





## MDRO and CDI Surveillance Using the NHSN

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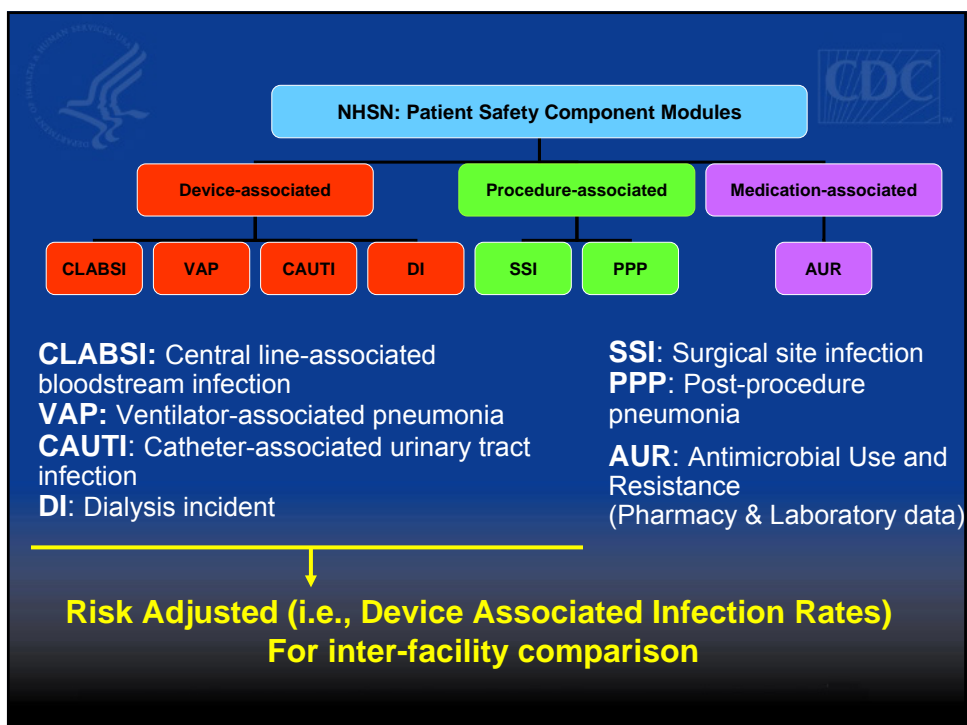
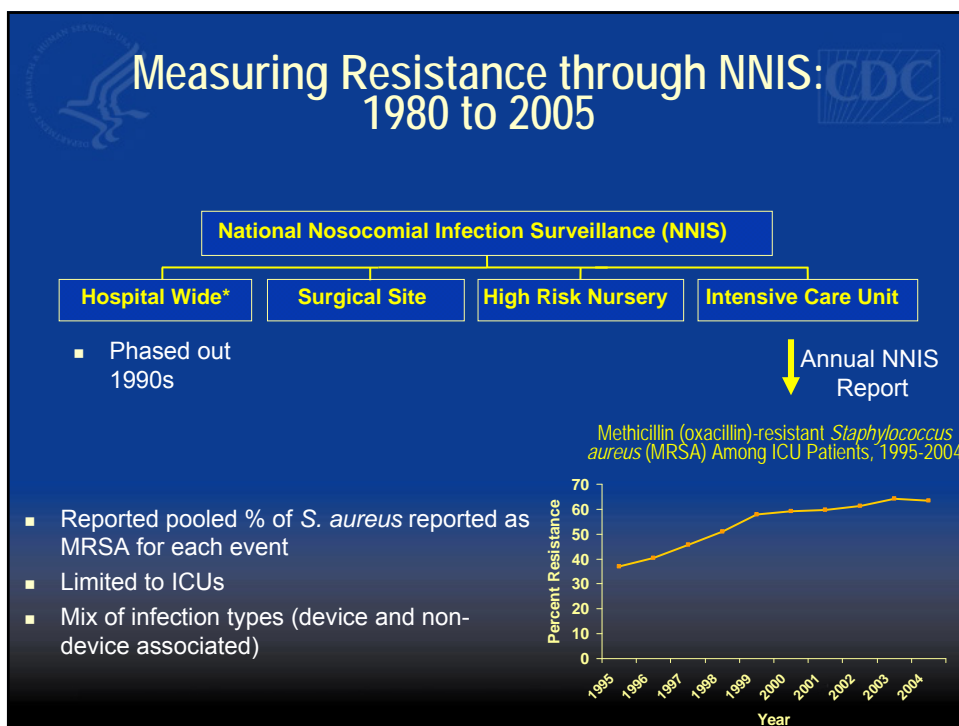
October, 2010

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## Objectives



- Provide background for the MDRO and CDI Module.
- Explain the requirements of the Module.
- Describe the options available in this Module.
- Present the metrics that are available through the Module.



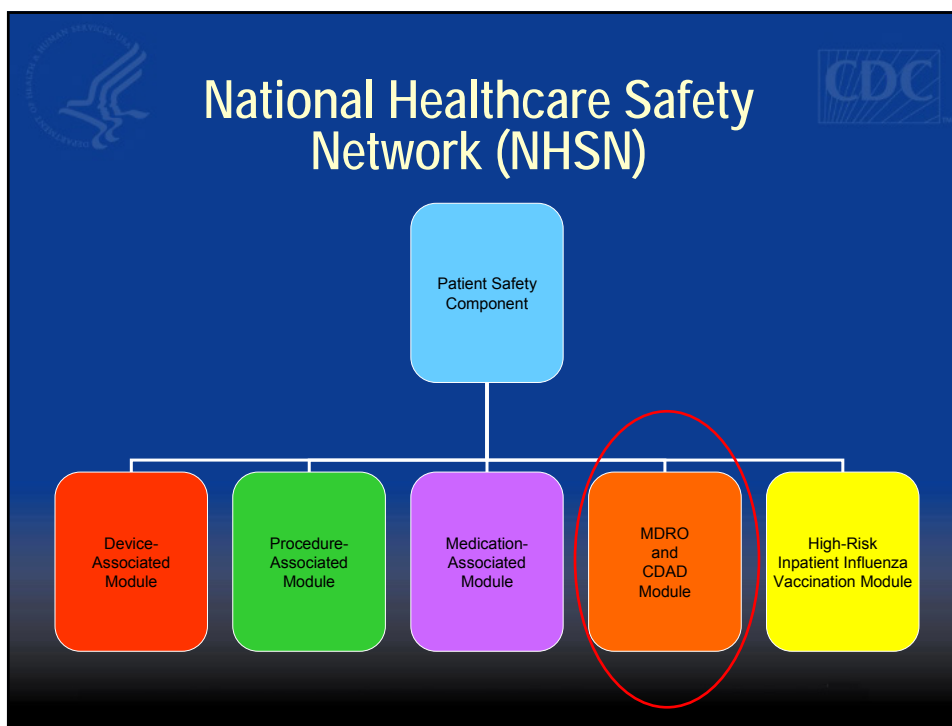


## SHEA/HICPAC Position Paper (October 2008): *Recommendations for MDRO Metrics in Healthcare Settings*

- Define reasonable and practical metrics to best measure impact of prevention
- Authors from APIC, CDC, SHEA, HICPAC
- Five Categories of MDRO Outcome Measures
  1. Tracking Patients
  2. Monitoring Susceptibility Patterns
  3. Estimating Infection Burden
  4. Estimating Exposure Burden
  5. Quantifying Healthcare Acquisition (which includes Transmission)




Recommended metrics  
from the  
SHEA/HICPAC Position Paper  
were the basis  
for the  
new MDRO and CDAD Module




**Goal of the MDRO and CDI Module**


- Monitoring of MDRO and *C. difficile* infection (CDI) will help to evaluate local trends and changes in the occurrence of these pathogens and related infections.
- This module will provide a mechanism for facilities to report and analyze MDRO and CDI data, in order to inform infection control staff of the impact of targeted prevention efforts.




