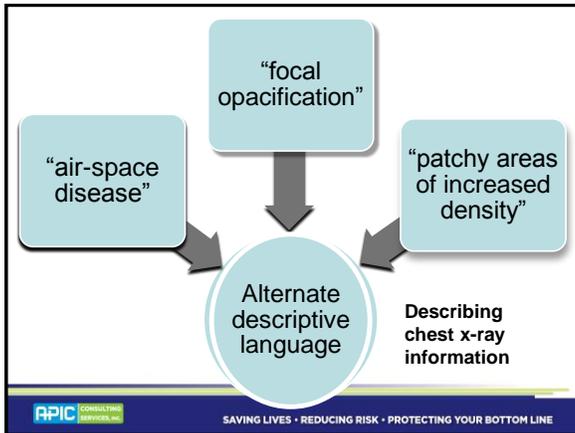
- New onset of purulent sputum, or change in character of sputum, or ↑ suctioning requirements
- New onset or worsening cough, or dyspnea, or tachypnea
- Rales or bronchial breath sounds
- Worsening gas exchange (e.g., O₂ desats [e.g., PaO₂/FIO₂ ≤240], ↑ O₂ requirements, or ↑ ventilation demand)

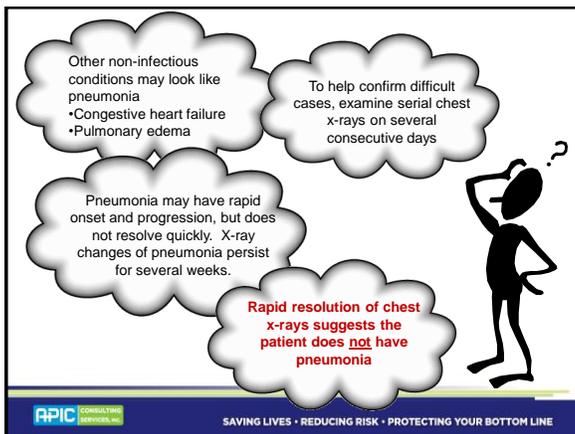
= PNU1



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PNU1 – Clinically-defined Pneumonia

ALTERNATE CRITERIA FOR INFANTS ≤1 YEAR OLD

X-Ray findings – exactly the same as for adults

Signs and Symptoms



Worsening gas exchange (e.g. O₂ desaturations, increased oxygen requirements, or increased ventilator demand)

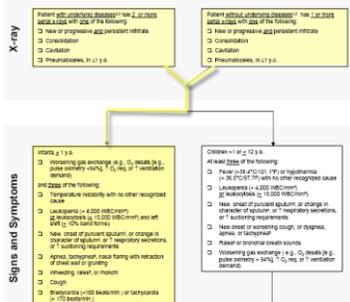
and at least **three** of the following:

- Temperature instability with no other recognized cause
- Leukopenia (<4000 WBC/mm³) or leukocytosis (≥15,000 WBC/mm³) and left shift (≥10% band forms)
- New onset of purulent sputum or change in character of sputum, or increased respiratory secretions or increased suctioning requirements
- Apnea, tachypnea nasal flaring with retraction of chest wall or grunting
- Wheezing, rales, or rhonchi
- Cough
- Bradycardia (<100 beats/min) or tachycardia (>170 beats/min)



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PNEUMONIA FLOW DIAGRAM ALTERNATE CRITERIA FOR INFANTS AND CHILDREN



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PNU1 – Clinically-defined Pneumonia

ALTERNATE CRITERIA FOR CHILDREN >1 OR ≤12 YRS. OLD

X-Ray findings – exactly the same as for adults

Signs and Symptoms

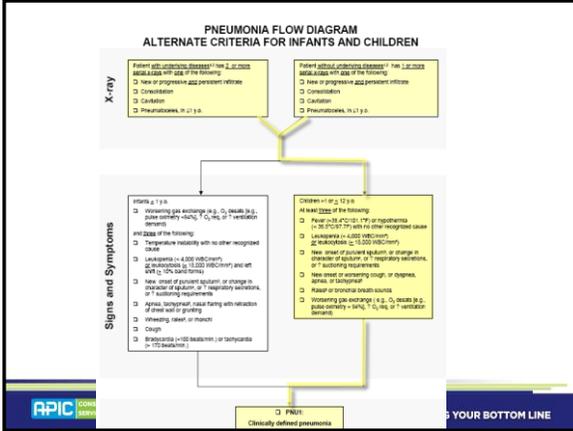


At least **three** of the following:

- Fever (>38.4°C or >101.1°F) or hypothermia (<36.5°C or <97.7°F) with no other recognized cause
- Leukopenia (<4000 WBC/mm³) or leukocytosis (≥15,000 WBC/mm³)
- New onset of purulent sputum, or change in character of sputum, or increased respiratory secretions, or increased suctioning requirements
- New onset or worsening cough, or dyspnea, apnea, or tachypnea.
- Rales or bronchial breath sounds.
- Worsening gas exchange (e.g. O₂ desaturations, increased oxygen requirements, or increased ventilator demand)



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PNU2 – Pneumonia with specific laboratory findings

X-Ray findings (exactly the same as PNU1)

Patient with underlying disease has **2 or more serial x-rays** with one of the following:

- New or progressive and persistent infiltrate
- Consolidation
- Cavitation
- Pneumatoceles, in <1 y.o.

or

Patient without underlying disease has **one or more serial x-rays** with one of the following:

- New or progressive and persistent infiltrate
- Consolidation
- Cavitation
- Pneumatoceles, in <1 y.o.

and

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PNU2 – Pneumonia with specific laboratory findings

Signs and Symptoms



At least **one** of the following:

- Fever ($> 38^\circ C / 100.4^\circ F$) with no other cause
- Leukopenia ($< 4,000$ WBC/mm³ or leukocytosis ($\geq 12,000$ WBC/mm³)
- Altered mental status with no other cause, in ≥ 70 y.o.

and

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PNU2 – Pneumonia with specific laboratory findings

Signs and Symptoms

At least **one** of the following:

- New onset of purulent sputum or change in character of sputum or ↑ respiratory secretions, or increased suctioning requirements
- New onset or worsening cough, or dyspnea or tachypnea
- Rales or bronchial breath sounds
- Worsening gas exchange

Rales may be described as "crackles"



and



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PNU2 – Pneumonia with specific laboratory findings

Laboratory Criteria

Bacterial or Filamentous Fungal Pathogens

At least **one** of the following:

- Positive growth in blood culture not related to another source of infection
- Positive growth in culture of pleural fluid
- Positive quantitative culture from minimally contaminated LRT specimen (e.g., BAL or protected specimen brushing)
- ≥5% BAL-obtained cells contain intracellular bacteria on direct microscopic exam (e.g., Gram stain)

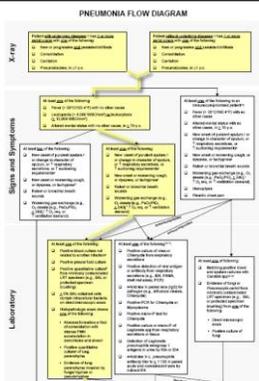
In an immunocompetent patient, blood cultures positive for coag neg staph, common skin contaminants, and yeasts are not the agent of pneumonia

- Evidence of lung parenchyma invasion by fungal hyphae or pseudohyphae



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Pneumonia 2 Specific laboratory findings



March 11-12, 2009



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PNU2 – Pneumonia with specific laboratory findings

Laboratory Criteria Viral, Legionella, and other Bacterial Pneumonias

At least **one** of the following:

- Positive culture of virus or *Chlamydia* from respiratory secretions
- Positive detection of viral antigen or antibody from respiratory secretions (e.g., EIA, FAMA, shell vial assay, PCR)
- Fourfold rise in paired sera (IgG) for pathogen (e.g., influenza viruses, *Chlamydia*)
- Positive PCR for *Chlamydia* or *Mycoplasma*
- Positive micro-IF test for *Chlamydia*

- Positive culture or visualization by micro-IF of *Legionella* spp. from respiratory secretions or tissue
- Detection of *Legionella pneumophila* serogroup 1 antigens in urine by RIA or EIA
- Fourfold rise in *L. pneumophila* serogroup 1 antibody titer to $\geq 1:128$ in paired acute and convalescent sera by indirect IFA

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PNU2 Viral and fungal pathogens

March 11-12, 2009

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PNU3 – Pneumonia in Immunocompromised Patient

X-Ray findings (exactly the same as PNU1 and PNU2)

Patient with underlying disease has **2 or more serial x-rays** with one of the following:

- New or progressive and persistent infiltrate
- Consolidation
- Cavitation
- Pneumatocoles, in <1 y.o.

