

Being A National Health Safety Network (NHSN) Hospital

Sharon Williamson, MT(ASCP)SM, CIC

October 28, 2009

Texas Health Presbyterian Dallas

- Acute care hospital located in North Dallas
- Member of Texas Health Resources
- Licensed for 866 beds



Infection Prevention Department

- 4.5 FTE (3 FTE RNs, 0.5 FTE Microbiologist, 1 FTE Admin Asst)
- 0.175 FTE Infectious Disease Physician
- Have multiple software systems - AICE, SafetySurveillor (previously used Medmined), Electronic Health Record, Surgery Record and Lab System
- Member of NHSN since August 2007

Infection Prevention Department, cont'd

- Targeted Surveillance Program
 - Central line associated bloodstream infection (CLABSI) house-wide
 - Ventilator associated pneumonia (VAP) house-wide
 - Specific surgical procedures
 - Hip, Knee, Hysterectomy, CABG, Other Cardiovascular, Colon, Pacemaker, Laminectomy, Fusion
- Infectious Disease physician reviews all cases before they are reported to NHSN

What Is NHSN?

- National Healthcare Safety Network
- Supported by the CDC's Division of Healthcare Quality Promotion
- Internet-based surveillance system

Why Join NHSN?

- Already used NHSN protocols for CLABSI, VAP and SSI surveillance
- Hoped to get individualized support directly from the subject matter experts
- Curiosity

What Criteria are Required for Becoming a NGSN Hospital?

- Be a healthcare facility in the USA and listed in one of the following national databases:
 - American Hospital Association (AHA)
 - Centers for Medicare and Medicaid Services (CMS)
 - Veteran's Affairs (VA)
- Have an email address and high-speed internet access on a computer with the ability to download a digital certificate
- Follow NGSN protocols exactly and report in a timely manner

What Criteria are Required for Becoming a NHSN Hospital?, cont'd

- Willingness to share data with the CDC
- Ability to provide written consent for participation in NHSN by a member of the facility's chief executive leadership

NHSN Reporting Requirements

- Use the NHSN internet-based software for reporting data.
- Complete an annual survey for each component selected
- Submit a monthly reporting plan to CDC, informing them which modules will be followed for that month.
 - Data for at least one module must be submitted for a minimum of 6 months of the calendar year to maintain active status.

NHSN Reporting Requirements, cont'd

- Follow NHSN module protocols exactly.
- Report numerator and denominator data to CDC within 30 days of the end of each month.
- Pass quality control acceptance checks that assess the data for accuracy and completeness.
- Report to state health authorities those outbreaks identified and reported to the facility by the CDC

Steps in Becoming a NHSN Hospital

1. Training

- All ICPs using the NHSN software are required to be trained in the utilization of the NHSN components.
- Training is via archived webcasts and accompanying slidesets. These can be accessed from any computer at any time.
- Each hospital assigns a “Facility Administrator”. This person will participate in all training sessions and be the leader in the NHSN application process. Other users will participate in training session applicable to their tasks.
- The Facility Administrator training is approx. 10-15 hours.
- All training must be completed before going to step 2.

Steps in Becoming a NHSN Hospital, cont'd

2. Read and accept the NHSN Rules of Behavior
3. Register with NHSN, using AHA #, CMS # or VA Station Code.
4. Obtain and Download Digital Certificate from CDC
 - Required for all users/computers that will send data to the CDC
 - Allows the CDC to track the validity of the sender
 - Ensures that the user and the CDC are communicating privately and securely
 - Assigned to the "user", not the "computer" - if a person uses multiple computers, they will need to install their certificate on each computer

Steps in Becoming a NHSN Hospital, cont'd

5. Enroll in NHSN by completing Facility Contact Information form and Facility Survey form.
6. Print, sign and return consent form to NHSN.
7. Once forms are received at the CDC, they will send an email with instructions for accessing the NHSN reporting system.
8. All enrollment steps are done online with the exception of the consent form signed by CEO.