## Current State Mandates to Use NHSN MDRO/CDAD



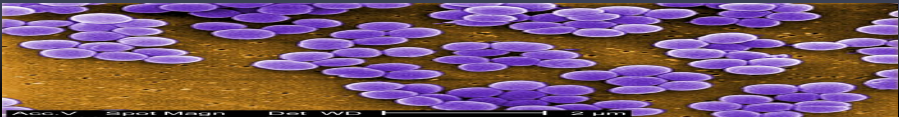
- \*NY: Hospital wide *C.difficile* LabID Event
  - TN & CA: Considering also
  - NJ: MRSA- off plan by locations
- NJ: Off Plan- Blood only Healthcare-onset Lab ID Event



## Organisms Monitored




- 1) Methicillin-Resistant *Staphylococcus aureus* (MRSA)  
(option w/ Methicillin-Sensitive *S. aureus* (MSSA))
- 2) Vancomycin-Resistant *Enterococcus* spp. (VRE)
- 3) Multidrug-Resistant (MDR) *Klebsiella* spp.
- 4) Multidrug-Resistant (MDR) *Acinetobacter* spp.
- 5) *Clostridium difficile*-Associated Disease (CDAD)







## Why These Organisms



- The identified organisms have increased in prevalence in US hospitals over the last three decades
- These organisms have important implications for patient safety
- Options for treating patients with these infections are often extremely limited
- These infections are associated with increased lengths of stay, costs, and mortality



## Reporting Requirements and Options

**Required:**

- 1) Infection Surveillance

**OR**

- 2) Laboratory-Identified (LabID) Event (Proxy Infection Measures)

**Optional:**

Prevention Process Measures:

- 3) Monitoring Adherence to Hand Hygiene
- 4) Monitoring Adherence to Gown and Gloves Use
- 5) Monitoring Adherence to Active Surveillance Testing

6) Active Surveillance Testing (AST) Outcome Measures

# Reporting Methods

**A = Facility-Wide by Location:**

- Report separately from all locations of a facility.
- Separate denominators (patient days, admissions, encounters) for all locations.

**B = Selected Locations:**

- Report separately from 1 or more specific locations of a facility.
- Separate denominators (patient days, admissions, encounters) for each location.

**C = Overall Facility-Wide:**

OR

- Report all from throughout a facility (Lab ID method only).
- Report blood specimen only Lab ID Events from throughout a facility
- Single denominators (patient days, admissions, encounters) for entire facility.

# Monthly Reporting Plan

**Medication-Associated Module** [HELP](#)



Antimicrobial Use and Resistance

Locations    Microbiology    Pharmacy

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**Multi-Drug Resistant Organism Module** [HELP](#)



Locations	Setting	Specific Organism Type	Process and Outcome Measures						
61EAST - PEDIATRIC ICU	IN - Inpatient	VRE - VRE	Infection Surveillance <input checked="" type="checkbox"/>	AST-Timing BOTH - Both Admission and Discharge/Transfer	AST-Eligible ALL - ALL	Incidence Prevalence <input type="checkbox"/>	Lab ID Event All Specimens <input checked="" type="checkbox"/>	Lab ID Event Blood Specimens Only <input type="checkbox"/>	HH GG <input type="checkbox"/>
61EAST - PEDIATRIC ICU	IN - Inpatient	MRSA - MRSA	<input checked="" type="checkbox"/>	BOTH - Both Admission and Discharge/Transfer	ALL - ALL <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Infection Surveillance

Purpose: To collect MDRO or CDI data on NHSN-defined healthcare-associated infections (HAIs)

HAI: a localized or 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 facility admission.**






## Infection Surveillance Definitions


- **MRSA:** *S. aureus* testing oxacillin resistant; or positive from molecular testing for *mecA* and *PBP2a*
- **MSSA:** *S. aureus* testing oxacillin intermediate or susceptible; or (option) negative from molecular testing for *mecA* and *PBP2a*
- **VRE:** Any *Enterococcus* spp. testing resistant to vancomycin
- **MDR-Klebsiella:** *Klebsiella* spp. testing intermediate or resistant to ceftazidime or ceftriaxone
- **MDR-Acinetobacter:** *Acinetobacter* spp. resistant to all agents tested within at least 3 antimicrobial classes, including  $\beta$ -lactams, carbapenems, aminoglycosides, and fluoroquinolones
- **C. difficile:** Gastrointestinal System Infection-Gastroenteritis or Gastrointestinal System Infection-Gastrointestinal Tract where *C. difficile* is the associated pathogen




# Infection Surveillance Requirements


- At least three months in a calendar year for MDRO or CDI
  - Months do not have to be sequential



January





March



July

- Reporting Methods
  - A. Facility-wide by location
  - B. Selected locations
- Settings - Inpatient locations:
  - ICUs
  - Specialty Care Areas
  - Neonatal ICUs (NOT for CDI)
  - Other inpatient care areas

# Infection Surveillance

**NHSN Home**

**Reporting Plan**

**Patient**

**Event**

☐ Add

☐ Find

☐ Incomplete

**Procedure**

**Summary Data**

**Analysis**

**Surveys**

**Users**

**Facility**

**Log out**

Logged into Pleasant Valley Hospital (ID 10312) as DSIEVERT.  
Facility Pleasant Valley Hospital (ID 10312) is following the PS component.

## View 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\*: Pleasant Valley Hospital (10312)      Event #: 13221

Patient ID\*: DS4321

Social Security #:      Secondary ID:      **UTI**

Last Name:      First Name:      **BSI**

Middle Name:      Date of Birth\*: 05/17/1961

Gender\*: M - Male

Ethnicity:      **PNEU**

Race: American Indian/Alaska Native      Asian

Black or African American      Native Hawaiian/Other Pacific Islander

White

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

Event Type\*: SST - Skin and Soft Tissue      Date of Event\*: 11/27/2008

Post-procedure:      **SSI**

MDRO/CDAD Infection\*: Y - Yes

Specific Organism Type\*: ☒ MDR-Acinetobacter      C. difficile      MDR-Klebsiella

☒ MRSA      MSSA      VRE      **Etc.**

Location\*: INMEDCC - IN:ACUTE;CC:M

Date Admitted to Facility: 11/09/2008

**Risk Factors**

**BSI**

**UTI**

**PNEU**

**SSI**

**Etc.**

## Infection Surveillance (2)

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**Event Details** HELP

Specific Event: DECU - Decubitus ulcer

Specify Criteria Used\* (check all that apply)

**Signs & Symptoms**

☐ Abscess

☐ Heat

☐ Hypotension

☐ Hypothermia

☐ Redness

☐ Fever

☐ Purulent drainage or material

☒ Pain or tenderness

☒ Localized swelling

☐ Other evidence of infection found on direct exam, during surgery, or by diagnostic tests

☐ Other signs & symptoms

**Laboratory & Diagnostic Testing**

☐ Positive blood culture

☒ Positive culture

☐ Other positive laboratory tests

☐ Positive culture of pathogen

☐ Positive culture of skin contaminant

**Clinical Diagnosis**

Physician diagnosis of this event type

Physician institutes appropriate antimicrobial therapy

Secondary Bloodstream Infection\*:

Died:

Discharge Date:

Pathogens Identified\*:  Y - Yes If Yes, specify below ->

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**Pathogens** HELP

Pathogen 1: SA - Staphylococcus aureus 10 drugs required

Drug	Result
CLIND - Clindamycin	R - Resistant
DAPTO - Daptomycin	N - Not Tested
ERYTH - Erythromycin	R - Resistant
GENT - Gentamicin	R - Resistant
LNZ - Linezolid	S - Susceptible
OX - Oxacillin	R - Resistant
QUIDAL - Quinupristin/dalfopristin	N - Not Tested
RIF - Rifampin	N - Not Tested
TMZ - Trimethoprim/sulfamethoxazole	S - Susceptible
VANC - Vancomycin	S - Susceptible

Specific Organism Type\*: ☐ MDR-Acinetobacter ☒ C. difficile ☐ MDR-Klebsiella

☐ MRSA ☐ MSSA ☐ VRE

Location\*:

Date Admitted to Facility\*: 09/02/2010

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**Risk Factors**

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**Event Details** HELP

Specific Event\*: GE - Gastroenteritis

Specify Criteria Used\* (check all that apply)

**Signs & Symptoms**

☐ Abscess

☐ Vomiting

☒ Nausea

☐ Fever

☒ Acute onset of diarrhea (liquid stools for >12 hours)

☐ Purulent drainage or material

☐ Pain or tenderness

☐ Persistent microscopic or gross blood in stools

☐ Other evidence of infection found on direct exam, during surgery, or by diagnostic tests

☐ Other signs & symptoms

**Laboratory & Diagnostic Testing**

☐ Positive blood culture

☒ Positive culture

☐ Other positive laboratory tests

☐ Radiographic evidence of infection

Admitted to ICU for CDAD complications\*:  Y - Yes

Surgery for CDAD complications\*:  N - No

Secondary Bloodstream Infection\*:  N - No

Died\*:  N - No

Discharge Date:

Pathogens Identified\*:  Y - Yes If Yes, specify below ->

## Infection Surveillance (3) Monthly Monitoring Form

**Facility ID\*:** 10018 (DHQP MEMORIAL HOSPITAL)  
**Location Code\*:** (ALL) - All  
**Month\*:** September  
**Year\*:** 2009

General  
 Setting: Inpatient Patient Days: 533 Admissions: 30  
 Setting: Outpatient (or Emergency Room) Encounters:

**MDRO & CDAD Infection Surveillance or LabID Event Reporting**

Specific Organism Type	MRSA	VRE	MDR-Klebsiella	MDR-Acinetobacter	C. difficile
Infection Surveillance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LabID Event (All)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LabID Event (Blood specimens only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	


**Process Measures**


## Infection Surveillance Analysis

### MDRO/CDI Infection Incidence Rate


$$= \frac{\text{\# of Infections by MDRO or CDI}}{\text{\# of Patient-Days}} \times 1000$$

(stratified by time and location)







## Laboratory-Identified (LabID) Event Reporting




Purpose: To calculate proxy measures of MDRO or CDI events, exposures, and healthcare acquisitions through monitoring and reporting data from positive clinical cultures.

- This monitoring method enables a facility to rely almost exclusively on data obtained from the laboratory.

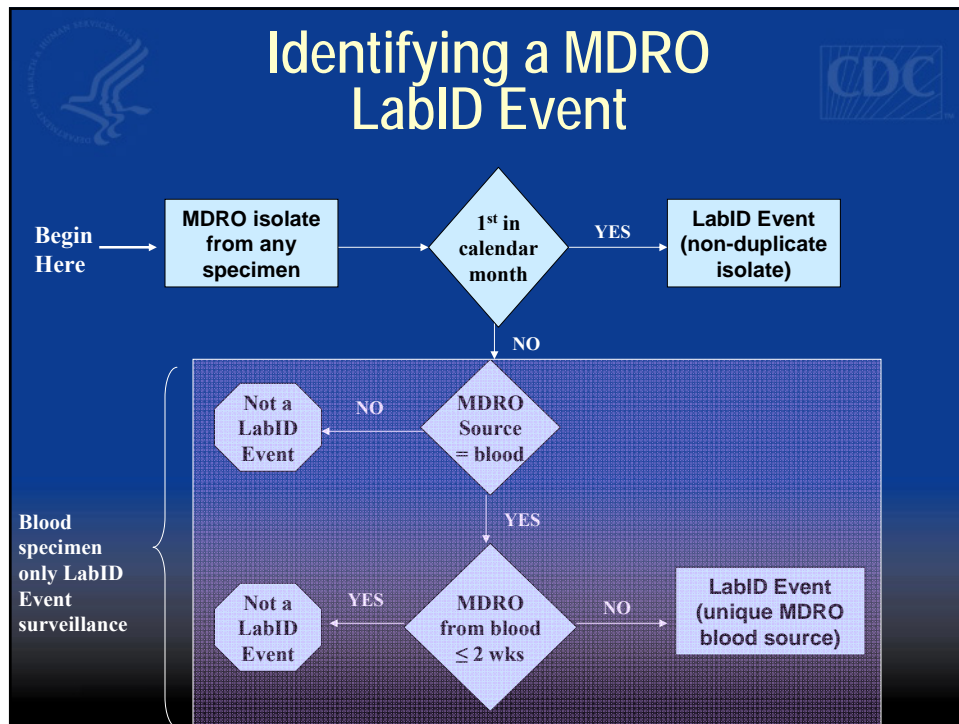




## LabID Event Reporting Definitions



- **LabID Event:** Non-duplicate MDRO isolate from any specimen source plus unique blood source MDRO isolates; or non-duplicate *C. difficile* positive laboratory assay.
- **MDRO Isolate:** Specimen obtained for clinical decision making testing positive for a MDRO (specified for monitoring), excluding active surveillance testing specimens
- **Duplicate MDRO Isolate:** Same MDRO, same patient, same month, same location, any source (except blood)
- **Unique Blood Source:** MDRO isolate from blood in patient with no prior positive blood culture for same MDRO in  $\leq 2$  weeks
- **Duplicate *C. difficile* Isolate:** Same patient, same location, with a prior positive *C. difficile* laboratory assay in  $\leq 2$  weeks.





## LabID Event Reporting Requirements




- All LabID Events for at least one MDRO or for CDI
- Blood Isolate LabID Events only facility wide for at least one MDRO (no CDI)
- At least one selected location in the healthcare facility
- At least three consecutive months in a calendar year


  
**May**

  
**June**

  
**July**



## Reporting Methods



**Location Specific:**

- Select only a few locations or every location for full facility coverage.
- Report separately from each selected location in the facility.
- Separate denominators for each location:
  - patient days and admissions for inpatient locations
  - encounters for outpatient locations

**Facility-Wide Inpatient or Facility-Wide Outpatient:**

- Options currently available only in the MDRO/CDI Module and only for LabID Event reporting.
- Report from throughout a facility's inpatient or outpatient locations.
- Single denominators for entire facility:
  - FacWideIN – patient days and admissions (specific ones for CDI)
  - FacWideOUT – encounters (specific one for CDI)

# LabID Event

**NHSN Home** Reporting Plan Patient **Event** Procedure Summary Data Analysis Surveys Users Facility Group Log Out

Logged into Pleasant Valley Hospital (ID 10312) as DSIEVERT.  
Facility Pleasant Valley Hospital (ID 10312) is following the PS component.