OR

Patient without underlying disease has **one or more serial x-rays** with one of the following:

- New or progressive and persistent infiltrate
- Consolidation
- Cavitation
- Pneumatocoles, in <1 y.o.

and

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PNU3 – Pneumonia in Immunocompromised Patient

Signs and Symptoms

- Patient who is immunocompromised has at least **one** of the following:
- Fever (>38°C or >100.4°F) with no other recognized cause
 - For adults ≥70 years old, altered mental status with no other recognized cause
 - New onset of purulent sputum or change in character of sputum, or increased respiratory secretions, or increased suctioning requirements
 - New onset or worsening cough, or dyspnea, or tachypnea
 - Rales or bronchial breath sounds
 - **Worsening gas exchange**
 - Hemoptysis
 - Pleuritic chest pain



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PNU3 – Pneumonia in Immunocompromised Patient

Laboratory Criteria

- At least **one** of the following:
- Matching positive blood and sputum cultures with *Candida* spp.
 - Evidence of fungi or *Pneumocystis carinii* from minimally contaminated LRT specimen (e.g., BAL or protected specimen brushing) from one of the following:
 - Direct microscopic exam
 - Positive culture of fungi
 - **Any Laboratory Criteria from PNU2**

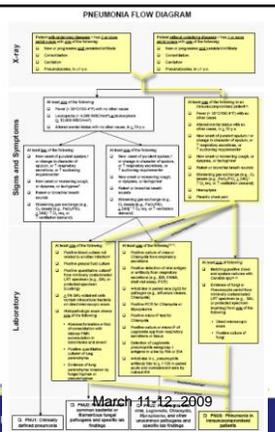
Blood and sputum specimens must be collected within 48 hours of each other

Sputum obtained by deep cough, induction, aspiration, or lavage are acceptable



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PNU3 Immuno-compromised patient



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Definition: Immunocompromised Patient

- **Patients with:**
 - Neutropenia – absolute neutrophil count <500/mm³
 - Leukemia
 - Lymphoma
 - HIV with CD4 count <200
 - Splenectomy
- **Patients who are:**
 - Early post-transplant
 - On cytotoxic chemotherapy
 - On high dose steroids
 - >40 mg prednisone or its equivalent daily for >2 weeks



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Definition: Tachypnea

Adults	>25 breaths per minute (bpm)
Premature Infants (<37 – 40 wks gestation)	>75 bpm
Infants <2 months old	>60 bpm
Infants 2-12 months old	>50 bpm
Children >1 year old	>30 bpm



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Comments: Sputum

Purulent sputum is defined as secretions from lungs, bronchi, or trachea that contain ≥25 neutrophils and ≤10 squamous epithelial cells

Change in character of sputum refers to the color, consistency, odor, and quantity

A **single notation** of purulent sputum or change in character of sputum, is not meaningful.



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Other Considerations

Physician diagnosis of pneumonia alone is not an acceptable criterion for pneumonia



Although specific pneumonia criteria are identified for infants and children, any of the pneumonia criteria can be used for pediatric patients



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Important Note!

Aspiration pneumonia is considered healthcare-associated if the aspiration occurred during intubation and the criteria for pneumonia are met.



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Specimen Collection in Pneumonia

An **endotracheal aspirate** is not a minimally contaminated specimen. An endotracheal aspirate does not meet the laboratory criteria

Specimen collection/technique	Values
Lung parenchyma	$\geq 10^4$ cfu/ml
Bronchoscopically (B) obtained specimens	
Bronchoalveolar lavage (B-BAL)	$\geq 10^4$ cfu/ml
Protected BAL (B-PBAL)	$\geq 10^4$ cfu/ml
Protected specimen brushing (B-PSB)	$\geq 10^3$ cfu/ml
Nonbronchoscopically (NB) obtained (blind) specimens	
NB-BAL	$\geq 10^4$ cfu/ml
NB-PSB	$\geq 10^3$ cfu/ml



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QUESTIONS?



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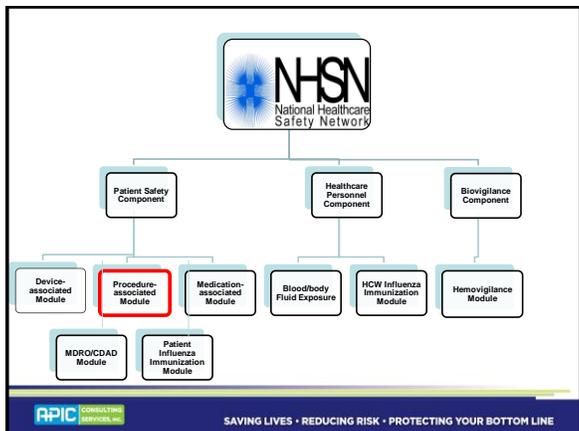


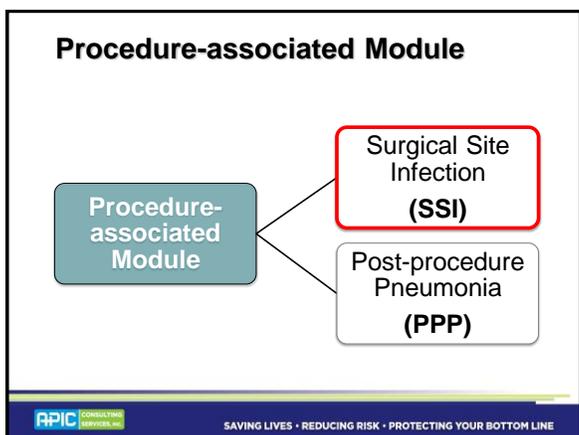
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Surgical Site Infections in NHSN



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Terms and Definitions



- The data you report must use exactly the same terms and definitions
 - NHSN Inpatient
 - NHSN Outpatient
 - NHSN Operative Procedure
 - Operating Room

Additional terms will be added as we specifically discuss SSI

The footer includes the APIC logo and the slogan 'SAVING LIVES • REDUCING RISK • PROTECTING YOUR BOTTOM LINE'.

Definition: NHSN Inpatient

A patient whose date of admission to the healthcare facility and the date of discharge are *different* calendar days.



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Definition: NHSN Outpatient

A patient whose date of admission to the healthcare facility and the date of discharge are the *same* day



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Definition: NHSN Operative Procedure

- A procedure that
1. is performed on a patient who is an **NHSN inpatient** or an **NHSN outpatient**
 2. takes place during an operation where a surgeon makes a skin or mucous membrane incision (including the laparoscopic approach) and primarily closes the incision before the patient leaves the **operating room**
 3. is represented by an **NHSN Operative Procedure Code**



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Definition: Operating Room

- A patient care area that meets the Facilities Guidelines Institute criteria for an operating room*
- May include:
 - Traditional operating room
 - C-section room
 - Interventional radiology room
 - Cardiac cath lab



*Guidelines for design and construction of health care facilities. Formerly the American Institute of Architects.



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NHSN Operative Procedure (cont.)

- If the skin incision edges do not meet because of wires or devices or other objects extruding through the incision, the incision is not considered primarily closed and therefore the procedure is not considered an operation.
- Any subsequent infection is not considered a procedure-associated infection (e.g., SSI)



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NHSN Operative Procedure Codes

Each NHSN operative procedure category is defined by a group of ICD-9-CM codes

Page 9-3

Category	Procedure	ICD-9-CM Codes	CPT Codes
CHOL	Gallbladder surgery	Cholecystectomy and cholecystotomy	51.03, 51.04, 51.13, 51.21-51.24, 47480, 47562, 47563, 47564, 47600, 47605, 47610, 47612, 47620
COLO	Colon surgery	Incision, excision, bowel anastomoses not include rectal anastomoses	17.31-17.36, 17.39, 45.03, 45.26, 45.41, 45.49, 45.52, 45.71-45.76, 45.79, 45.81-45.83, 45.92-45.95, 46.03, 46.04, 46.10, 46.11, 46.13, 46.14, 46.43, 46.52, 46.75, 46.76, 46.94
CRAN	Craniotomy	Excision, repair, or exploration of the brain or	44140, 44141, 44143, 44144, 44145, 44146, 44147, 44150, 44151, 44160, 44204, 44205, 44206, 44207, 44208, 44210
			01.12, 01.14, 01.20-01.25, 01.28, 01.29, 01.31, 01.32, 01.39, 01.41



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NHSN Operative Procedures

When an NHSN Operative Procedure is selected for monitoring, all the procedures within that category must be followed

Procedure Code	ICD-9-CM Code	Procedure Name	ICD-9-CM Code	Procedure Code
KPRO	2124-6	Knee prosthesis	Arthroplasty of knee	00.80-00.84, 81.54, 81.55
KTP	2123-8	Kidney transplant	Transplantation of kidney	55.61, 55.69



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Important Note

- Some operative procedures have more than one incision
 - Example: CBGB in which an incision to harvest a donor vessel is made that is separate from the primary incision
- Record these procedures only one time – there is no separate procedure code for the donor harvest site.



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CBGC -- Coronary artery bypass graft with only a chest incision (mammary donor site)

CBGB – Coronary artery bypass graft with two incisions – chest incision and donor site (usually leg)



These procedures are mutually exclusive for a single trip to the OR.
A patient can never have both!



