



American Recovery and Reinvestment Act  
Epidemiology and Laboratory Capacity (ELC)  
for Infectious Disease Program  
Healthcare-Associated Infections (HAIs)  
Grantee Meeting

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October 19-20, 2009



## Patient Safety Component

# Central Line-associated Bloodstream Infection

(CLABSI)

# Introduction

- 250,000 CLABSIs occur in the United States each year
- Most bloodstream infections are associated with the presence of a central line or umbilical catheter (in neonates) at the time of or before the onset of the infection
- Estimated mortality is 12-25% for each CLABSI
- Cost to the healthcare system is approximately \$25,000 per episode





# Key Terms

- Use CDC definitions for the following:
  - Healthcare-associated infection (HAI)
  - CLABSI
  - Central Line
  - Laboratory-confirmed BSI (LCBI)
  - Clinical Sepsis (CSEP)
  - Temporary Central Line
  - Permanent Central Line



# 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
  - Occurs in a patient in a healthcare setting and
- When the setting is a hospital, meets the criteria for a specific infection (body) site as defined by CDC
- When the setting is a hospital, may also be called a nosocomial infection

Horan TC, Andrus ML, Dudeck MA. CDC/NHSN surveillance definition of healthcare-associated infection and criteria for specific types of infections in the acute care setting. *Am J Infect Control* 2008;36:309-32.



# Source of HAI



- Endogenous sources are body sites, such as the skin, nose, mouth, 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 healthcare environment.



# HAI

- The following infections are not considered healthcare associated:
  - Infections associated with complications or extensions of infections already present on admission, unless a change in pathogen or symptoms strongly suggests the acquisition of a new infection
  - Infections in infants that have been acquired transplacentally & become evident  $\leq 48$  hours after birth
  - Reactivation of a latent infection



# HAI

- The following conditions are not infections:
  - Colonization (presence of microorganisms on skin, mucous membranes, in open wounds, or in excretions or secretions but are not causing adverse clinical signs or symptoms)
  - Inflammation that results from tissue response to injury or stimulation by noninfectious agents, such as chemicals

Horan TC, Andrus ML, Dudeck MA. CDC/NHSN surveillance definition of healthcare-associated infection and criteria for specific types of infections in the acute care setting. *Am J Infect Control* 2008;36:309-32.



# Definition: CLABSI

- 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
- If the BSI develops in a patient within 48 hours of discharge from a location, indicate the discharging location on the infection report

**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.



# Definition: Central Line



**A vascular infusion device that terminates at or close to the heart or in one of the great vessels.**

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 femoral veins

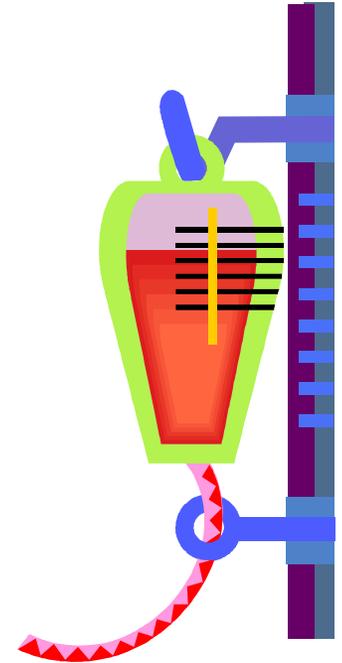


- In neonates, the umbilical artery is considered a great vessel
- Neither the location of the insertion site nor the type of device may be used to determine if a line qualifies as a central line
- Pacemaker wires and other non-lumened devices inserted into central blood vessels or the heart are not considered central lines, because fluids are not infused, pushed, nor withdrawn through such devices.



# 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





# 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: A patient with a central line is transferred from the Orthopedic ward to the Medical-Surgical ICU on Monday. On Tuesday afternoon, he spikes a fever and is determined to have a CLABSI. The location of the CLABSI is recorded as the Orthopedic Ward.

- 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.



# Types of Central Lines

- Temporary – A central line that is not tunneled
- Permanent – A central line that is tunneled



# CLABSI Numerator Data



- Use Primary Bloodstream Infection (BSI) form for each CLABSI that is identified during the month.
- Indicate the specific type of BSI
  - Laboratory-confirmed Bloodstream Infection (LCBI) - can be used for any patient, including patients  $\leq 1$  year of age.  
OR
  - Clinical Sepsis (CSEP) - is only used for
    - Neonates ( $\leq 30$  days old)
    - Infants ( $\leq 12$  months old)

# 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.



Example: Jon Smith had a PICC line inserted on admission (June 1). On hospital day 4, he became confused and experienced chills. Blood cultures were drawn which grew *E. faecalis*.