## View Event

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

[Print PDF Form](#)

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

Facility ID\*: Pleasant Valley Hospital (10312) Event #: 13218  
 Patient ID\*: D55678  
 Social Security #: Secondary ID:  
 Last Name: First Name:  
 Middle Name:  
 Gender\*: M - Male Date of Birth\*: 08/23/1954  
 Ethnicity: Race: American Indian/Alaska Native Asian  
 Black or African American Native Hawaiian/Other Pacific Islander  
 White

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

Event Type\*: LABID - Laboratory-identified MDRO or CDAD Event  
 Date Specimen Collected\*: 11/23/2008  
 Specific Organism Type\*: MRSA - MRSA  
 Outpatient\*: N - No  
 Specimen Source\*: WOUNDSPC - Specimen from wound  
 Date Admitted to Facility\*: 11/04/2008  
 Location\*: INMEDCC - IN:ACUTE:CC:M  
 Date Admitted to Location\*: 11/01/2008  
 Documented prior evidence of previous infection or colonization with this specific organism type?: N - No  
 Has patient been discharged from your facility in the past 3 months?:

**Custom Fields** [HELP](#)

**Comments** [HELP](#)

[Edit](#) [Delete](#) [Back](#)

# LabID Event (2)

**NHSN Home** Reporting Plan Patient Event Procedure Summary Data Analysis Surveys Users Facility Group Log Out

Logged into DHQP MEMORIAL HOSPITAL (ID 10018) as FSA6.  
Facility DHQP MEMORIAL HOSPITAL (ID 10018) is following the PS component.

## MDRO and CDAD Prevention Process and Outcome Measures Monthly Monitoring

[HELP](#) [Print PDF Form](#)

Mandatory fields marked with \*



Facility ID\*: 10018 (DHQP MEMORIAL HOSPITAL)  
 Location Code\*: CARD STEP - CARDIAC STEP DOWN UNIT  
 Month\*: November  
 Year\*: 2009


**General**

Setting: Inpatient Patient Days: 587 Admissions: 300  
 Setting: Outpatient (or Emergency Room) Encounters:


**MDRO & CDAD Infection Surveillance or LabID Event Reporting**

Specific Organism Type	MRSA	VRE	MDR-Klebsiella	MDR-Acinetobacter	C. difficile
Infection Surveillance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LabID Event (All)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LabID Event (Blood specimens only)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>




<div>  <h2>LabID Event Reporting Analysis</h2>  </div>			
Specific Metrics	Exposure	Infection (vs. colonization)	Acquisition
Admission Prevalence Rate	✓		
Overall Prevalence Rate	✓		
Bloodstream Infection Admission Prevalence Rate	✓	✓	
Bloodstream Infection Incidence or Incidence Density Rate		✓	✓
Overall MDRO Infection/Colonization Incidence Rate			✓
Overall MDRO Infection/Colonization Incidence Density Rate			✓
CDI Incidence Rate		✓	✓
CDI Healthcare Facility-Onset Incidence Rate		✓	✓
CDI Combined Incidence Rate		✓	✓



## Prevention Process Measures Surveillance



- 1) Monitoring Adherence to Hand Hygiene
- 2) Monitoring Adherence to Gown and Gloves Use as Part of Contact Precautions
- 3) Monitoring Adherence to Active Surveillance Testing (for MRSA & VRE only)








## Adherence to Prevention Process Measures

- Required Minimum Reporting - if chosen:
  - a) **HH**: at least 30 unannounced observations after HCW contact with patient or objects near patient
  - b) **GG**: at least 30 unannounced observations during HCW contact with patient or objects near patient
  - c) **AST**: conducted on patient admission or admission & discharge for MRSA and/or VRE only
- At least one selected location in the healthcare facility (suggest same location selected for Infection Surveillance or LabID Event reporting)
- At least one month in a calendar year
- Reporting Methods: Selected locations only
- Settings: Inpatient and Outpatient (for HH) locations

## Process Measures Reporting



**MDRO and CDAD Prevention Process and Outcome Measures Monthly Monitoring**

OMB No. 0920-0666  
Exp. Date: 03-31-2011

Page 1 of 2

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

Facility ID #: 9999    \*Month: 8    \*Year: 2008    \*Location Code: SICU

Setting: Inpatient    \*\*Days<sup>§</sup>: 120    \*\* Admissions<sup>§</sup>: 7

Setting: Outpatient (or Emergency Room)    \*\*Encounters: \_\_\_\_\_

MDRO & CDAD Infection Surveillance or LabID Event Reporting					
(Specific Organism Type)	MRSA	VRE	MDR- <i>Klebsiella</i>	MDR- <i>Acinetobacter</i>	<i>C. difficile</i>
Infection Surveillance	<b>X</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LabID Event	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Process Measures (Optional)

**Hand Hygiene**


\*\* Performed: 24

\*\* Indicated: 30


**Gown and Gloves**

\*\* Used: 27

\*\* Indicated: 30




## Process Measures Reporting (2)




Active Surveillance Testing (AST)					
**Active Surveillance Testing performed (check all that apply)	<b>X</b>	<input type="checkbox"/>			
**Timing of AST † (circle one)	<b>Adm</b>	Adm			
	Both	Both			
**AST Eligible Patients † (circle one)	<b>All</b>	All			
	NHx	NHx			
Admission AST					
** Performed	6				
** Eligible	7				
Discharge/Transfer AST					
** Performed					
** Eligible					

§ 16.05(a)(1) - All patients in the hospital must be screened for AST.




## Process Measures Adherence Analysis




### Adherence Rate to Process Measures

$$= \frac{\text{\# Performed or Used}}{\text{\# Indicated or Eligible}} \times 100$$

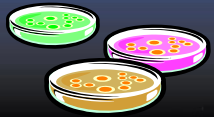



## AST Outcomes Measures




Purpose: To allow facilities to more accurately quantify **exposure burden** and/or **healthcare acquisition** of MRSA and/or VRE:


- Utilize active surveillance testing results
- AST adherence must be performed in the same location (minimum adherence level required to calculate prevalence & incidence)
- Infection Surveillance or LabID Event reporting is also recommended in the same location for the same organism



## AST Outcomes Measures



- Required Minimum Reporting - if chosen:
  - Prevalent and/or incident cases of MRSA or VRE
  - At least one selected location in the healthcare facility
  - At least one month in a calendar year
  - Same location where AST Adherence Process Measures are being performed
- Reporting Methods: Selected locations only
- Settings: Inpatient locations






## AST Outcome Measures Definitions

- **AST Admission Prevalent Case**
  - Known Positive
    - Patient with documented MRSA or VRE colonization or infection from admitting or referring facility in previous 12 months OR
  - Admission AST or Clinical Positive
    - Patient with MRSA or VRE isolated from specimen collected on admission ( $\leq 3$  days).
- **AST Incident Case**
  - Patient with stay  $> 3$  days
  - With no documented MRSA or VRE from admitting or referring facility in previous 12 months or on admission ( $\leq 3$  days )
  - With MRSA or VRE isolated from specimen collected  $> 3$  days after admission or at time of discharge/transfer

## AST Outcome Measures Reporting



**MDRO and CDAD Prevention Process and Outcome Measures Monthly Monitoring**

OMB No. 0920-0686  
Exp. Date: 03-31-2011

Page 1 of 2

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

Facility ID #: 9999    \*Month: 8    \*Year: 2008    \*Location Code: SICU

Setting: Inpatient    \*\*Days<sup>§</sup>: 120    \*\* Admissions<sup>§</sup>: 7

Setting: Outpatient (or Emergency Room)    \*\*Encounters: \_\_\_\_\_

MDRO & CDAD Infection Surveillance or LabID Event Reporting					
(Specific Organism Type)	MRSA	VRE	MDR- <i>Klebsiella</i>	MDR- <i>Acinetobacter</i>	<i>C. difficile</i>
Infection Surveillance	<b>X</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LabID Event	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## AST Outcome Measures Reporting (2)

Active Surveillance Testing (AST)					
** Active Surveillance Testing performed (check all that apply)	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
** Timing of AST † (circle one)	<b>Adm</b>	Both			
** AST Eligible Patients † (circle one)	<b>All</b>	NHx			
Admission AST					
** Performed	6				
** Eligible	7				
Discharge/Transfer AST					
** Performed					
** Eligible					