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Monthly Reporting Plan – Procedures

First, decide which procedures to monitor

If you monitor SSI, choose whether to monitor **inpatients, outpatients, or both**

If you monitor PPP, you can only select inpatient procedures

Procedures	SSI (Circle one setting)	Post-procedure PNEU (Circle)
KPRO	<input type="radio"/> In <input type="radio"/> Out <input type="radio"/> Both	<input type="radio"/> In
HPRO	<input type="radio"/> In <input type="radio"/> Out <input type="radio"/> Both	<input type="radio"/> In
COLO	<input type="radio"/> In <input type="radio"/> Out <input type="radio"/> Both	<input type="radio"/> In
HYST	<input type="radio"/> In <input type="radio"/> Out <input type="radio"/> Both	<input type="radio"/> In
WHYS	<input type="radio"/> In <input type="radio"/> Out <input type="radio"/> Both	<input type="radio"/> In
CBGB	<input type="radio"/> In <input type="radio"/> Out <input type="radio"/> Both	<input type="radio"/> In
CBGC	<input type="radio"/> In <input type="radio"/> Out <input type="radio"/> Both	<input type="radio"/> In
AAA	<input type="radio"/> In <input type="radio"/> Out <input type="radio"/> Both	<input type="radio"/> In

Denominator Data

Denominator for Procedure

Page 1 of 1

Facility ID: _____ Procedure #: _____ *required for billing

*Patient ID: _____ Social Security #: _____

Medicare #: _____

First: _____ Middle: _____

*Date of Birth: _____

Race (Specify): _____

*NHSN Procedure Code: _____

ICD-9-CM Procedure Code: _____

*Duration: _____ Hours _____ Minutes

*General Anesthesia: Yes No

*Emergency: Yes No

scope: Yes No

*Weight: _____ lbs/kg *Duration of Labor: _____ hours (circle one)

1. The reporting period is one month
2. Collect a procedure record for every procedure that was done during that month if it is in your Monthly Reporting plan

Denominator for Procedure

For example, if your Monthly Reporting Plan indicates that you'll monitor HYST procedures in July, and 43 HYST operations are done in July, then you should enter 43 separate procedure records into NHSN

Procedure-As: _____ module [HELP](#)

Procedures

COLO - Co... surgery

HYST - Abdominal hysterectomy

SSS

Post-procedure PNEU

Both - In and outpatient

IN - Inpatient

OUT - Outpatient

BOTH - In and outpatient

Additional Rules about Duration

- If the patient goes to the OR more than once during the same admission and another procedure is performed through the same incision within 24 hours of the original incision, report only one procedure, combining the durations for both operations

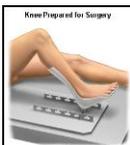
Example: Fred Smith had CBGC surgery performed on Tuesday morning which had a duration of 4 hours and 10 minutes. On Tuesday evening, he was returned to the OR where exploratory surgery was done through the same incision to repair a bleeding vessel. The surgical cut time was 2 hours and 10 minutes.

The duration for the CBGC procedure is reported as 6 hours and 20 minutes



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Additional Rules about Duration – Bilateral Procedures



- For bilateral operative procedures, two separate *Denominator for Procedure* forms/screens are completed.

- To document the duration of the procedure, indicate the incision time to closure for each procedure separately or, alternatively, take the total time for both procedures and split it evenly between the two.



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Denominator for Procedure – Wound Class

NHSN Denominator for Procedure		OMB No. 0920-0062 Exp. Date 10-29-2008
Facility ID: 40000	Procedure #: 123456	** required for saving
*Patient ID: ff-1111	Social Security #:	
Secondary ID:		
Patient Name, Last: Dough	First: Douglas	Middle: B
*Gender: F (M)	*Date of Birth: 10/18/1975	
Event Type: PROC	*Date of Procedure: 08/13/2008	
*NHSN Procedure Code: AAA	ICD-9-CM Code: 38.44	
Procedure Details		
*Outpatient: Yes (No)	*Duration: 4 Hours 12 Minutes	*General Anesthesia: (Yes) No
*Wound Class: C CC CO D U		
*ASA Class: 1 2 3 4 5		
*Trauma Surgeon: Yes (No)		
C = Clean		
CC = Clean Contaminated		
CO = Contaminated		
D = Dirty		
U = Unknown		

Wound class is an assessment of the likelihood and degree of contamination of a surgical wound at the time of the operation



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Wound Class

Clean

- Uninfected wound with no inflammation
- Respiratory, alimentary, genital or uninfected urinary tract are not entered
- Primarily closed
- Closed drainage, if needed

Clean-Contaminated

- Respiratory, alimentary, genital, or urinary tracts entered under controlled conditions and without unusual contamination
- Include operations on biliary tract, appendix, vagina, oropharynx if no evidence of infection or major break in technique



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Wound Class

Contaminated

- Open, fresh, accidental wounds
- Major breaks in sterile technique or gross spillage from the GI tract
- Includes incisions into acute, nonpurulent inflamed tissues

Dirty

- Old traumatic wounds with retained devitalized tissue
- Wounds involving existing clinical infection or perforated viscera



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Wound Class Cases

Case	Wound Class
Susanne undergoes an appendectomy following 2 days of acute abdominal pain with rebound tenderness. At the end of the case, the surgeon indicates that the appendix had ruptured and the surgical area was irrigated and Keflex was ordered for 3 days postoperatively.	3
Fred has a KPRO procedure. The operation was completed successfully with no breaks in operative asepsis.	1
George has a KPRO revision. When the surgeon makes the incision into the surgical site, she notes that the knee joint demonstrates purulent matter and inflammation. A specimen is obtained and sent to the laboratory which grows <i>S. aureus</i> (MSSA).	4



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Denominator for Procedure – General Anesthesia

NHSN OMB No. 0920-0666
Exp. Date: 01-31-2015
www.cdc.gov/nhsn

Denominator for Procedure *required for saving

Procedure # _____
Social Security # _____
Medicare # _____
First _____ Middle _____
*Date of Birth: _____
Race (Specify): _____
*NHSN Procedure Code: _____
ICD-9-CM Procedure Code: _____
*Duration: 2 Hours 16 Minutes
*General Anesthesia: No
*Emergency: Yes No
Yes No
*Implant: Yes No
C/SEC: _____
*Height: _____ feet _____ inches *Weight: _____ lbs/kg *Duration of Labor: _____ hours
(choose one) (choose one) (circle one)

General Anesthesia:
The administration of drugs or gases that enter the general circulation and affect the central nervous system to render the patient pain-free, amnesic, unconscious, and often paralyzed with relaxed muscles

ASA Class: An assessment score by the anesthesiologist of the patient's preoperative physical condition using the American Society of Anesthesiologists Classification of Physical Status schema

Denominator for Procedure – ASA Class

NHSN OMB No. 0920-0666
Exp. Date: 01-31-2015
www.cdc.gov/nhsn

Denominator for Procedure *required for saving

Page 1 of 1

Facility ID _____ Procedure # _____
*Patient ID: _____ Social Sec# _____
Secondary ID: _____ Medicare # _____
Patient Name, Last: _____ First: _____
*Gender: F M Other _____ *Date of Birth: _____
Ethnicity (Specify): _____ Race (Specify): _____
Event Type: PROC _____ *NHSN Proc Code: _____
*Date of Procedure: _____ ICD-9-CM # _____

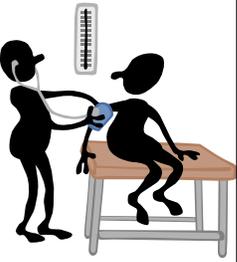
Procedure Details

*Outpatient: Yes No
*Wound Class: C CC CD D U
ASA Score: 1 2 3 4 5
*Trauma: Yes No _____ *Endoscope: Yes No _____
Surgeon Code: _____
*Implant: Yes No _____
C/SEC: _____
*Height: _____ feet _____ inches *Weight: _____ lbs/kg *Duration of Labor: _____ hours
(choose one) (choose one) (circle one)

ASA Class: An assessment score by the anesthesiologist of the patient's preoperative physical condition using the American Society of Anesthesiologists Classification of Physical Status schema

ASA Class

1. Normally healthy patient
2. Patient with mild systemic disease
3. Patient with severe systemic disease that is not incapacitating
4. Patient with an incapacitating systemic disease that is a constant threat to life
5. Moribund patient who is not expected to survive for 24 hours with or without operation



Denominator for Procedure - Endoscope

Endoscope: Required
If the entire NHSN operative procedure was performed using a laparoscope, select **Yes**

Exception: For CBGB operations, if the donor vessel was harvested using the laparoscope, select **Yes**

Denominator for Procedure

Procedure # _____ *required for surgery
 Social Security # _____
 Medicare # _____
 First _____ Middle _____
 *Date of Birth: _____
 *Race (Specify) _____
 *NHSN Procedure Code: _____
 ICD-9-CM Procedure Code: _____

*Outpatient: Yes No
 *Wound Class: C CC CO D U
 ASA Score: 1 2 3 4 5
 *Trauma: Yes No
 Surgeon Code: 123
 *Implant: Yes No
 CSEC: _____
 *Height: _____ feet _____ inches *Weight: _____ lbs/kg
 *Duration: 2 _____ Hours 16 _____ Minutes
 *General Anesthesia: Yes No
 *Emergency: Yes No

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Use of Laparoscope in Hysterectomy

- Classification based on route of uterine removal is rescinded!
- The focus should be on the surgical technique or approach used for the detachment of the uterine structures.
- Code assignment should not be based on the location where the structures were physically removed from the patient's body

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IMPLANT

Implant: A nonhuman-derived object, material, or tissue that is permanently placed in a patient during an operative procedure and is not routinely manipulated for diagnostic or therapeutic purposes. Examples include: porcine or synthetic heart valves, mechanical heart, metal rods, mesh, sternal wires, screws, cements, **internal staples, hemoclips** and other devices.

Non-absorbable sutures are excluded because IPs may not easily identify or differentiate the soluble nature of the suture material.

Procedure Details

*Outpatient: Yes No
 *Wound Class: C CC CO D U
 ASA Score: 1 2 3 4 5
 *Trauma: Yes No
 Surgeon Code: 123
 *Implant: Yes No
 CSEC: _____
 *Height: _____ feet _____ inches *Weight: _____ lbs/kg *Duration of Labor: _____ hours
 *Duration: 2 _____ Hours 16 _____ Minutes
 *General Anesthesia: Yes No
 *Emergency: Yes No

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Denominator for Procedure - Summary

- Complete a *Denominator for Procedure* form for every procedure that is selected for surveillance.
- Alternatively, procedure records can be imported



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QUESTIONS?