Enrollment Process

- Prior to enrollment, obtained buy-in from leadership
 - Director of Infection Prevention
 - Medical Director of Infection Prevention
 - Chief Executive Officer
- Chose Facility Administrator
 - IP with primary surveillance responsibilities
 - IP with computer knowledge
 - IP with 10-15 hours available to complete training

Enrollment Process, cont'd

- Requested Information Technology assistance at the beginning of the enrollment process, specifically for downloading/installing/saving Digital Certificate
- Received rapid technical help from NHSN when requested.

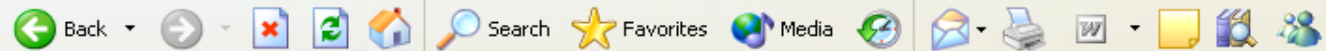
Reporting Process

- Set-up users and units in NHSN system
- Only entered data for Adult Med/Surg ICUs for the first 3 months
- Added other adult ICUs (Surgical ICU, Cardiothoracic ICU) and continued to report monthly for the rest of the 1st year
- Second year - added NICU
- Recommend two users
 - Facility Administrator
 - IP involved with surveillance

Setting Up Facility Data

NHSN 1.3.2 Locations - Microsoft Internet Explorer provided by Texas Health Resources

File Edit View Favorites Tools Help



Address https://sdn2.cdc.gov/nhsn/editorganization.do?method=showpage&subaction=locations&orgID=11316&navReset=true¤tmenu=menu_fac_actv Go Links >>

- NHSN Home
- Reporting Plan
- Patient
- Event
- Procedure
- Summary Data
- Analysis
- Surveys
- Users
- Facility
 - Customize Forms
 - Export Data
 - Facility Info
 - Add/Edit Component
 - Locations
 - Surgeons
- Group
- Log Out

Logged into Presbyterian Hospital (ID 11316) as SHARON.
Facility Presbyterian Hospital (ID 11316) is following PS component.

Locations

Instructions

- To **Add** a record, fill in the form with the required fields and any desired optional values. Then click on the **Add** button.
- To **Find** a record, click on the **Find** button. One or more fields can be filled in to restrict the search to those values.
- To **Edit** a record, perform a **Find** on the desired record. Click on the desired record to fill in its values into the form and edit the values. To save the changes, click on the **Save** button.
- To **Delete** one or more records, perform a **Find** on the desired record(s). Check the corresponding box(es), then click on the **Delete** button.
- Press the **Clear** button to start over with a new form.

Mandatory fields to "Add" or "Edit" a record marked with *

Your Code*:

Your Label*:

CDC Location Description*:

Status*:

Bed Size*: A bed size greater than zero is required for most inpatient locations.

Find

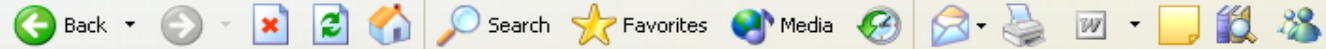
Add

Clear

Entering Monthly Reporting Plan

NHSN 1.3.2 Monthly Reporting Plan - Microsoft Internet Explorer provided by Texas Health Resources

File Edit View Favorites Tools Help



Address https://sdn2.cdc.gov/nhsn/planaction.do?method=showpage&mode=add&clear=Y&navReset=true¤tmenu=menu_ps_plan_add Go Links >>

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

Logged into Presbyterian Hospital (ID 11316) as SHARON.
Facility Presbyterian Hospital (ID 11316) is following PS component.