Prevalent Cases					
(Specific Organism Type)	MRSA	VRE	MDR- <i>Klebsiella</i>	MDR - <i>Acinetobacter</i>	<i>C. difficile</i>
** AST/Clinical Positive	3				
** Known Positive	---				
Incident Cases:					
** AST/Clinical Positive					

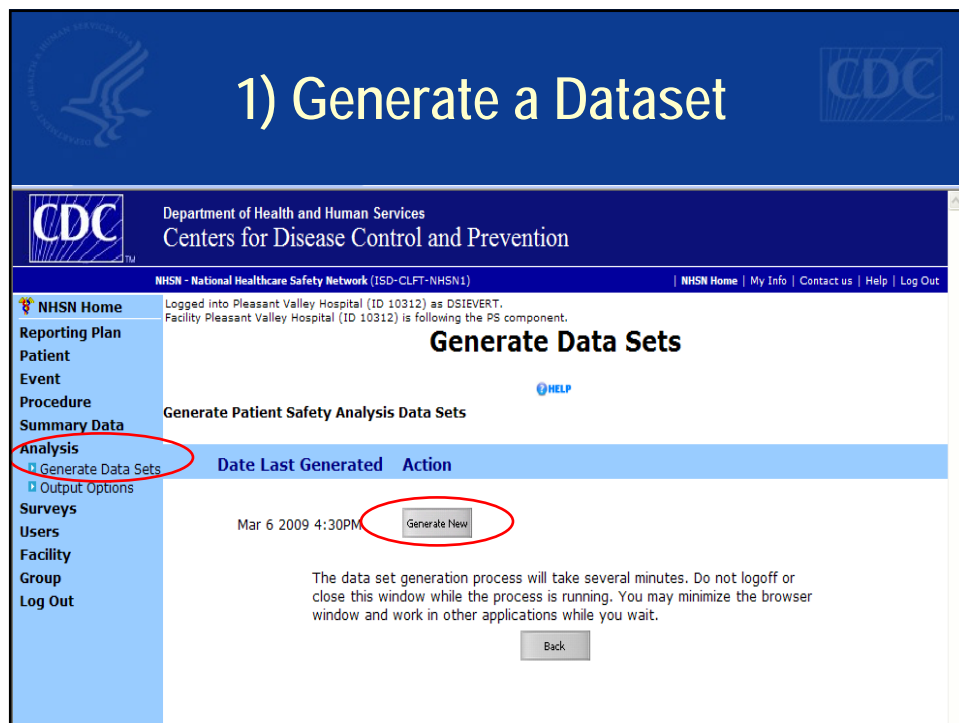
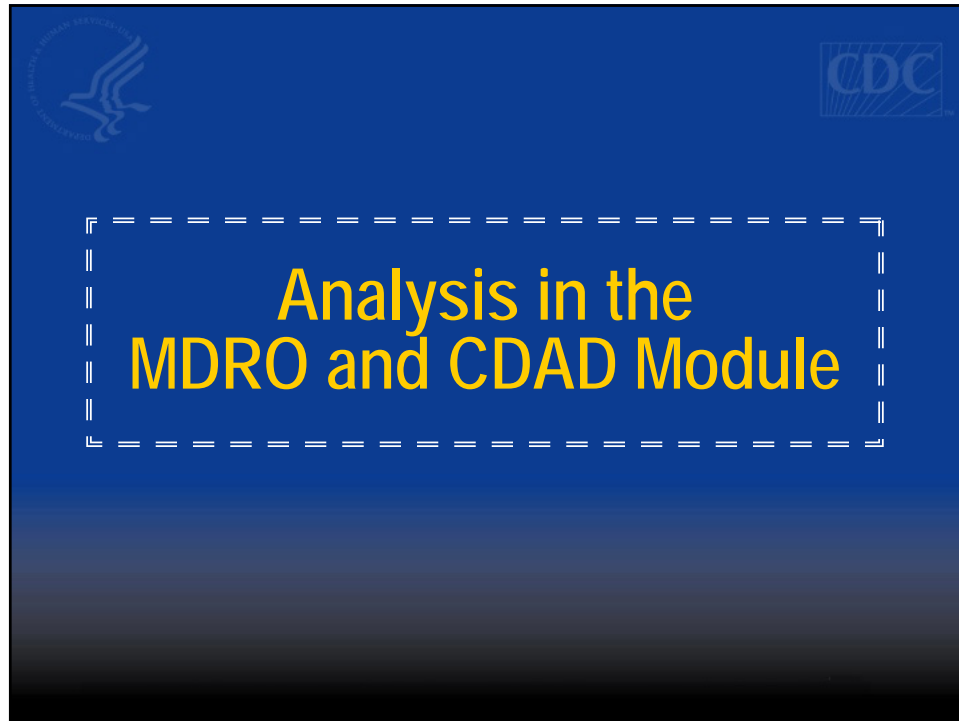
## AST Outcome Measures Analysis

### AST Admission Prevalence

$$= \frac{\text{\# of "+" Admission AST/Clinical "+"/Known "+"}}{\text{\# of Admissions}} \times 100$$

### AST Incidence / Direct Acquisition

$$= \frac{\text{\# of Discharge /Transfer AST "+" and New Clinical "+"}}{\text{\# of Patient-Days}} \times 1000$$



## 2) Choose Output Options

The screenshot shows the NHSN Patient Safety Component interface. The left sidebar contains a navigation menu with the following items: NHSN Home, Reporting Plan, Patient, Event, Procedure, Summary Data, Analysis, Surveys, Users, Facility, Group, and Log Out. The 'Analysis' menu is expanded, showing 'Generate Data Sets' and 'Output Options'. The 'Output Options' menu item is circled in red. The main content area is titled 'Patient Safety Component Analysis Output Options' and contains a list of modules: Device-Associated Module, Procedure-Associated Module, Medication-Associated Module, MDRO/CDAD Module - Infection Surveillance, MDRO/CDAD Module - LABID Event Reporting, MDRO/CDAD Module - Process Measures, MDRO/CDAD Module - Outcome Measures, High Risk Inpatient Influenza Vaccination Module, Advanced, My Custom Output, and Published Output. The 'MDRO/CDAD Module - Infection Surveillance' module is circled in red.

## 3) Choose Reporting Option and Organism

The screenshot shows the NHSN Patient Safety Component interface. The left sidebar contains a navigation menu with the following items: NHSN Home, Reporting Plan, Patient, Event, Procedure, Summary Data, Analysis, Surveys, Users, Facility, Group, and Log Out. The 'Event' menu is expanded, showing 'Generate Data Sets' and 'Output Options'. The 'Output Options' menu item is circled in red. The main content area is titled 'Patient Safety Component Analysis Output Options' and contains a list of reporting options: All MRSA HAI, CDC Defined Output, Line Listing for All MRSA HAI, Frequency Table for All MRSA HAI, Bar Chart for All MRSA HAI, Pie Chart for All MRSA HAI, Rate Table for MRSA HAI Data by Location, All MSSA HAI, and All C. difficile HAI. The 'All MRSA HAI' reporting option is circled in red. The 'Run' and 'Modify' buttons for the 'Line Listing for All MRSA HAI' reporting option are circled in red.