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SURGICAL SITE INFECTION - SSI

Vol. 20, No. 4 INFECTION CONTROL AND HOSPITAL EPIDEMIOLOGY 247

GUIDELINE FOR PREVENTION OF SURGICAL SITE INFECTION, 1999

Alicia J. Mangram, MD; Teresa C. Horan, MPH, CIC; Michele L. Pearson, MD; Leah Christine Silver, BS; William R. Jarvis, MD; The Hospital Infection Control Practices Advisory Committee

Hospital Infections Program
 National Center for Infectious Diseases
 Centers for Disease Control and Prevention
 Public Health Service
 US Department of Health and Human Services

Introduction



- Estimated 20% of all HAIs are SSIs
- Each SSI is associated with approximately 7-10 additional postoperative hospital days
- Attributable cost estimates of SSI range from \$3,000 - \$29,000 each



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Case Finding - SSI Surveillance

- Review of patient and laboratory records during the patient admission
- Review of surgical patient readmissions
- Microbiology data from postoperative wound cultures



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SSI Post-discharge Surveillance

Post-discharge surveillance methods may also include:

- Examination of patient surgical site during follow-up visits to physician office or surgery clinic
- Surgeon surveys by mail or phone
- Review of medical records for postoperative visits



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Superficial Incisional SSI

A superficial incisional SSI (SIP or SIS) must meet the following criterion:

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. at least one of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat, and superficial incision is deliberately opened by surgeon, and is culture-positive or not cultured. A culture-negative finding does not meet this criterion.
- d. diagnosis of superficial Incisional SSI by the surgeon or attending physician.



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SIP and SIS

Superficial incisional primary (SIP)

A superficial incisional SSI that is identified in the primary incision in a patient that has had an operation with one or more incisions (e.g., KPRO incision or chest incision for coronary artery bypass graft with a donor site [CBGB])

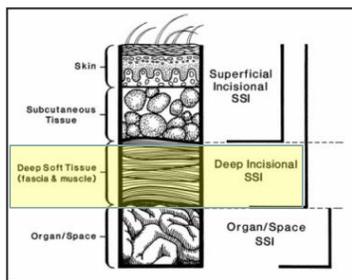
Superficial incisional secondary (SIS)

A superficial incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site [leg] incision for coronary artery bypass graft with a donor site [CBGB])



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SSI Definitions



Horan TC, Gaynes RP, Martone WJ, Jarvis WR, Emori TG. CDC definitions of nosocomial surgical site infections, 1992: a modification of CDC definitions of surgical wound infections. *Infect Control Hosp Epidemiol* 1992;13(10):606-8.



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Deep Incisional SSI

A deep incisional SSI (DIP or DIS) must meet the following criterion:

Infection occurs within 30 days after the operative procedure if no implant is left in place or within one year if implant is in place and the infection appears to be related to the operative procedure

and

involves deep soft tissues (e.g., fascial and muscle layers) of the incision

and

patient has at least one of the following:

- purulent drainage from the deep incision but not from the organ/space component of the surgical site
- a deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture-positive or not cultured when the patient has at least one of the following signs or symptoms: fever (>38°C), or localized pain or tenderness. A culture-negative finding does not meet this criterion.
- an abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination
- diagnosis of a deep incisional SSI by a surgeon or attending physician.



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DIP and DIS

Deep incisional primary (DIP)

A deep incisional SSI that is identified in the primary incision in a patient that has had an operation with one or more incisions (e.g., C-section incision or chest incision for coronary artery bypass graft with a donor site [CBGB])

Deep incisional secondary (DIS)

A deep incisional SSI that is identified in the secondary incision in a patient that has had an operation with more than one incision (e.g., donor site [leg] incision for coronary artery bypass graft with a donor site [CBGB])



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Example



Charles has purulent drainage from the muscle tissue of the anterior incision following a spinal fusion (FUSN) in which both anterior and posterior incisions were made. He also has redness and induration around the posterior wound. The doctor opens and drains the skin incision on his back. No culture is done for either site.

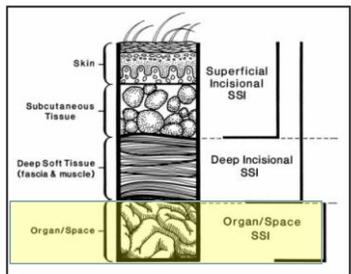
How should this be reported to NHSN?

- DIP
- SIS
- Both
- Neither



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SSI Definitions



Horan TC, Gaynes RP, Martone WJ, Jarvis WR, Emori TG. CDC definitions of nosocomial surgical site infections, 1992: a modification of CDC definitions of surgical wound infections. *Infect Control Hosp Epidemiol* 1992;13(10):606-8.

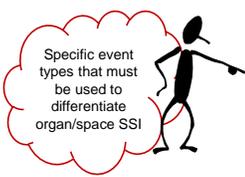


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Organ/Space SSI

Page 9-9

An organ/space SSI involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure. Specific sites are assigned to organ/space SSI to further identify the location of the infection.



BONE	Osteomyelitis	JNT	Joint or bursa
BRST	Breast abscess/mastitis	LUNG	Other infections of respiratory tract
CARD	Myocarditis/pericarditis	MED	Mediastinitis
DISC	Disc space	ORAL	Oral cavity
EAR	Ear, mastoid	OREP	Other respiratory
EMET	Endometritis	OUTI	Other urinary
ENDO	Endocarditis	SA	Spinal abscess
EYE	Eye, other than conjunctivitis	SINU	Sinusitis
GIT	GI tract	UR	Upper respiratory
IAB	Intraabdominal, NOS	VASC	Arterial or venous
IC	Intracranial	VCUF	Vaginal cuff



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Organ/Space SSI

An organ/space SSI must meet the following criterion:

Infection occurs within 30 days after the operative procedure if no implant is left in place or within one year if implant is in place and the infection appears to be related to 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:

- purulent drainage from a drain that is placed through a stab wound into the organ/space
- organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space
- an abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination
- diagnosis of an organ/space SSI by a surgeon or attending physician.



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When a patient with an SSI has had more than one operation...



If a patient has several NHSN operations prior to an SSI, report the operation that was performed most closely in time to the infection date

Example: Mr. Smith underwent a knee replacement procedure (KPRO) on 2/12/10. Three days later, he went back to surgery to drain a hematoma (OTH). He developed a joint space abscess on 4/18/10. This SSI is attributed to the second procedure (OTH), not the KPRO



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If more than one operation is done through a single incision...

First, attempt to determine the procedure that is thought to be associated with the infection.

Example: If the patient had a CBGC and CARD done at the same time and develops a vegetative valve, then the SSI will be linked to the CARD

Then, if it's not clear or if the infection site being reported is not an SSI, use the NHSN Principle Operative Procedure Selection List to select which operative procedure to report.



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Table 3. NHSN Principal Operative Procedure Selection Lists

The following lists are derived from Table 1, NHSN Operative Procedure Categories. The operative procedures with the highest risk of surgical site infection are listed before those with a lower risk.

Priority	Code	Abdominal Operations
1	SB	Small bowel surgery
2	KTP	Kidney transplant
3	LTP	Liver transplant
4	BILI	Bile duct, liver or pancreatic surgery
5	REC	Rectal surgery
6	COLO	Colon surgery
7	GAST	Gastric surgery

Priority	Code	Thoracic Operations
1	HTP	Heart transplant
2	CBGB	Coronary artery bypass graft with donor incision(s)
3	CBGC	Coronary artery bypass graft, chest incision only
4	CARD	Cardiac surgery
5	THOR	Thoracic surgery

Priority	Code	Neurosurgical (Spine) Operations
1	RFUSN	Refusion of spine
2	FUSN	Spinal fusion
3	LAM	Laminectomy



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SSI – Basic SSI Information

*Event Type: SSI	*Date of Event: 4/14/2011
*NHSN Procedure Code: HYST	ICD-9-CM Procedure Code: 68.41
*Date of Procedure: 4/06/2011	*Outpatient Procedure: Yes (No)
*MDRO Infection Surveillance:	
<input type="checkbox"/> Yes, this infection's pathogen & location are in-plan for Infection Surveillance in the MDRO/CDI Module <input type="checkbox"/> No, this infection's pathogen & location are not in-plan for Infection Surveillance in the MDRO/CDI Module	
*Date Admitted to Facility	Location

Enter the date of the operation

If this patient was admitted and discharged in the same calendar day, select Yes.

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SSI Form -- Basic SSI Information

Enter "Yes", if the pathogen is being followed for Infection Surveillance in the MDRO/CDI Module in that location as part of your Monthly Reporting Plan

*Date of Procedure: 4/06/2011	*Outpatient Procedure: Yes No
*MDRO Infection Surveillance:	
<input type="checkbox"/> Yes, this infection's pathogen & location are in-plan for Infection Surveillance in the MDRO/CDI Module <input checked="" type="checkbox"/> No, this infection's pathogen & location are not in-plan for Infection Surveillance in the MDRO/CDI Module	
*Date Admitted to Facility	Location

If the pathogen for this infection happens to be an MDRO but your facility is not following the Infection Surveillance in the MDRO/CDI Module in your Monthly Reporting Plan, answer "No" to this question.

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SSI Form – Basic SSI Information

Enter the date the patient was admitted to the hospital when the operation was performed and the location where the patient was housed after leaving the OR /PACU

*Event Type: SSI	*Date of Event: 4/14/2011
*NHSN Procedure Code: HYST	ICD-9-CM Procedure Code: 68.41
*Date of Procedure: 4/06/2011	*Outpatient Procedure: Yes (No)
*MDRO Infection Surveillance:	
<input type="checkbox"/> Yes, this infection's pathogen & location are in-plan for Infection Surveillance in the MDRO/CDI Module <input type="checkbox"/> No, this infection's pathogen & location are not in-plan for Infection Surveillance in the MDRO/CDI Module	
*Date Admitted to Facility: 4/14/2011	Location: MS Ward

Note: Location is an optional field!