Mr. Smith meets the criteria for LCBI Criterion 1.

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).

Recognized pathogen does not include organisms considered common skin contaminants. A few of the recognized pathogens are *Staph aureus*, *Enterococcus* spp., *E. coli*, *Pseudomonas* spp., *Klebsiella* spp., *Candida* spp., etc.





# LCBI Criterion 2



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 skin contaminant (i.e., diphtheroids [*Corynebacterium* spp.], *Bacillus* [not *B. anthracis*] spp., *Propionibacterium* spp., coagulase-negative staphylococci [including *S. epidermidis*], viridans group streptococci, *Aerococcus* spp., *Micrococcus* spp.) is cultured from two or more blood cultures drawn on separate occasions.



**The phrase “two or more blood cultures drawn on separate occasions” means:**

- 1. That blood from at least two blood draws were collected within two days of each other, and**
- 2. That at least one bottle from each blood draw is reported by the laboratory as having grown the same common skin contaminant organism (i.e., is a positive blood culture)**

**Note: If special pediatric blood culture bottles are used, only one bottle may be inoculated per blood draw. Therefore, to meet this part of the criterion, two would have to be culture-positive.**



# LCBI Criterion 3



Criterion 3: Patient  $\leq$  1 year of age has at least one of the following signs or symptoms: fever ( $>38^{\circ}\text{C}$ , rectal), hypothermia ( $<37^{\circ}\text{C}$ , rectal), apnea, or bradycardia and signs and symptoms and positive laboratory results are not related to an infection at another site and common skin contaminant (i.e., diphtheroids [*Corynebacterium* spp.], *Bacillus* [not *B. anthracis*] spp., *Propionibacterium* spp., coagulase-negative staphylococci [including *S. epidermidis*], viridans group streptococci, *Aerococcus* spp., *Micrococcus* spp.) is cultured from two or more blood cultures drawn on separate occasions.

Note also – although Criterion 3 can only be used for infants and neonates, Criteria 1 and 2 can also be used in this population.



# Determining “sameness” of two organisms



If the common skin contaminant from one culture is identified to both genus and species level (e.g., *S. epidermidis*) and the companion culture identifies only the genus with or without other attributes (in this example, coagulase-negative staphylococci), then it is assumed that the organisms are the same.

Report the genus/species to NHSN, i.e., in this example, report *S. epidermidis*. See other examples below:

Culture	Companion Culture	Report as...
<i>Bacillus</i> spp. (not <i>anthracis</i> )	<i>B. cereus</i>	<i>B. cereus</i>
<i>S. salivarius</i>	<i>Strep viridans</i>	<i>S. salivarius</i>



# Determining “sameness” of two organisms



If common skin contaminant organisms are speciated (e.g., both are *B. cereus*), but no antibiograms are done, or they are done for only one of the isolates, it is assumed that the organisms are the same.





# Determining “sameness” of two organisms (cont.)

If the common skin contaminants from the cultures have antibiograms that are different for two or more antimicrobial agents, it is assumed that the organisms are not the same.

## Examples:

Organism Name	Isolate A	Isolate B	Interpret as...
<i>S. epidermidis</i>	All drugs <b>S</b>	All drugs <b>S</b>	Same
<i>S. epidermidis</i>	OX <b>R</b> GENT <b>R</b>	OX <b>S</b> GENT <b>S</b>	Different
<i>Corynebacterium</i> spp.	PENG <b>R</b> CTPRO <b>S</b>	PENG <b>S</b> CTPRO <b>R</b>	Different
<i>Strep viridans</i>	All drugs <b>S</b>	All drugs <b>S</b> except ERYTH ( <b>R</b> )	Same



# Collecting Blood Culture Specimens



Ideally, blood specimens for culture should be obtained from two to four blood draws from separate venipuncture sites (e.g., right and left antecubital veins), not through a vascular catheter.



These blood draws should be performed simultaneously or over a 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 the NHSN criteria, but you should work with appropriate personnel to facilitate better specimen collection practices for blood cultures.