## 4) Basic Run Options – Line Listing

National Healthcare Safety Network

Line Listing - All MRSA HAI

As of: March 9, 2009 at 5:09 PM

Date Range: All MDRO\_EVENTS

orgID	eventID	eventType	centralLine	urinaryCath	ventUsed	postProc	spcEvent	admitDate	eventDate	location	mrse	mssa	vre	acine	kleb	cdif
10312	13017	REPR					EMET	01/15/2008	01/23/2008	INHONCSA	Y	N	N	N	N	N
10312	13027	SST					DECU	01/12/2008	01/23/2008	INHONCSA	Y	N	N	N	N	N
10312	13029	SST					DECU		01/15/2008	INHONCSA	Y	N	N	N	N	N
10312	13048	REPR				N	OREP	01/25/2008	01/30/2008	INSURGCC	Y	N	N	N	N	N
10312	13133	SST					DECU	01/15/2008	01/24/2008	PEDMEDSURG	Y	N	N	N	N	N
10312	13216	BSI	N				LCBI	10/29/2008	11/12/2008	INMEDCC	Y	N	N	N	N	N
10312	13221	SST					DECU	11/09/2008	11/27/2008	INMEDCC	Y	N	N	N	N	N
10312	13474	SST				N	DECU	11/09/2008	11/12/2008	INMEDCC	Y	N	N	N	N	N
10312	13561	BSI	N				LCBI	10/07/2008	10/23/2008	INMSCC	Y	N	N	N	N	N
10312	13563	SST					SKIN	10/14/2008	10/16/2008	INMEDWARD	Y	N	N	N	N	N
10312	13944	BSI	Y			N	LCBI	11/15/2008	12/01/2008	INBMTSCA	Y	N	N	N	N	N
10312	13950	BJ				N	BONE	11/30/2008	12/05/2008	INBMTSCA	Y	N	N	N	N	N
10312	13973	SST					BURN		12/13/2008	INIFMWARD	Y	N	N	N	N	N
10312	13977	LRI				N	LUNG		12/12/2008	INGIWARD	Y	Y	Y	Y	Y	N
10312	13995	EENT				N	UR	12/12/2008	12/16/2008	INENTWARD	Y	N	N	Y	Y	N
10312	13997	EENT				N	UR	12/16/2008	12/17/2008	INENTWARD	Y	Y	Y	Y	Y	N
10312	14106	UTI		N			SUTI	12/01/2008	12/12/2008	INGIWARD	Y	N	N	N	N	N
10312	14290	SSI					BONE	05/10/2008	05/15/2008	INORTWARD	Y	N	N	N	N	N
10312	14293	BSI	N				LCBI	02/28/2008	03/02/2008	INCARDCC	Y	N	N	N	N	N

Sorted by orgID eventID

Data contained in this report were last generated on March 6, 2009 at 4:30 PM.

## 5) Basic Run Options – Frequency Tables

National Healthcare Safety Network

Frequency Table - All MRSA HAI

As of: March 9, 2009 at 5:14 PM

Date Range: All MDRO\_EVENTS

orgID=10312

Frequency Row Pct	Table of location by eventType										
	location	BJ	BSI	EENT	LRI	REPR	SSI	SST	UTI	Total	
	INBMTSCA	1	1	0	0	0	0	0	0	2	
	INCARDCC	0	1	0	0	0	0	0	0	1	
	INENTWARD	0	0	2	0	0	0	0	0	2	
	INGIWARD	0	0	0	1	0	0	0	1	2	
	INHONCSA	0	0	0	0	1	0	2	0	3	
	INIFMWARD	0	0	0	0	0	0	1	0	1	
	INMEDCC	0	1	0	0	0	0	2	0	3	
	INMEDWARD	0	0	0	0	0	0	1	0	1	
	INMSCC	0	1	0	0	0	0	0	0	1	
	INORTWARD	0	0	0	0	0	1	0	0	1	
	INSURGCC	0	0	0	0	1	0	0	0	1	
	PEDMEDSURG	0	0	0	0	0	0	1	0	1	
	Total	1	4	2	1	2	1	7	1	19	

Data contained in this report were last generated on March 6, 2009 at 4:30 PM.

National Healthcare Safety Network

Frequency Table - All MRSA LabID Events

As of: March 9, 2009 at 5:17 PM

Date Range: All LABID\_EVENTS

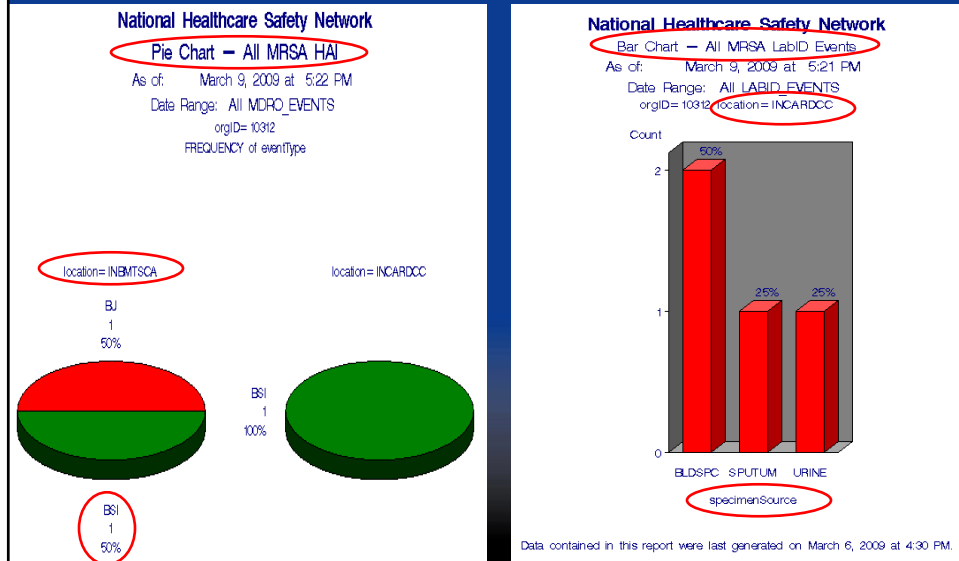
orgID=10312

Frequency Row Pct	Table of specimenSource by onset		
	specimenSource	onset	Total
	BLDSPC	6	9
	BONESPC	0	1
	PUS	3	4
	SKINSORE	1	0
	SPUTUM	2	7
	SRGEXSPC	1	1
	ULCERSPC	0	1
	URINE	1	0
	WOUNDSPC	5	7
	Total	19	49

Data contained in this report were last generated on March 6, 2009 at 4:30 PM.



## 6) Basic Run Options – Pie or Bar Charts



## 7) Basic Run Options – Rate Tables

**National Healthcare Safety Network**  
**Rate Table - All MRSA HAI by Location**  
 As of: March 9, 2009 at 5:26 PM  
 Date Range: All MDRO\_RATES  
 orgID=10312 locCDC=IN:ACUTE:CC:C

location	summaryYM	MRSAcount	numPatDays	MRSArate
INCARDCC	2008M02	0	312	0.0
INCARDCC	2008M03	1	312	3.2

Source of aggregate data: Not available  
 Data contained in this report were last generated on March 6, 2009 at 4:30 PM.

**National Healthcare Safety Network**  
**Rate Table - All MRSA HAI by Location**  
 As of: March 9, 2009 at 5:28 PM  
 Date Range: All MDRO\_RATES  
 orgID=10312 locCDC=IN:ACUTE:CC:M

location	summaryYM	MRSAcount	numPatDays	MRSArate
INMEDCC	2008M01	0	743	0.0
INMEDCC	2008M02	0	723	0.0
INMEDCC	2008M05	0	2000	0.0
INMEDCC	2008M09	0	66	0.0
INMEDCC	2008M11	3	533	5.6

**National Healthcare Safety Network**  
**Rate Table - All MRSA LabID Events by Location**  
 MDRO Exposure Burden - Inpatient MRSA Admission Prevalence Rate  
 As of: March 9, 2009 at 5:30 PM  
 Date Range: All LABID\_RATESMRSA  
 orgID=10312 locCDC=' '

summaryYM	location	MRSA_admPrevCount	numAdms	MRSA_admPrevRate
2007M01	ALL-IN	0	350	0.0
2008M06	ALL-IN	0	120	0.0
2008M11	ALL-IN	1	658	0.2

Source of aggregate data: Not available  
 Data contained in this report were last generated on March 6, 2009 at 4:30 PM.