Note: this is **never** a location associated with a readmission or a place where the patient may be after discharge (e.g., nursing home)

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SSI – Event Details

Detected:
Check the box to indicate when/how the SSI was identified

A	During admission when surgery was performed
P	Post-discharge surveillance
RF	Readmission to facility where procedure was performed
RO	Readmission to a different facility

*Detected: A (During admission) P (Post-discharge surveillance) R (Readmission to facility where procedure was performed)
 RO (Readmission to facility other than where procedure was performed)

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SSI – Event Details

*Detected: A (During admission) P (Post-discharge surveillance) R (Readmission)

Secondary Bloodstream Infection: Yes No

*Died: Yes No SSI Contributed to Death: Yes No
 *Pathogens Identified: Yes No *If Yes, specify on page 2

Discharge Date: _____

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Secondary BSI:
If the patient had a culture-confirmed bloodstream infection with a documented SSI, circle **Yes**.

Secondary BSI

A culture-confirmed BSI associated with a documented HAI at another site

Cultured primary site

Not cultured primary site

If the primary infection is cultured, the Secondary BSI must yield culture of the same organism and exhibit the same antibiogram as the primary HAI site

If a culture is **not** used to meet the criteria for a primary HAI, and the blood culture grows an appropriate organism, the BSI is secondary and the organism grown is reported for the primary HAI

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SSI Rate

$$\text{SSI Rate} = \frac{\text{\# SSIs in patients during specified time}}{\text{\# operations during specified time}} \times 100$$

- * Stratify by:
- Type of NHSN operative procedure
 - Basic NHSN Risk Index

SSI Rates have been moved to the "Advanced" section of the output options. Note that, while these options are available, you will only be able to obtain your facility's SSI rates

Comparison to the previously-published NHSN pooled means will no longer be available



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2008 NHSH Report – SSI Rates

Table 22. Continued

Procedure code	Operative procedure	Duration (days)	No. of procedures	No. of SSI	Pooled mean
FX	Open reduction of fracture	2.1	3376	57	1.69
FX	Open reduction of fracture	2.3	714	19	2.66
GAST	Gastric surgery	0.11	3807	70	1.84
GAST	Gastric surgery	2.3	1090	53	4.86
HER	Hemorrhaphy	0	1182	12	1.02
HER	Hemorrhaphy	1	1499	37	2.47
HER	Hemorrhaphy	2.3	596	26	4.36
HPRO	Hip prosthesis		17,521	131	0.75
HPRO	Hip prosthesis		22,681	380	1.68
HPRO	Hip prosthesis		5,492	163	2.97
HYST	Abdominal hysterectomy	1.38	13,529	152	1.12
HYST	Abdominal hysterectomy	1.38	4,422	155	2.41
HYST	Abdominal hysterectomy	1.38	1,119	62	4.37
KPRO	Knee prosthesis	1.22	8,244	198	0.68
KPRO	Knee prosthesis	1.22	31,979	359	1.12
KPRO	Knee prosthesis	1.22	7,955	145	1.82
KAH	Knee arthroscopy		1,411	96	1.82



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Standardized Infection Ratio (SIR)

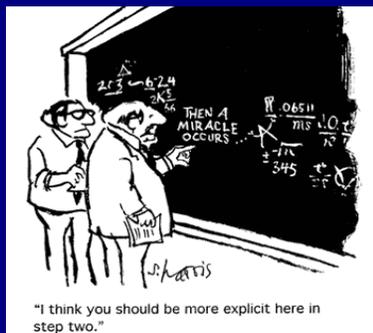
- The new SSI SIRs use risk adjustment calculated through logistic regression modeling
- Allows for all available risk factors to be considered
- Each risk factor's "weight" will vary according to its significant contribution to the risk for that SSI
- For all NHSN procedures, the models predicted SSI risk better than the basic risk index



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Predictive Risk Factors

NHSN Operative Procedure	Risk Factor(s) – All SSIs
AAA	Duration
CBGB/C	Age, ASA, duration, gender, number of beds*
COLO	Age, anesthesia, ASA, duration, endoscope, medical school affiliation*, number of beds*, wound class
FUSN	Approach, ASA, diabetes, duration, medical school affiliation*, spinal level, trauma, wound class
HPRO	Age, anesthesia, ASA, duration, HPRO type, number of beds* trauma
HYST	Age, anesthesia, ASA, duration, endoscope, number of beds*
KPRO	Age, anesthesia, ASA, duration, gender, KPRO type, number of beds*, trauma
LAM	Anesthesia, ASA, duration, endoscope
PVBY	Age, ASA, duration, gender, medical school affiliation*
RFUSN	Approach, diabetes, duration
VSHN	Age, medical school affiliation*, number of beds*, wound class



Calculation of "Expected Cases" based on all Risk Factors

Logistic Regression Model

Factor	Parameter Estimate	OR	p-value
Intercept	-5.448	-	-
Age (≤44 vs >44)	0.520	1.659	<0.0001
ASA (3/4/5 vs 1/2)	0.425	1.529	0.0415
Duration (>100 vs ≤100)	0.501	1.650	0.0019
Med school affiliation (Y vs N)	1.069	2.912	<0.0001

The model represented in this table is for teaching purposes only and should not be considered an actual model from which to calculate a patient's risk of SSI.

The parameter estimates above can be plugged into the following formula:

$$\text{logit}(\hat{p}) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4$$

$$= -5.448 + 0.520 (\text{Age} \leq 44^*) + 0.425 (\text{ASA } 3/4/5^*) + 0.501 (\text{Duration} > 100^*) + 1.069 (\text{Med school affiliation}^*)$$

*For these risk factors, if present = 1; if not = 0

Example: Overall SSI SIR

Org ID	Summary Yr	Procedure Count	All SSI Model Number Expected	All SSI Model SIR	All SSI Model SIR p-value	All SSI Model 95% Confidence Interval
10018	2009	524	6.687	1.94	0.0196	1.150, 3.091

- During 2009, there were 524 procedures performed and 13 SSIs identified.
- Based on the NHSN 2006-2008 baseline data, 6.687 SSIs were expected.
- This results in an SIR of 1.94 (13/6.687), signifying that during this time period our facility identified 94% more SSIs than expected.
- The p-value and 95% Confidence Interval indicate that the number of observed SSIs is significantly higher than the number of expected SSIs.



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QUESTIONS?



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C. difficile Lab ID Reporting in NHSN



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Goal of CDAD (CDI) Module

- **Monitoring *C. difficile* infection (CDI) will help to evaluate local trends and changes in the occurrence of these pathogens and related infections**
- **Provide a mechanism for facilities to report and analyze CDI data**

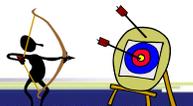
Note: The term CDI is replacing CDAD. Both terms represent the same illness and are used interchangeably.



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Introduction

- *C. difficile* infections are linked to 14,000 deaths in the US each year.
- Deaths related to *C. difficile* increased 400% between 2000 and 2007, due in part to a stronger germ strain.
- Most *C. difficile* infections are connected with receiving medical care.
- Almost half of infections occur in people younger than 65, but more than 90% of deaths occur in people 65 and older.



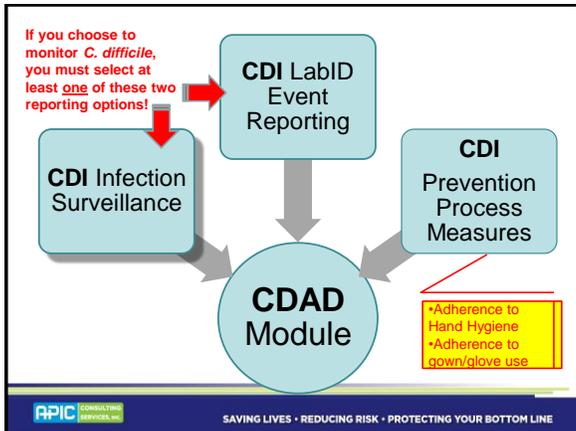
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Introduction

- About 25% of *C. difficile* infections first show symptoms in hospital patients; 75% first show in nursing home patients or in people recently cared for in doctors' offices and clinics.
- *C. difficile* infections can be prevented. Early results from hospital prevention projects show 20% fewer *C. difficile* infections in less than 2 years with infection prevention and control measures.



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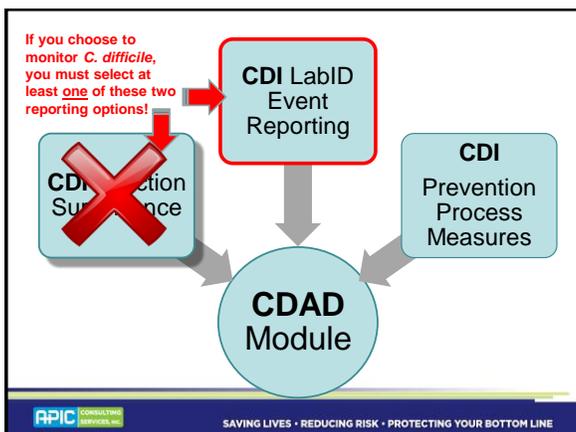
CDI Infection Surveillance

An HAI is a localized/systemic condition resulting from an adverse reaction to the presence of an infectious agent or its toxin.

There must be no evidence that the infection was present or incubating at the time of the hospital admission.

C. Difficile infections must meet NHSN-defined criteria for gastroenteritis or gastrointestinal tract infection

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CDI LabID Event Reporting

Allows laboratory testing data to be used *without* clinical evaluation of the patient, allowing for a much less labor intensive method to track *C. difficile*.