# Clinical Sepsis

- Alternate criteria for BSI in infants ( $\leq 12$  months old) and neonates ( $\leq 30$  days old)
- NOT used for adults or children

**Patient  $\leq 1$  year of age has at least one of the following clinical signs or symptoms with no other recognized cause: fever ( $\geq 38^{\circ}\text{C}$ , rectal), hypothermia ( $< 36^{\circ}\text{C}$ , rectal), apnea, or bradycardia  
and  
blood culture not done or no organisms detected in blood  
and  
no apparent infection at another site  
and  
physician institutes treatment for sepsis.**



# Bloodstream Infection Definitions Summary



- **Laboratory confirmed bloodstream infection (LCBI)**  
– all patients
  1. Any patient:  $\geq 1$  blood culture with pathogen
  2. Any patient:  $\geq 2$  blood cultures drawn on separate occasions positive with same skin organism + clinical symptoms
  3. Infant/neonate:  $\geq 2$  blood cultures drawn on separate occasions positive with same skin organism + clinical symptoms
- **Clinical Sepsis (CSEP)** – infants and neonates only  
Clinical symptoms + no positive blood culture + antimicrobial therapy instituted



# Case Study



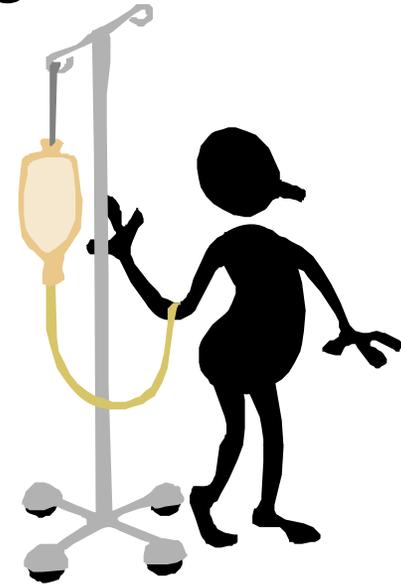
- James is a 28 year old patient with a central line who is 3 days post colon surgery. He spikes a fever and has blood cultures x2 drawn which are both negative. His doctor orders antibiotics and notes “postop sepsis” in the chart.
- How should this be reported?



# Case Study



- A patient with a PICC placed in another facility has been in our hospital for the past week and now has a blood culture growing *Acinetobacter baumannii*.
- Is this a CLABSI?
- Should it be attributed to our hospital or to the facility that placed the PICC?





# Case Study



**•88 year old Hilda was in MICU for a week with a central line in place the entire time. Just prior to discharge from the MICU to a medical ward, the line was pulled. Within 24 hours, she became disoriented and hypotensive. Blood cultures x 2 were drawn and grew Micrococci and coagulase-negative Staph.**

**•Is this a CLABSI?**

**•Which criterion?**

**•To which location should it be attributed?**

**•What organism(s) should be reported?**



# Example of a Completed BSI Form



## Primary Bloodstream Infection (BSI)

OMB No. 0920-0666  
Exp. Date: xx-xx-20xx

Page 1 of 3

*required for saving    **required for completion	
Facility ID: <b>10000</b>	Event #: <b>2488</b>
*Patient ID: <b>000-002</b>	Social Security #:
Secondary ID:	
Patient Name, Last: <b>Smith</b>	First: <b>Jane</b> Middle:
*Gender: <input checked="" type="radio"/> F <input type="radio"/> M	*Date of Birth: <b>08/12/1956</b>
Ethnicity (specify):	Race (specify):
*Event Type: BSI	*Date of Event: <b>02/16/2008</b>
Post-procedure BSI:    Yes    No	Date of Procedure:
NHSN Procedure Code:	ICD-9-CM Procedure Code:
*MDRO Infection: <input checked="" type="radio"/> Yes <input type="radio"/> No	*Date Admitted to Facility: <b>02/05/2008</b> *Location: <b>MSICU</b>

Required **patient demographic** fields (highlighted in yellow):

- Patient ID
- Gender
- Date of Birth





# Primary Bloodstream Infection (BSI)

Page 1 of 3

*required for saving    **required for completion			
Facility ID: <b>10000</b>		Event #: <b>2488</b>	
*Patient ID: <b>000-002</b>		Social Security #:	
Secondary ID:			
Patient Name, Last: <b>Smith</b>		First: <b>Jane</b>	Middle:
*Gender: <input checked="" type="radio"/> F <input type="radio"/> M	*Date of Birth: 08/12/1956		
Ethnicity (specify):	Race (specify):		
*Event Type: BSI	*Date of Event: <b>02/16/2008</b>		
Post-procedure BSI:    Yes    No	Date of Procedure:		
NHSN Procedure Code:	ICD-9-CM Procedure Code:		
*MDRO Infection: <input checked="" type="radio"/> Yes <input type="radio"/> No	*Date Admitted to Facility: <b>02/05/2008</b>	*Location: <b>MSICU</b>	