**National Healthcare Safety Network**  
**Rate Table - All MRSA LabID Events by Location**  
 MDRO Exposure Burden - Inpatient MRSA Admission Prevalence Rate  
 As of: March 9, 2009 at 5:30 PM  
 Date Range: All LABID\_RATESMRSA  
 orgID=10312 locCDC=IN:ACUTE:CC:C

summaryYM	location	MRSA_admPrevCount	numAdms	MRSA_admPrevRate
2008M02	INCARDCC	1	23	4.3
2008M03	INCARDCC	0	23	0.0
2008M06	INCARDCC	0	10	0.0
2008M11	INCARDCC	1	23	4.3

# Process Measures – HH & GG Adherence

**NHSN Home** Logged into Pleasant Valley Hospital (ID 10312) as DSIEVERT.  
Facility Pleasant Valley Hospital (ID 10312) is following the PS component.

**Patient Safety Component**  
Analysis Output Options

Expand All Collapse All

- Device-Associated Module
- Procedure-Associated Module
- Medication-Associated Module
- MDRO/CDAD Module - Infection Surveillance
- MDRO/CDAD Module - LABID Event Reporting
- MDRO/CDAD Module - Process Measures
  - Specific Process Measures
    - CDC Defined Output
      - Rate Table for Hand Hygiene Adherence
      - Rate Table for Gown/Glove Adherence
  - All MRSA AST Process Measures
  - All VRE AST Process Measures
- MDRO/CDAD Module - Outcome Measures
- High Risk Inpatient Influenza Vaccination Module
- Advanced

**Analysis**  
☐ Generate Data Sets  
☐ Output Options

# HH & GG – Percent Adherence

**National Healthcare Safety Network**  
Rate Table - All Hand Hygiene Adherence by Location  
As of: March 17, 2009 at 10:48 AM  
Date Range: All HH\_RATESMDRO  
orgID=10312 loccdc=IN:ACUTE:CC:C

location	summaryYM	hhPerformed	hhIndicated	HH_adhRate
INCARDCC	2008M03	25	30	83.3
INCARDCC	2008M06	40	45	88.9

Source of aggregate data: Not available  
Data contained in this report were last generated on March 11, 2009 at 3:25 PM.

**National Healthcare Safety Network**  
Rate Table - All Hand Hygiene Adherence by Location  
As of: March 17, 2009 at 10:48 AM  
Date Range: All HH\_RATESMDRO  
orgID=10312 loccdc=IN:ACUTE:CC:M

location	summaryYM	hhPerformed	hhIndicated	HH_adhRate
INMEDCC	2008M05	32	44	72.7
INMEDCC	2008M09	25	30	83.3

**National Healthcare Safety Network**  
Rate Table - All Gown/Glove Adherence by Location  
As of: March 10, 2009 at 9:52 AM  
Date Range: All GG\_RATESMDRO  
orgID=10312 loccdc=IN:ACUTE:CC:C



location	summaryYM	ggUsed	ggIndicated	GG_adhRate
INCARDCC	2008M03	27	30	90
INCARDCC	2008M06	35	66	53

Source of aggregate data: Not available  
Data contained in this report were last generated on March 10, 2009 at 9:42 AM.

**National Healthcare Safety Network**  
Rate Table - All Gown/Glove Adherence by Location  
As of: March 10, 2009 at 9:52 AM  
Date Range: All GG\_RATESMDRO  
orgID=10312 loccdc=IN:ACUTE:CC:M

location	summaryYM	ggUsed	ggIndicated	GG_adhRate
INMEDCC	2008M05	35	66	53
INMEDCC	2008M09	26	30	86.7

# Modify - Output Options

Logged into Pleasant Valley Hospital (ID 10312) as DSIEVERT.  
Facility Pleasant Valley Hospital (ID 10312) is following the PS component.

**NHSN Home**

Reporting Plan

Patient

Event

Procedure

Summary Data

**Analysis**

Generate Data Sets

Output Options

Surveys

Users

Facility

Group

Log Out

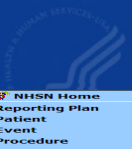

## Patient Safety Component

### Analysis Output Options

Expand All
Collapse All

- Device-Associated Module
- Procedure-Associated Module
- Medication-Associated Module
- MDRO/CDAD Module - Infection Surveillance
- MDRO/CDAD Module - LABID Event Reporting
  - All LabID Events
  - All MRSA LabID Events
  - All MSSA LabID Events
  - All C. difficile LabID Events
  - CDC Defined Output
    - Line Listing for All CDIF LabID Events Run Modify
    - Frequency Table for All CDIF LabID Events Run Modify
    - Bar Chart for All CDIF LabID Events Run Modify
    - Pie Chart for All CDIF LabID Events Run Modify
    - Rate Table for CDIF LabID Data by Location Run Modify

# Modify – Line Listing

Logged into Pleasant Valley Hospital (ID 10312) as DSIEVERT.  
Facility Pleasant Valley Hospital (ID 10312) is following the PS component.

**NHSN Home**

Reporting Plan

Patient

Event

Procedure

Summary Data

Analysis

Generate Data Sets

Output Options

Surveys

Users

Facility

Group

Log Out

## Line Listing

Analysis Data Set: LabID\_Events Export Analysis Data Set

Last Modified On: 03/11/2009

Output Type: Line Listing

Output Name: Line Listing for All CDIF LabID Events

Output Title: Line Listing - All CDIF LabID Events

Select output format:

Output Format: HTML

☐ Use Variable Labels

Select a time period or Leave Blank for Continuous Time Period:

Date Variable: specimenDate Beginning: 01/01/2008 Ending: 12/31/2009 Clear Time Period

☐ Enter Date variable/Time period

Specify Other Selection Criteria:

Show Criteria Column Row

Criteria	Value
cdif	= Y

Other Options:

Modify Variables To Display By Clicking:

Specify Sort Variables By Clicking:

Select Page by variable:

Run

### Select Variables to include in Line Listing

Available Variables

- mdroIncompleteFlag
- mdroInPlan
- modifyDate
- modifyUserID
- mrss
- mrssDesc
- orgID
- patDischarge
- patName
- patName
- patRaceAAB
- patRaceAMN
- patRaceASIAN
- patRaceH-L-P
- patRaceWHITE
- patSurname
- prevDisMons
- specOrg Type
- specDateYr1
- specDateYM
- specDateYQ
- specDateYr
- specimenSource
- specimenSourceDes
- ssn
- vro

Selected Variables

- patID
- eventID
- location
- outpatient
- prevPos
- onset
- cdiAssay
- admitDate
- locationAdmitDate
- specimenDate