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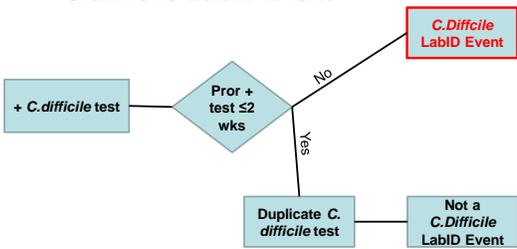
Definitions

- **Laboratory-Identified (LabID) Event:** Any non-duplicate CDI-positive lab assay.
- **CDI-positive Lab Assay:** Positive lab assay for *C. difficile* toxin A and/or B, or toxin-producing organism detected from stool culture or other lab means
- **Duplicate *C. difficile*-positive test:** CDI-positive assay from same patient within 2 weeks of previous positive assay.



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C.difficile LabID Event



```

    graph TD
      A["+ C.difficile test"] --> B{Pror + test ≤2 wks}
      B -- No --> C["C.Difficile LabID Event"]
      B -- Yes --> D["Duplicate C. difficile test"]
      D --> E["Not a C.Difficile LabID Event"]
    
```



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Required Minimum Reporting

- All non-duplicate CDI-positive lab assays per patient per month
- At least three consecutive months in a calendar year



C. difficile testing performed routinely in lab, only on unformed (conforming to the shape of the container) stool samples



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Test on unformed stool sample

Positive for *C. difficile*

Prior *C. difficile* positive in ≤ 2 weeks

Duplicate Test

Not a LabID Event

Not a LabID Event

Laboratory-identified MDRO or CDI Event

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Reporting Method

Reporting Choices	<i>C. difficile</i>	Method
Required		
Infection Surveillance ("Location Specific for ≥ 3 months") Choose ≥ 1 organism	A, B	
OR		
Proxy Infection Measures Laboratory-identified (LabID) Event ("Location Specific for ≥ 3 consecutive months") Choose ≥ 1 organism	A, B, C	
Optional		
Prevention Process Measures Options:		
Hand Hygiene Adherence	B	
Gown and Gloves Use Adherence	B	
Active Surveillance Testing (AST) Adherence	N/A	
AST Outcome Measures Incident and Prevalent Cases using AST	N/A	

CDI LabID Event Reporting

For CDI LabID Event reporting, use either:

- A – Facility-wide by location
- B -- Selected locations in the facility
- C – Facility-wide

Settings:

- 1) Inpatient locations
- 2) Outpatient locations – where care provided to patients post-discharge OR prior to admission

- No Newborn locations
- No outpatient dialysis centers



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A **NHSN Patient Safety Monthly Reporting Plan** CDI LabID Reporting

OMB No. 0938-0001 Page 2 of 2 Exp. Date 05-31-12

NRRO and CDI Module

+Locations (Circle one)

FacWideIn	FacWideOUT	Specific Organism Type	All specimens	†LabID Event	†LabID Event
FacWideIn	FacWideOUT	_____	<input type="checkbox"/>	<input type="checkbox"/>	Blood specimens only
FacWideIn	FacWideOUT	_____	<input type="checkbox"/>	<input type="checkbox"/>	
FacWideIn	FacWideOUT	_____	<input type="checkbox"/>	<input type="checkbox"/>	

Process and Outcome Measures

Locations	Specific Organism Type	Infection surveillance	†AST Timing	†AST Eligible	Inci- dence	Preva- lence	†Lab ID Event	HH	GG
SICU	C.difficile	<input type="checkbox"/>	Adm	All	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Med-Surg	C.difficile	<input type="checkbox"/>	Adm	All	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Both	NHx					
PEDS	C.difficile	<input type="checkbox"/>	Adm	All	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Both	NHx					
ORTHO	C.difficile	<input type="checkbox"/>	Adm	All	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Both	NHx					
IBSICU	C.difficile	<input type="checkbox"/>	Adm	All	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Both	NHx					

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B Reporting Infections: Selected Locations Only CDI LabID Reporting



SICU



Med-Surg



IBSICU



IPALLIUM



ORTHO



Medical

Report separately for one or more specific locations of a facility

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B **NHSN Patient Safety Monthly Reporting Plan** CDI LabID Reporting

OMB No. 0938-0001 Page 2 of 2 Exp. Date 05-31-12

NRRO and CDI Module

+Locations (Circle one)

FacWideIn	FacWideOUT	Specific Organism Type	All specimens	†LabID Event	†LabID Event
FacWideIn	FacWideOUT	_____	<input type="checkbox"/>	<input type="checkbox"/>	Blood specimens only
FacWideIn	FacWideOUT	_____	<input type="checkbox"/>	<input type="checkbox"/>	
FacWideIn	FacWideOUT	_____	<input type="checkbox"/>	<input type="checkbox"/>	

Process and Outcome Measures

Locations	Specific Organism Type	Infection surveillance	†AST Timing	†AST Eligible	Inci- dence	Preva- lence	†Lab ID Event	HH	GG
Medical	C.difficile	<input type="checkbox"/>	Adm	All	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Both	NHx					
Med-Surg	C.difficile	<input type="checkbox"/>	Adm	All	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Both	NHx					
		<input type="checkbox"/>	Adm	All	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Both	NHx					
		<input type="checkbox"/>	Adm	All	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Both	NHx					
		<input type="checkbox"/>	Adm	All	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			Both	NHx					

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CDI LabID Event Form

Laboratory-identified MDRO or CDI Event

*Required for saving

Facility ID: 40000 Event #:

*Patient ID: 212122

Secondary ID:

Patient Name, Last:

*Gender: M F

Ethnicity (Specify):

Event Details

*Event Type: LabID *Date Specimen Collected: 12/19/2011

*Specific Organism Type: (Check one)

MRSA MSSA VRE C. difficile

CephR-Klebsiella CRE-Ecoli CRE-Klebsiella MDR-Acinetobacter

*Outpatient: Yes No *Specimen Body Site/System: *Specimen Source: Liquid stool

*Date Admitted to Facility: 12/01/2011 *Location: MICU *Date Admitted to Location: 12/01/2011

*Has patient been discharged from your facility in the past 3 months? Yes No

If Yes, date of last discharge from your facility:

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CDI LabID Event Form

LabID or CDI Event

*Required for saving

Facility ID: 40000 Event #:

*Patient ID: 212122 Security #:

Secondary ID:

Patient Name, Last: Middle:

*Gender: M F Birth: 01/28/1965

Ethnicity (Specify): Race:

Event Details

*Event Type: LabID *Date Specimen Collected: 12/19/2011

*Specific Organism Type: (Check one)

MRSA MSSA VRE C. difficile

CephR-Klebsiella CRE-Ecoli CRE-Klebsiella MDR-Acinetobacter

*Outpatient: Yes No *Specimen Body Site/System: *Specimen Source: Liquid stool

*Date Admitted to Facility: 12/01/2011 *Location: MICU *Date Admitted to Location: 12/01/2011

*Has patient been discharged from your facility in the past 3 months? Yes No

If Yes, date of last discharge from your facility:

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CDI LabID Event Form

Laboratory-identified MDRO or CDI Event

*Required for saving

Facility ID: 40000 Event #:

*Patient ID: 212122

Secondary ID:

Patient Name, Last:

*Gender: M F

Ethnicity (Specify):

Event Details

*Event Type: LabID *Date Specimen Collected: 12/19/2011

*Specific Organism Type: (Check one)

MRSA MSSA VRE C. difficile

CephR-Klebsiella CRE-Ecoli CRE-Klebsiella MDR-Acinetobacter

*Outpatient: Yes No *Specimen Body Site/System: *Specimen Source: Liquid stool

*Date Admitted to Facility: 12/01/2011 *Location: MICU *Date Admitted to Location: 12/01/2011

*Has patient been discharged from your facility in the past 3 months? Yes No

If Yes, date of last discharge from your facility:

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NHSN MDRO and CDI Prevention Process and Outcome Measures Monthly Monitoring

Page 1 of 2

*required for saving **conditionally required based upon monitoring selection in Monthly Reporting Plan

Facility ID #: 40000 *Month: June *Year: 2011 *Location Code: ED

Setting: Inpatient **Total Patient Days: **Total Admissions:
 Setting: Outpatient (or Emergency Room) **Total Encounters: 844

If monitoring *C. difficile* in a FACWIDE location, then subtract NICU & Well Baby counts from Totals:
 **Patient Days: **Admissions: **Encounters:

Specific Organism Type	MDRO & CDI Infection Surveillance or LabID Event Reporting						
	MRSA	VRE	Coap- Klebsiella	CRE- Ecoi	CRE- Klebsiella	MDR- Acinetobacter	C. difficile
Infection Surveillance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LabID Event (All specimens)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LabID Event (Blood specimens only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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NHSN MDRO and CDI Prevention Process and Outcome Measures Monthly Monitoring

Page 1 of 2

*required for saving **conditionally required based upon monitoring selection in Monthly Reporting Plan

Facility ID #: 40000 *Month: June *Year: 2011 *Location Code: FacWideOUT

Setting: Inpatient **Total Patient Days: **Total Admissions:
 Setting: Outpatient (or Emergency Room) **Total Encounters: 1789

If monitoring *C. difficile* in a FACWIDE location, then subtract NICU & Well Baby counts from Totals:
 **Patient Days: **Admissions: **Encounters:

Specific Organism Type	MDRO & CDI Infection Surveillance or LabID Event Reporting						
	MRSA	VRE	Coap- Klebsiella	CRE- Ecoi	CRE- Klebsiella	MDR- Acinetobacter	C. difficile
Infection Surveillance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LabID Event (All specimens)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LabID Event (Blood specimens only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

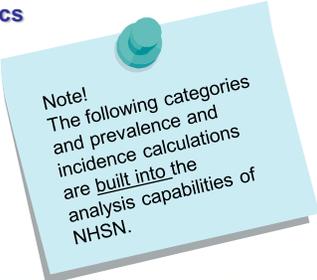
If LabID *C. difficile* Events are being monitored at the FacWideOUT level, then Total Encounters minus any encounters for Well Baby Clinics must be entered here

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QUESTIONS?