**Date of Event:** the date when the first clinical evidence of the BSI appeared or the date the blood culture was collected, whichever came first





# Risk Factors – ICU/Other Locations

**Risk Factors**

\*If ICU/Other locations, Central line: **Yes** No

\*If Specialty Care Area,  
Permanent central line: Yes No  
Temporary central line: Yes No

\*If NICU,  
Non-umbilical Central line: Yes No

Location of Device Insertion: \_\_\_\_\_

Date of Device Insertion: \_\_\_/\_\_\_/\_\_\_

For an **ICU** patient, circle "Yes" if the patient had one or more **central lines**.

Laboratory-confirmed       Clinical sepsis

**\*Specify Criteria Used:**

Signs & Symptoms (check all that apply)

Any patient      ≤1 year old

<input type="checkbox"/> Fever	<input type="checkbox"/> Fever
<input type="checkbox"/> Chills	<input type="checkbox"/> Hypothermia
<input type="checkbox"/> Hypotension	<input type="checkbox"/> Apnea
	<input type="checkbox"/> Bradycardia

Laboratory (check one)

- Recognized pathogen from one or more blood cultures
- Common skin contaminant from ≥2 blood cultures
- Blood culture not done or no organisms detected in blood

Clinical Diagnosis (CSEP only)

- Physician institutes appropriate antimicrobial therapy



# Event Details Section



**Event Details**

\*Specific Event:

Laboratory-confirmed       Clinical sepsis

---

\*Specify Criteria Used:

<u>Signs &amp; Symptoms (check all that apply)</u>		<u>Laboratory (check one)</u>
<u>Any patient</u>	<u>≤1 year old</u>	
<input checked="" type="checkbox"/> Fever	<input type="checkbox"/> Fever	<input type="checkbox"/> Recognized pathogen from one or more blood cultures
<input type="checkbox"/> Chills	<input type="checkbox"/> Hypothermia	<input checked="" type="checkbox"/> Common skin contaminant from ≥2 blood cultures
<input type="checkbox"/> Hypotension	<input type="checkbox"/> Apnea	<input type="checkbox"/> Blood culture not done <u>or</u> no organisms detected in blood
	<input type="checkbox"/> Bradycardia	

Clinical Diagnosis (CSEP only)

Physician institutes appropriate antimicrobial therapy

**Check **Specific Event** type and indicate which elements of the **specific criterion** were used to identify this CLABSI.**



# Event Details Section



**Died: Yes <input type="radio"/> No <input checked="" type="radio"/>	BSI Contributed to Death: Yes <input type="radio"/> No <input type="radio"/>
Discharge Date:	*Pathogens Identified: Yes <input checked="" type="radio"/> No <input type="radio"/> *If Yes, specify on page 2

**Died:** If the patient died before discharge, circle “Yes”, otherwise, “No”.

**BSI Contributed to Death:** If “Died” is Yes, then indicate here whether or not the BSI caused the patient death or exacerbated an existing disease which then lead to death.

**Pathogens Identified:** Circle “Yes” or “No”; if “Yes”, specify organism and antibiogram on back.



# Pathogen Data

- List up to 3 pathogens for each CLABSI identified (in rank order of importance)
- For each pathogen, complete information about antimicrobial susceptibilities
- Only certain bug/drug combinations are required but up to 20 drugs can be listed with susceptibilities