Add Monthly Reporting Plan

[Print PDF Form](#)

Mandatory fields marked with *

Facility ID*:

Month*:

Year*:

No NHSN Patient Safety Modules Followed this Month

Device-Associated Module

Locations CLA BSI DI VAP CAUTI

Procedure-Associated Module

Procedures SSI Post-procedure PNEU

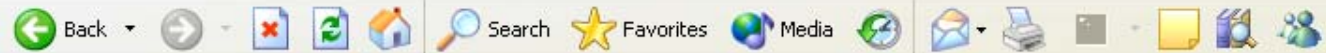
Medication-Associated Module

Antimicrobial Use and Resistance
Locations Microbiology Pharmacy

Entering Monthly Reporting Plan

NHSN 1.3.2 Monthly Reporting Plan - Microsoft Internet Explorer provided by Texas Health Resources

File Edit View Favorites Tools Help



Address <https://sdn2.cdc.gov/nhsn/planaction.do>

Go Links >>

- Patient**
- Event
- Procedure
- Summary Data
- Analysis
- Surveys
- Users
- Facility
- Group
- Log Out

Mandatory fields marked with *

[Print PDF Form](#)

Facility ID*: Presbyterian Hospital (ID 11316)

Month*: January

Year*: 2008

No NHSN Patient Safety Modules Followed this Month

Device-Associated Module

| Locations | CLA | BSI | DI | VAP | CAUTI |
|---|-------------------------------------|--------------------------|--------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> 1/3 ICU - MED/SURG ICU | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> 2ICU - SURGICAL ICU | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| <input type="checkbox"/> 4ICU - CT ICU | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Add Row

Clear All Rows

Copy from Previous Month

Procedure-Associated Module

| Procedures | SSI | Post-procedure PNEU |
|---|---|--------------------------|
| <input type="checkbox"/> HPRO - Hip prosthesis | <input type="checkbox"/> IN - Inpatient | <input type="checkbox"/> |
| <input type="checkbox"/> KPRO - Knee prosthesis | <input type="checkbox"/> IN - Inpatient | <input type="checkbox"/> |

Add Row

Clear All Rows

Copy from Previous Month

Medication-Associated Module

Antimicrobial Use and Resistance

| Locations | Microbiology | Pharmacy |
|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Add Rows

Clear All Rows

Copy from Previous Month

Adding an Event (VAP, CLABSI or SSI)

NHSN 4.6.0.12 NHSN Event - Microsoft Internet Explorer provided by Texas Health Resources

https://sdn7.cdc.gov/nhsn/eventaction.do

File Edit View Favorites Tools Help

NHSN 4.6.0.12 NHSN Event

Centers for Disease Control and Prevention

NHSN - National Healthcare Safety Network

NHSN Home | My Info | Contact us | Help | Log Out

Logged into Presbyterian Hospital (ID 11316) as SHARON.
Facility Presbyterian Hospital (ID 11316) is following the PS component.

Add 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*: Presbyterian Hospital (ID 11316) Event #: 2369229

Patient ID*: 12345

Social Security #: Secondary ID:

Last Name: First Name:

Middle Name:

Gender*: Date of Birth*: 10/29/1934

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*: 10/01/2009

Post-procedure: N - No

MRO Infection:

Done Internet 100%

Adding an Event (VAP, CLABSI or SSI)

NHSN 4.6.0.12 NHSN Event - Microsoft Internet Explorer provided by Texas Health Resources

https://sdn7.cdc.gov/nhsn/eventaction.do

Live Search

File Edit View Favorites Tools Help

NHSN 4.6.0.12 NHSN Event

Page Tools

MDRO Infection Surveillance*: No, this event pathogen/location is not in-plan for MDRO/CDAD Module

Location*: 2/3 ICU - MED/SURG ICU

Date Admitted to Facility*: 09/26/2009

Risk Factors [HELP](#)

Central line*: Y - Yes

Location of Device Insertion:

Date of Device Insertion: 09/26/2009

Event Details [HELP](#)

Specific Event*: LCBI - Laboratory confirmed bloodstream infection

Specify Criteria Used*

Signs & Symptoms (check all that apply)

Any patient

Fever

Chills

Hypotension

<=1 year old

Fever

Hypothermia

Apnea

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: Y - Yes

Done

Internet

100%

start

SSO Toolbar - ...