>>
All >>
<<
All <<

Up
Down

Save
Reset
Close

## Modify – Line Listing Output

National Healthcare Safety Network  
Line Listing - All CDI/LabID Events

As of: March 12, 2009 at 11:17 AM  
Date Range: LABID\_EVENTS specimenDate 01/01/2008 to 12/31/2008

patID	eventID	location	outpatient	prevPos	onset	cdiAssay	admitDate	locationAdmitDate	specimenDate
B-107	13032	INMEDCC	N	N	HO	Incident	09/01/2008	09/01/2008	09/09/2008
DS0825	14666	OUTOCCCL	Y	N	CO	Incident	-	-	02/03/2008
DS0825	14667	OUTOCCCL	Y	Y	CO	Recurrent	-	-	02/25/2008
DS0825	14668	OUTGICL	Y	Y	CO	-	-	-	02/28/2008
DS0826	14670	OUTGICL	Y	N	CO-HCFA	Incident	-	-	02/05/2008
DS0826	14671	OUTOCCCL	Y	N	CO-HCFA	-	-	-	02/10/2008
DS0826	14672	OUTGICL	Y	Y	CO	-	-	-	02/23/2008
DS0827	14673	OUTOCCCL	Y	N	CO	Incident	-	-	02/17/2008
DS0828	14674	OUTGICL	Y	Y	CO	Incident	-	-	02/13/2008
DS0828	14675	OUTOCCCL	Y	Y	CO	Recurrent	-	-	02/28/2008
DS1213	14571	INSURGCC	N	N	CO	Incident	10/05/2008	10/05/2008	10/07/2008
DS1314	14572	INSURGCC	N	N	HO	Incident	10/03/2008	10/17/2008	10/19/2008
DS1514	14573	INMEDCC	N	N	CO	Incident	09/22/2008	09/22/2008	09/23/2008
DS1615	14574	INMEDCC	N	N	HO	Incident	09/06/2008	09/16/2008	09/18/2008
DS1716	14575	INGIWARD	N	N	CO-HCFA	Incident	07/20/2008	07/21/2008	07/21/2008
DS1817	14576	INMEDCC	N	Y	CO-HCFA	Incident	09/10/2008	09/11/2008	09/12/2008
DS9876	14320	INSURGCC	N	N	HO	Incident	10/05/2008	10/07/2008	10/23/2008
ET100	14428	INGIWARD	N	N	HO	Incident	07/01/2008	07/01/2008	07/06/2008
ET100A	14431	INGIWARD	N	-	HO	Incident	01/15/2008	01/15/2008	01/26/2008
ET101F1	14426	INGIWARD	N	-	HO	Incident	06/01/2008	06/01/2008	06/06/2008
ET102	14499	INMEDWARD	N	N	HO	Incident	04/10/2008	04/10/2008	04/29/2008
ET102T2	14494	INMEDWARD	N	N	HO	Incident	05/01/2008	05/01/2008	05/10/2008
ET102T2	14496	INMEDWARD	N	Y	HO	Recurrent	05/01/2008	05/01/2008	05/25/2008
ET102T2	14497	INMEDWARD	N	Y	HO	Recurrent	05/01/2008	05/01/2008	06/10/2008
ET117A	14097	INENTWARD	N	N	HO	Incident	12/01/2008	12/01/2008	12/12/2008
MS124	14344	OUTOCCCL	Y	N	CO	Incident	-	-	02/14/2008
MS129	14372	INGIWARD	N	-	HO	Recurrent	04/25/2008	04/25/2008	05/25/2008
MS129	14374	INGIWARD	N	-	HO	Incident	04/25/2008	04/25/2008	04/29/2008
RP1234	13473	OUTGICL	Y	Y	CO-HCFA	Incident	-	-	11/20/2008
RP1234	14364	OUTGICL	Y	Y	CO	Recurrent	11/10/2008	-	12/06/2008

Sorted by orgID patID  
Data contained in this report were last generated on March 11, 2009 at 3:25 PM.  
Any C, diff LabID Event with a blank cdiAssay field indicates that it is related to a previous defining Event in a different location.

## Modify – Rate Table

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

NHHSN - National Healthcare Safety Network (ISO-CLFT-NHHSN)

Logged into Pleasant Valley Hospital (ID 10312) as **Administrator**  
Facility Pleasant Valley Hospital (ID 10312) is using the PS component.

### Analysis Rate Table

Analysis Data Set: LABID\_RatesMRSR

**Modify Attributes of the Output:**  
Last Modified On: **03/06/2009**  
Output Type:    
Output Name:   
Output Title:

**Select output format:**  
Output Format:      
Choose page Orientation: ☒ Portrait ☐ Landscape  
☒ Use Variable Labels

**Select a time period or leave blank for Cumulative Time Period:**  
Date Variable:     
☐ Enter Date Variable time period at this time you click the Run button

**Specify Other Selection Criteria:**  
     

Location	Column	Row
INMEDCC		

**Other Options:**   
Group by:     
☐ Show Histogram

## Modify – Rate Table Output

Summary	Mon/Yr	Location	MRSA Admission Prevalence LabID Count	MRSA Admission Prevalence Admissions	MRSA Admission Prevalence Rate
	2008M03	INMEDCC	1	32	3.1
	2008M05	INMEDCC	0	422	0.0
	2008M11	INMEDCC	0	30	0.0

Summary	Mon/Yr	Location	MRSA CO Admission Prevalence LabID Count	MRSA Admission Prevalence LabID Count	MRSA Percent Admission Prevalence/Community-Onset
	2008M03	INMEDCC	0	1	0.0
	2008M05	INMEDCC	0	0	
	2008M11	INMEDCC	0	0	

Summary	Mon/Yr	Location	MRSA HO Admission Prevalence LabID Count	MRSA Admission Prevalence LabID Count	MRSA Percent Admission Prevalence/Healthcare Facility-Onset
	2008M03	INMEDCC	1	1	100.0
	2008M05	INMEDCC	0	0	
	2008M11	INMEDCC	0	0	

Summary	Mon/Yr	Location	MRSA LabID Count	Admissions	Overall MRSA Prevalence Rate
	2008M03	INMEDCC	1	32	3.1
	2008M05	INMEDCC	0	422	0.0
	2008M11	INMEDCC	3	30	10.0

Summary	Mon/Yr	Location	MRSA Blood Admission Prevalence LabID Count	Admissions	MRSA BSI Admission Prevalence Rate
	2008M03	INMEDCC	0	32	0.0
	2008M05	INMEDCC	0	422	0.0
	2008M11	INMEDCC	0	30	0.0

Summary	Mon/Yr	Location	MRSA Blood Incident LabID Count	Admissions	MRSA BSI Incidence Rate
	2008M03	INMEDCC	0	32	0.0
	2008M05	INMEDCC	0	422	0.0
	2008M11	INMEDCC	1	30	3.3



Summary	Mon/Yr	Location	MRSA Blood Incident LabID Count	Patient Days	MRSA BSI Incidence Density Rate
	2008M03	INMEDCC	0	723	0.0
	2008M05	INMEDCC	0	2000	0.0
	2008M11	INMEDCC	1	533	1.9

Summary	Mon/Yr	Location	MRSA Incident LabID Count	Patient Days	Overall MRSA Infection/Colonization Incidence Density Rate
	2008M03	INMEDCC	0	723	0.0
	2008M05	INMEDCC	0	2000	0.0
	2008M11	INMEDCC	3	533	5.6

## Summary Review

- NHSN enrollment, digital certificate, facility-location set-up.
- Complete Monthly Reporting Plan.
- Choose Infection Surveillance and/or LabID Event Reporting.
- Choose from any Optional Process or Outcomes Measures.
- Report into Module for at least 3 months in a calendar year.
  - Consecutive months required for LabID Event reporting.
- Report into NHSN for at least 6 months in a calendar year.
  - = “Active Participant”





## NHSN References

Home Page:  
<http://www.cdc.gov/ncidod/dhqp/nhsn.html>

Document Library (main link to all specific protocols / forms):  
[http://www.cdc.gov/ncidod/dhqp/nhsn\\_documents.html](http://www.cdc.gov/ncidod/dhqp/nhsn_documents.html)

MDRO and CDAD Module:  
[http://www.cdc.gov/ncidod/dhqp/nhsn\\_MDRO\\_CDAD.html](http://www.cdc.gov/ncidod/dhqp/nhsn_MDRO_CDAD.html)



## Questions ?

**[www.cdc.gov/NHSN](http://www.cdc.gov/NHSN)**

**[NHSN@cdc.gov](mailto:NHSN@cdc.gov)**

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