# Example of Completed BSI Form (back)

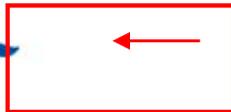


## Primary Bloodstream Infection (BSI) Form

OMB No. 0920-0666  
Exp. Date: 02-29-2008

Page 2 of 2

Pathogen #	Gram-positive Organisms
_____	Coagulase-negative staphylococci <b>VANC</b> S I R N
_____	<i>Enterococcus faecalis</i> <b>AMP</b> <b>DAPTO</b> <b>LNZ</b> <b>PENG</b> <b>VANC</b> S I R N S I R N S I R N S I R N S I R N
_____	<i>Enterococcus faecium</i> <b>AMP</b> <b>DAPTO</b> <b>LNZ</b> <b>PENG</b> <b>QUIDAL</b> <b>VANC</b> S I R N S I R N S I R N S I R N S I R N S I R N
_____	<i>Staphylococcus aureus</i> <b>CLIND</b> <b>DAPTO</b> <b>ERYTH</b> <b>GENT</b> <b>LNZ</b> <b>OX</b> <b>QUIDAL</b> <b>RIF</b> <b>TMZ</b> <b>VANC</b> S I R N S I R N S I R N S I R N S I R N S I R N S I R N S I R N S I R N S I R N
Pathogen #	Gram-negative Organisms
_____	<i>Acinetobacter</i> spp. (specify) <b>AMK</b> <b>AMPSUL</b> <b>CEFEP</b> <b>CEFTAZ</b> <b>CIPRO</b> <b>IMI</b> <b>LEVO</b> <b>MERO</b> <b>PIPTAZ</b> S I R N S I R N S I R N S I R N S I R N S I R N S I R N S I R N
<b>1</b> _____	<i>Escherichia coli</i> <b>AMK</b> <b>CEFEP</b> <b>CEFOT</b> <b>CEFTAZ</b> <b>CEFTRX</b> <b>CIPRO</b> <b>IMI</b> <b>LEVO</b> <b>MERO</b> S I R N S I R N S I R N S I R N S I R N S I R N S I R N S I R N
_____	<i>Enterobacter</i> spp. (specify) <b>AMK</b> <b>CEFEP</b> <b>CEFOT</b> <b>CEFTAZ</b> <b>CEFTRX</b> <b>CIPRO</b> <b>IMI</b> <b>LEVO</b> <b>MERO</b> S I R N S I R N S I R N S I R N S I R N S I R N S I R N S I R N
_____	<i>Klebsiella oxytoca</i> <b>AMK</b> <b>CEFEP</b> <b>CEFOT</b> <b>CEFTAZ</b> <b>CEFTRX</b> <b>CIPRO</b> <b>IMI</b> <b>LEVO</b> <b>MERO</b>



- NHSN Home**
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- Event**
  - [Add](#)
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  - [Incomplete](#)
- Procedure**
- Summary Data**
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- Surveys**
- Users**
- Facility**
- Group**
- Log Out**

Logged into DHQP Memorial Hospital (ID 10000) as TCH.  
Facility DHQP Memorial Hospital (ID 10000) is following the PS component.

## Add Event

[Print PDF Form](#)

Mandatory fields marked with \*  
Fields required for record completion marked with \*\*  
Fields required when in Plan marked with >

**Patient Information** [HELP](#)

Facility ID\*:  Event #:

Patient ID\*:

Social Security #:  Secondary ID:

Last Name:  First Name:

Middle Name:

Gender\*:  Date of Birth\*:

Ethnicity:

Race:  American Indian/Alaska Native  Asian  
 Black or African American  Native Hawaiian/Other Pacific Islander  
 White

**Event Information** [HELP](#)

Event Type\*:  Date of Event\*:

Post-procedure:

Location\*:

Date Admitted to Facility:

**Risk Factors**

---

**Event Details**

---

**Pathogens**

---

**Custom Fields**

---

**Comments**



# Add CLABSI

- Summary Data
- Analysis
- Surveys
- Users
- Facility
- Group
- Log Out

**Patient Information** [HELP](#)

Facility ID\*: DHQP Memorial Hospital (ID 10000)      Event #: 1255343

Patient ID\*: 134679           

Social Security #:       Secondary ID:

Last Name:       First Name:

Middle Name:

Gender\*: F - Female       Date of Birth\*: 06/14/1977

Ethnicity:

Race:  American Indian/Alaska Native       Asian  
 Black or African American       Native Hawaiian/Other Pacific Islander  
 White

---

**Event Information** [HELP](#)

Event Type\*: BSI - Bloodstream Infection       Date of Event\*: 08/15/2008

Post-procedure:

Location\*: CMICU - CARDIAC ICU

Date Admitted to Facility\*: 08/10/2008

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**Risk Factors** [HELP](#)

Central line\*: Y - Yes

Location of Device Insertion:

Date of Device Insertion:



# Add CLABSI

## Event Details [?HELP](#)

Specific Event>: LCBI - Laboratory confirmed bloodstream infection

Specify Criteria Used\*

Signs & Symptoms (check all that apply)