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CDI Metrics



Note!
The following categories and prevalence and incidence calculations are built into the analysis capabilities of NHSN.

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Incidence vs. Prevalence

- **Incidence Rate:** measures the occurrences of new cases or events in a specific population during a given time period
- **Prevalence Rate:** measures the occurrence of existing (old and new) cases in a specific population during a given time period

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Categories of CDI LabID Events

- **Community Onset (CO):** LabID Event collected as an outpatient or an inpatient ≤3 days after admission to the facility (i.e., days 1, 2, or 3)
- **Community-Onset Healthcare Facility-Associated (CO-HCFA):** CO LabID Event collected from a patient who was discharged from the facility ≤ 4 weeks prior to current date of stool specimen collection
- **Healthcare Facility-Onset (HO):** LabID Event collected >3 days after admission to the facility (i.e., on or after day 4)

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CDI Prevalence Rates

Admission Prevalence Rate

By facility

$$\frac{\text{\# non-duplicate CDI LabID Events per patient per month identified } \leq 3 \text{ days after admission to the facility}}{\text{\# patient admissions to the facility}} \times 100$$

By single location

$$\frac{\text{\# non-duplicate CDI LabID Events per patient per month identified } \leq 3 \text{ days after admission to the specific location}}{\text{\# patient admissions to the same location}} \times 100$$



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Location Percent Admission Prevalence that is CO

$$\frac{\text{\# Admission Prevalent LabID Events to a location that are CO}}{\text{Total \# Admission Prevalent LabID Events}} \times 100$$

Note: the numerator in this formula does not include Admission Prevalent LabID Events that are CO-HFCA



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Location Percent Admission Prevalence that is CO-HFCA

$$\frac{\text{\# Admission Prevalent LabID Events to a location that are CO-HFCA}}{\text{Total \# Admission Prevalent LabID Events}} \times 100$$



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Location Percent Admission Prevalence that is HO

$$\frac{\text{\# Admission Prevalent LabID Events to a location that are HO}}{\text{Total \# Admission Prevalent LabID Events}} \times 100$$

Overall Patient Prevalence Rate

$$\frac{\text{Number of 1st CDI LabID Events per patient per month for the location* , regardless of time spent in that location*}}{\text{Number of patient admissions to the location*}}$$

* or facility

Outpatient Reporting

By specific location:

$$\frac{\text{\# all non-duplicate CDI LabID Events per patient for the location}}{\text{\# of patient encounters for the location}} \times 100$$

Facility-wide (FacWideOUT)

$$\frac{\text{\# all non-duplicate CDI LabID Events per patient for the facility}}{\text{\# of patient encounters for the location}} \times 100$$

CDI Incidence Rates

Location CDI Incidence Rate

$$\frac{\text{\# of Incident CDI LabID Events per month identified >3 days after admission to the location}}{\text{\# of patient days for the location}} \times 10,000$$



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Facility CDI Healthcare Facility-Onset Incidence Rate

$$\frac{\text{\# of all Incident HO CDI LabID Events per month in the facility}}{\text{\# of patient days for the facility}} \times 10,000$$

Note: this calculation is only accurate for Overall Facility-Wide Inpatient reporting



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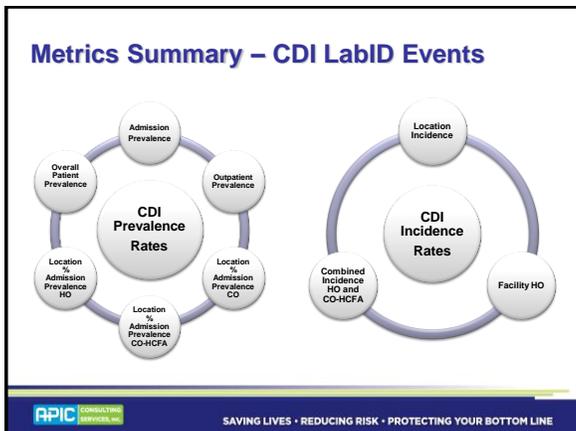
Facility CDI Combined Incidence Rate

$$\frac{\text{\# of all Incident HO and CO-HCFA CDI LabID Events per month in the facility}}{\text{Number of patient days for the facility}} \times 10,000$$

Note: this calculation is only accurate for Overall Facility-Wide Inpatient reporting



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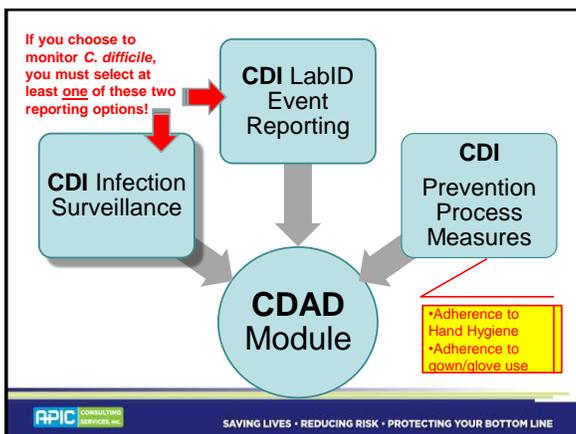


Question

- I don't have a strong statistics background and I'm not sure I have time to separate out the Healthcare Onset (HO) from the Community Onset (CO) MDROs. What should I do?

No problem. The NHSN analysis tool automatically calculates the rates based on the information you provide using the reporting plan, event, and denominator information.

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QUESTIONS?



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NHSN Basic Analysis – Getting the Data Out



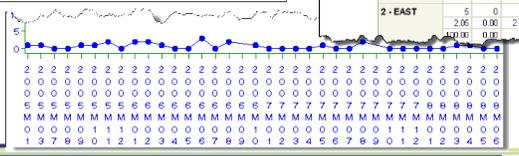
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Analysis Output Options

National Healthcare Safety Network
Line Listing for All Central Line-Associated BSI Events
As of: September 1, 2008 at 5:30 AM
Data Range: QAR3 (07/15-08/04/2008) to 08/02

Patient ID	Gender	Admission Date	Event ID	Event Date	Event Type	Specific Event	Location
16-9882	F	01/02/2008	684887	01/05/2008	BSI	LCBI	3 CENTRAL
00-654-999	F	01/04/2008	684419	01/07/2008	BSI	LCBI	3 CENTRAL
20914	F	02/11/2007	696254	01/03/2008	BSI	LCBI	3 CENTRAL
16-22	M	01/02/2008	716891	01/13/2008	BSI	LCBI	3 CENTRAL
73	M	02/20/2008	836136	03/01/2008	BSI	LCBI	BURN
24-16-883	F	02/26/2008	912611	03/04/2008	BSI	LCBI	3 MS
0120673	M	04/19/2008	1135730	04/16/2008	BSI	LCBI	3 CENTRAL
021-963	M	04/01/2008	1194306	04/12/2008	BSI	LCBI	3 MS

Frequency Percent Row Pct Col Pct	Location	mrsa		
		N	%	Total
1000		2	1	3
		0.02	0.41	1.23
		86.87	23.32	
10000		0.90	4.76	
		1	0	1
		0.41	0.00	0.41
100.00		0.00	0.00	0.00
		0.42	0.00	
		2.05	0.00	2.05
2 - EAST		6	0	6
		0.00	0.00	0.00
		440.00	0.00	




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Why do you want the data?

- **Performance Improvement**
 - Line list
 - Don't use a rate table for daily for weekly analysis
- **Planning – long and short term**
 - Frequency distribution
 - Rate table
- **Formal reports**
 - Rate tables
 - SIR tables



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Generate Dataset

- NHSN Home
- Reporting Plan
- Patient
- Event
- Procedure
- Summary Data
- Import/Export
- Analysis
 - ▢ Generate Data Sets
 - ▢ Output Options
 - ▢ Statistics Calculator
- Surveys
- Users
- Facility
- Group
- Log Out

Generate Data Sets

Generate Patient Safety Analysis Data Sets

Date Last Generated	Action
Mar 28 2011 1:00PM	Generate Data

The data set generation process will take several minutes. Do not logoff or close this window while the process is running. You may minimize the browser window and work in other applications while you wait.

Back

The screen will show the date and time the most recent dataset was generated. If you have data that was added to NHSN since that date/time, it will not be included in your output unless you generate a new dataset



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Generate Data Sets

Data sets are being generated, Please Wait....

HospSurveyV3

The data set generation process will take several minutes. Do not logoff or close this window while the process is running. You may minimize the browser window and work in other applications while you wait.



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Generate Data Sets

Generate Patient Safety Analysis Data Sets [HELP](#)

Date Last Generated	Action
Jul 18 2011 8:37AM	<input type="button" value="Generate New"/>

The data set generation process will take several minutes. Do not logoff or close this window while the process is running. You may minimize the browser window and work in other applications while you wait.