Inbox - Microso...

Microsoft Powe...

NHSN 4.6.0.12 ...

Search Desktop

Search

3:38 PM

Adding an Event (VAP, CLABSI or SSI)

NHSN 4.6.0.12 NHSN Event - Microsoft Internet Explorer provided by Texas Health Resources

https://sdn7.cdc.gov/nhsn/eventaction.do

File Edit View Favorites Tools Help

NHSN 4.6.0.12 NHSN Event

Pathogens [HELP](#)

Pathogen 1: SA - Staphylococcus aureus 10 drugs required

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

Pathogen 2:

Pathogen 3:

Custom Fields [HELP](#)

Done

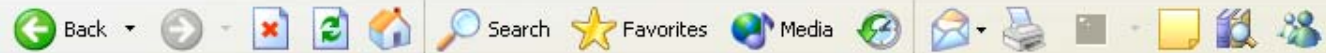
Internet 100%

start SSO Toolbar - ... Inbox - Microso... Microsoft Powe... NHSN 4.6.0.12 ... Search Desktop 3:37 PM

Entering Denominator Data

NHSN 1.3.2 Denominators for Intensive Care Unit (ICU)/Other locations (not NICU or SCA) - Microsoft Internet Explorer provided

File Edit View Favorites Tools Help



Address <https://sdn2.cdc.gov/nhsn/icudata.do>

Go Links >>



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

NHSN - National Healthcare Safety Network

[NHSN Home](#) | [My Info](#) | [Contact us](#) | [Help](#) | [Log Out](#)

[NHSN Home](#)

[Reporting Plan](#)

[Patient](#)

[Event](#)

[Procedure](#)

[Summary Data](#)

[Add](#)

[Find](#)

[Analysis](#)

[Surveys](#)

[Users](#)

[Facility](#)

[Group](#)

[Log Out](#)

Logged into Presbyterian Hospital (ID 11316) as SHARON.
Facility Presbyterian Hospital (ID 11316) is following PS component.

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

Mandatory fields marked with *

[Print PDF Form](#)

Facility ID*: 11316 (Presbyterian Hospital)

Location Code*: 1/3 ICU - MED/SURG ICU

Month*: October

Year*: 2007

Total Patient Days*: 265

Central Line Days*: 111

Urinary Catheter Days:

Ventilator Days*: 75

Save

Back

Data Analysis Options for CLABSI

NHSN 4.6.0.12 Analysis - Microsoft Internet Explorer provided by Texas Health Resources

https://sdn7.cdc.gov/nhsn/analysisrequest.do?method=ListAnalysisRequests&appModule=PS&navReset=true&optFo

File Edit View Favorites Tools Help

NHSN 4.6.0.12 Analysis

Import/Export
Analysis
Generate Data Sets
Output Options
Surveys
Users
Facility
Group
Log Out

- Device-Associated Module
 - All Device-Associated Events
 - CDC Defined Output
 - Line Listing - All Device-Associated Events [Run] [Modify]
 - Frequency Table - All Device-Associated Events [Run] [Modify]
 - Bar Chart - All Device-Associated Events [Run] [Modify]
 - Pie Chart - All Device-Associated Events [Run] [Modify]
 - Rate Table - All Device Associated Data [Run] [Modify]
 - Central Line-Associated BSI
 - CDC Defined Output
 - Line Listing - All CLAB Events [Run] [Modify]
 - Frequency Table - All CLAB Events [Run] [Modify]
 - Bar Chart - All CLAB Events [Run] [Modify]
 - Pie Chart - All CLAB Events [Run] [Modify]
 - Rate Table - CLAB Data for ICU-Other [Run] [Modify]
 - Control Chart - CLAB Data for ICU-Other [Run] [Modify]
 - Rate Table - UCAB/CLAB Data for NICU [Run] [Modify]
 - Control Chart - UCAB/CLAB Data for NICU [Run] [Modify]
 - Rate Table - CLAB Data for SCA [Run] [Modify]
 - Control Chart - CLAB Data for SCA [Run] [Modify]
 - Ventilator-Associated PNEU
 - Urinary Catheter-Associated UTI