<input type="checkbox"/> Any patient	<input type="checkbox"/> ≤1 year old
<input type="checkbox"/> Fever	<input type="checkbox"/> Fever
<input type="checkbox"/> Chills	<input type="checkbox"/> Hypothermia
<input type="checkbox"/> Hypotension	<input type="checkbox"/> Apnea
	<input type="checkbox"/> Bradycardia

Laboratory (check one)

- Recognized pathogen from one or more blood cultures
- Common skin contaminant from ≥2 blood cultures
- Blood culture not done or no organisms detected in blood

Clinical Diagnosis

- Physician institutes appropriate antimicrobial therapy

Died\*\* : N - No

Discharge Date:

Pathogens Identified:

## Pathogens [?HELP](#)

Pathogen 1: ENTFS - Enterococcus faecalis  5 drugs required

Drug	Result
AMP - Ampicillin	S - Susceptible
DAPTO - Daptomycin	S - Susceptible
LNZ - Linezolid	S - Susceptible
PENG - Penicillin G	S - Susceptible
VANC - Vancomycin	R - Resistant



# CLABSI Denominator Data for ICU and Patient Care Areas that are not SCA or NICU

- Use **Denominators for ICU/Other Locations form**
- At the same time each day, count
  - # patients (i.e., patient days)
  - # patients with one or more central lines (i.e., central line-days)
- Enter the totals within 30 days of the end of the month



# Counting Pt and CL days



## 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	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 prn	PICC	Vent . Extubated at 10:30 am – on room air
210	Miss Brown – transferred from CVICU @ 9 am	Foley to dd	PICC	

Patient days 10

Central line days 7

Indwelling catheter days 3

Ventilator days 4



# Ex of Completed Denominators for ICU/Other Locations Form



## Denominators for Intensive Care Unit (ICU)/ Other locations (not NICU or SCA)

OMB No. 0920-0666  
Exp. Date: 02-29-2008

\* required for saving

*Facility ID# :		*Month:	*Year:	*Location Code:
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				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
<b>*Totals</b>				
Patient-days		Central-line days	Urinary catheter-days	Ventilator-days

15				
16				



# Required denominators will appear with an asterisk (\*) only if included in the Monthly Reporting Plan



NHSN - National Healthcare Safety Network | NHSN Home | My Info | Contact us | Help | Log Out

Logged into DHQP Memorial Hospital (ID 10000) as TCH.  
Facility DHQP Memorial Hospital (ID 10000) is following the PS component.

## Denominators for Intensive Care Unit (ICU)/ Other locations (not NICU or SCA)

[HELP](#)

Mandatory fields marked with \*

[Print PDF Form](#)

**Facility ID\*:** 10000 (DHQP Memorial Hospital )

**Location Code\*:** 3 MS - MEDSURG ICU

**Month\*:** September

**Year\*:** 2008

**Total Patient Days\*:** 145

**Central Line Days\*:** 98

**Urinary Catheter Days:**

**Ventilator Days:**

Save Back



# Analysis: CLABSI Rate



$$\text{CLABSI Rate}^* = \frac{\text{\# CLABSIs identified}}{\text{\# central line days}} \times 1000$$

\* Stratify by:

- Type of ICU/Other Location
- SCA
  - Catheter type (temporary or permanent)
- NICU
  - Birthweight category
  - Catheter type (umbilical or central)



# Analysis: Device Utilization (DU) Ratio

$$\text{CL DU Ratio} = \frac{\# \text{ Central Line Days}}{\# \text{ Patient Days}}$$

**DU Ratio measures the proportion of total patient-days in which central lines were used.**



# Example of Output – CLABSI

*National Healthcare Safety Network*

*Rate Table for Central Line-Associated BSI Data for ICU-Other*

*As of: February 6, 2006 at 11:22 AM*

*Date Range: CLAB\_RATESICU ~~summary~~YM 2005M11 to 2006M01*

Org ID=10000

Location	CLA BSI Count	Central Line Days	NHSN		p_value	Patient Days	CL Util Ratio	NHSN Line DU Pooled Mean
			CLA BSI Rate	CLAB Pooled Mean				
3 MS	4	1,126	3.6	4.0	0.5327905	1,688	0.67	0.57
SICU	2	1,169	1.7	4.6	0.0972321	1,749	0.67	0.61
STROKE	0	1,172	0.0	.	.	1,761	0.67	.