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Output Options

NHSN Home

- Reporting Plan
- Patient
- Event
- Procedure
- Summary Data
- Import/Export
- Analysis
 - Generate Data Sets
 - Output Options
 - Statistics Calculator
- Surveys
- Users
- Facility
- Group
- Log Out

Patient Safety Component
Analysis Output Options

- Device-Associated Module
- Procedure-Associated Module
- MDRO/CDI Module - Infection Surveillance
- MDRO/CDI Module - LABID Event Reporting
- MDRO/CDI Module - Process Measures
- MDRO/CDI Module - Outcome Measures
- Vaccination Module
- Advanced
- My Custom Output
- Published Output

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Tree View Menu

Patient Safety Component
Analysis Output Options

- Device-Associated Module
 - All Device-Associated Events
 - Central Line-Associated BSI
 - Ventilator-Associated PNEU
 - Urinary Catheter-Associated UTI
 - Central Line Insertion Practices
 - Dialysis Events
- Procedure-Associated Module
- MDRO/CDI Module - Infection Surveillance
- MDRO/CDI Module - LABID Event Reporting
- MDRO/CDI Module - Process Measures
- MDRO/CDI Module - Outcome Measures
- Vaccination Module

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Tree View Menu

Patient Safety Component
Analysis Output Options

Expand All Collapse All

- Device-Associated Module
 - All Device-Associated Events
 - Central Line-Associated BSI
 - Ventilator-Associated PNEU
 - Urinary Catheter-Associated UTI
 - CDC Defined Output
 - Central Line Insertion Practices
 - Dialysis Events
- Procedure-Associated Module
 - MDRO/CDI Module - Infection Surveillance
 - MDRO/CDI Module - LABID Event Reporting
 - MDRO/CDI Module - Process Measures
 - MDRO/CDI Module - Outcome Measures
 - Vaccination Module



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If "Run" is selected, you will see an HTML screen with all dates and locations displayed

If "Modify" is selected, you will be able to choose the format, dates, and other criteria to display

- Urinary Catheter-Associated UTI
 - CDC Defined Output
 - Line Listing - All CAU Events
 - Frequency Table - All CAU Events
 - Bar Chart - All CAU Events
 - Pie Chart - All CAU Events
 - Rate Table - CAU Data for ICU-Other/SCA
 - Run Chart - CAU Data for ICU-Other/SCA
 - Central Line Insertion Practices
 - Dialysis Events
- Procedure-Associated Module
- MDRO/CDI Module - Infection Surveillance

Common Screen Elements



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Line Listing

Analysis Data Set: CAU_Events Export Analysis Data Set

Modify Attributes of the Output:
Last Modified On: 07/22/2011
Output Type: Line Listing
Output Name: Line Listing - All CAU Events
Output Title: Line Listing for All Catheter-Associated UTI Events

Select output format:
Output Format: HTML
 Use Variable Labels

Select a time period or Leave Blank for Cumulative Time Period:
Date Variable: Beginning Ending Clear Time Period
 Enter Date variable/Time period at the time you click the Run button

Standard "Modify" Screens

Analysis Data Set: DA_Events Export Analysis Data Set

Export Output Options
Exporting data set CAUTI Events: Select data export format

Excel spreadsheet (*.xls)
delimited file (comma-separated values) (*.csv)
delimited file (tab-delimited values) (*.tbt)
Excel spreadsheet (*.xls)
Excel 5.0 or 7.0 (95) spreadsheet (*.xls)
dBASE 5.0, IV, III+, III, and II files (*.dbf)
SAS for Windows V7R39 (*.sas7bdat)

Export Back

Standard "Modify" Screens

File Download

Do you want to open or save this file?

Name: nhsn_export.zip
Type: Compressed (zipped) Folder, 79.1KB
From: sdn7.cdc.gov

Open Save Cancel

Always ask before opening this type of file

While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. (3/29/2012 1:05:52)

File Edit View Tools Help

Organize Extract all files

Name

CAU_Events

Adding Selection Criteria

Specify Other Selection Criteria

Show Criteria Column

location

- evntDateYM
- evntDateYQ
- evntDateYr
- evntToDisDays
- gender
- id2
- lcbiPath
- lcbiPathDesc
- linkedproc
- location
- locCDC
- locCDCDesc
- locLabel
- locStatus
- mdro
- mdroIncompleteFlag
- mdroInPlan

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Specify Other Selection Criteria:

Show Criteria Column Row Clear Criteria

location		

Specify an operator and value(s) for selection criteria:

Variable	Operator	Value(s)
location	=	

Save Clear Close

Choose a category of subset that you want to include from the drop-down list in the first box. Place your cursor in the box directly below and click. This gray box will appear.

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If you choose the = sign, you will have one choice for this field (in this case, one location)

Specify an operator and value(s) for selection criteria:

Variable	Operator	Value(s)
location	=	SURGICAL ICU (SURGICU)

Save Clear Close

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If you select **in** for the operator, you will have multiple drop-down fields to include

Specify an operator and value(s) for selection criteria: [Add Column+/-](#)

Variable	Operator	Value(s)
		2 CENTRAL ORTHOPEDICS (2CEN)
		SURGICAL ICU (SURGICU)
		ICU (4 NORTH)

location in

In this example, we included three separate locations in our output



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Selecting Specific Criteria for Analysis

Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

location		

Double-check your filtering by clicking "Show Criteria". This box will display the equation to filter your data

Selection Criteria

((location = "3 CENTRAL*"))

Back



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Specify Other Selection Criteria:

[Show Criteria](#) [Column +](#) [Row +](#) [Clear Criteria](#)

Other Options:

[Print Variable Reference List](#)

Modify Variables To Display By Clicking: [Modify List](#)

Specify Sort Variables By Clicking: [Modify List](#)

Select Page by variable:

Run Save All Print Back Export Output Data Set



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Other Options:

Modify Variables To Display By Clicking: [Modify List](#)

Specify Sort Variables By Clicking: [Modify List](#)

Select Page by variable:

Which fields to display
 and what order they
 if you want certain
 items on separate
 pages

Modify Variables To Display By Clicking: [Modify List](#)



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Select Variables to include in Line Listing:

Available Variables	Selected Variables
acne	orgID
admDateYH	patID
admDateYM	dob
admDateYQ	gender
admDateYr	admiDate
admToDisDays	eventID
admToEvnDays	eventDate
ageAEvent	eventType
birthWI	spcEvent
birthWCode	location
birthWCodeDesc	
cdad	
centralLine	
completeFlag	
consDeath	
cr_diagTher	
cr_labNoOrg	
cr_labPath	
cr_labSkinCon	
cr_ssApnea	
cr_ssBradycard	
cr_ssChills	
cr_ssFever	
cr_ssHypoten	
cr_ssHypotherm	
customEventType	
devinerDate	

Buttons: All >>, << All, Up, Down, Save, Reset, Close



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Specify Sort Variables By Clicking: [Modify List](#)

Select Sort Order in Line Listing:

Available Variables	Selected Variables
acne	admiDate
admDateYH	
admDateYM	
admDateYQ	
admDateYr	
admToDisDays	
admToEvnDays	
ageAEvent	
birthWI	
birthWCode	
birthWCodeDesc	
cdad	
centralLine	
completeFlag	
consDeath	
cr_diagTher	
cr_labNoOrg	
cr_labPath	
cr_labSkinCon	
cr_ssApnea	
cr_ssBradycard	
cr_ssChills	
cr_ssFever	
cr_ssHypoten	
cr_ssHypotherm	
customEventType	
devinerDate	

Buttons: All >>, << All, Up, Down, Save, Reset, Close



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Standardized Infection Ratio (SIR)

- A summary measure used to track HAIs at a national, state, or local level over time
- Adjusts for patients of varying risk within each facility
- SIR compares the actual number of HAIs reported to the baseline U.S experience
- An SIR >1.0 indicates that more HAIs were observed than predicted



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Calculation of SIR

Type of ICU	# CLABSI	# CL Days	CLABSI Rate	NHSN Rate	Expected # CLABSIs
Medical Cardiac	2	380	5.26	2.0	0.76
Medical	1	257	3.89	2.6	.067
Med/Surg	3	627	4.78	1.5	0.94
Neuro-surgical	2	712	2.81	2.5	1.78
Total	8	1976	4.05		4.15

$$\text{SIR} = \frac{\text{Observed (O) HAIs}}{\text{Expected (E) HAIs}} = \frac{8}{4.15} = 1.93$$



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Example – Overall CLABSI SIR

Org ID	Summary Yr	Infection Count	Number Expected	Central Line Days	SIR	SIR p-value	95% Confidence Interval
10018	2009	9	7.191	3786	1.25	0.2962	0.653, 2.184

- During 2009, there were 9 CLABSIs identified in our facility, and we observed 3786 central line days from the locations from which the CLABSIs were reported
- Based on the NHSN 2006-2009 baseline data, 7.191 CLABSIs were expected
- This result is an SIR of 1.25 (9/7.191), signifying that during this time period, our facility identified 25% more CLABSIs than expected
- The p-value and 95% Confidence Interval indicate that the number of observed CLABSIs is not significantly higher than the number of expected CLABSIs



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Ventilator-Associated PNEU

- CDC Defined Output
 - Line Listing Table - All VAP Events
 - Frequency Table - All VAP Events
 - Bar Chart - All VAP Events
 - Pie Chart - VAP Data for ICU-Other/SCA
 - Rate Table - VAP Data for ICU-Other/SCA
 - Run Chart - VAP Data for NICU
 - Rate Table - VAP Data for NICU
 - Run Chart - VAP Data for NICU
- Urinary Catheter-Associated UTI

Note!
Only Rates are available at this time for VAP and SIRs are not yet available for this measure

Run Modify
Run
Run
R

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QUESTIONS?

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