Data Analysis Options for SSI

NHSN 4.6.0.12 Analysis - Microsoft Internet Explorer provided by Texas Health Resources

https://sdn7.cdc.gov/nhsn/analysisrequest.do?method=ListAnalysisRequests&appModule=PS&navReset=true&optFo

File Edit View Favorites Tools Help

NHSN 4.6.0.12 Analysis

Page Tools

Procedure-Associated Module

All Procedure-Associated Events

CDC Defined Output

- Line Listing - All Procedure-Associated Events
- Frequency Table - All Procedure-Associated Events
- Bar Chart - All Procedure-Associated Events
- Pie Chart - All Procedure-Associated Events

SSI

CDC Defined Output

- Line Listing - All SSI Events
- Frequency Table - All SSI Events
- Bar Chart - All SSI Events
- Pie Chart - All SSI Events
- SIR Table - SSI Data by Procedure
- SIR Table - SSI Data by Surgeon
- Rate Table - SSI Data by Procedure and Risk Index
- Control Chart - SSI Data by Procedure and Risk Index
- Rate Table - Specific Event SSI Rates by Procedure
- Control Chart - Specific Event SSI Data by Procedure
- Rate Table - SSI Data by Surgeon, Procedure, and...more
- Control Chart - SSI Data by Surgeon, Procedure, ...more

Post-Procedure PNEU

Done

Internet

100%

start

SSO Toolbar - ...

Inbox - Microso...

Microsoft Powe...

NHSN 4.6.0.12 ...

Search Desktop

3:41 PM

Challenges of NHSN

- Enrollment process, including training is approx. 10-15 hours for the Facility Administrator.
- Installing the Digital Certificate can be cumbersome and must be done annually – IT support can expedite this process.
- Standard definitions do not imply standard interpretations.
 - For CLABSI: What is the meaning of “organism from blood not related to an infection at another site”?

Challenges of NHSN, cont'd

- Collecting device days every day, at the same time of day – need to validate electronic counts against manual counts (difference +/- 5%)
- Numerator and denominator data should be submitted within 30 days of the end of the month.
- Difficult to provide surgical denominator data when procedure was performed at the end of the reporting month and ICD-9 coding must be included in the data provided.

Challenges of NHSN, cont'd

- Difficult to identify multiple procedures performed through the same incision during the same admission and within 24 hours of each other – requires combination of duration times and use of higher ASA score.
- Current solution = get line listing of all procedures sorted by patient name and scan for those with same name/same procedure date

Challenges of NHSN, cont'd

- Cannot participate in NICU CLABSI module unless "Clinical Sepsis" criteria is followed. This requires monitoring those infants who do not have a positive blood culture or those that have never had a blood culture drawn.
- Cannot participate in Procedure Associated Module unless all required data elements are entered for every procedure, not just infections, and there are many data elements required...

Advantages of NHSN

- Training is very thorough and explains, in detail, the “rules” for complying with NHSN surveillance protocols.
- Definitions of infections are standardized
- Software is user-friendly - minimal time spent entering “event” data and device days
- Only have to report one module for a minimum of 6 months to maintain membership
- National comparative data is available when reporting infection rates

Advantages of NHSN, cont'd

- Surgical denominator data can be downloaded if the user has an electronic surgical record and all required data elements are contained in each record
- Members are able to contact NHSN regarding surveillance questions and are able to receive assistance quickly
- Members have input into the “usability” of the definitions.
- Members get advanced notice of any changes coming to NHSN surveillance criteria
- Reporting mechanism for the State of Texas!

Questions?