



2014 NHSN Changes: Highlights for California Hospitals

February 2014



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Healthcare-Associated Infections Program
California Department of Public Health

Objectives

1. Describe key changes to NHSN protocols, the Patient Safety Component Manual, effective January 1, 2014
2. Review NHSN surveillance protocol, definition, and interpretation issues based on frequently asked questions to HAI Program Liaison IPs

National Healthcare Safety Network (NHSN)

- De facto U.S. HAI surveillance system
- Provides medical facilities, states, regions, and the nation with data collection and reporting capabilities needed to
 - identify infection prevention problems
 - benchmark progress of infection prevention efforts
 - comply with state and federal public reporting mandates
 - drive progress toward elimination of HAIs

www.cdc.gov/NHSN/aboutNHSN



NHSN Revisions Effective January 1, 2014

- Updated protocols, forms and guidance documents
 - Previous rules and forms are obsolete
 - ALL chapters updated and posted to NHSN website
 - Patient Safety Component Manual now dated January 2014
- ALL HAI surveillance beginning January 1 must be done according to new 2014 protocols
- NHSN system version 8.1. released 2/3/14
 - Data entry for January 2014 began thereafter
 - Annual survey must be completed by March 1st
 - Review location mapping, make corrections to start Jan 1
 - Complete 2014 annual reporting plan

Defining an HAI

(No change since 2013)

An infection is an HAI

1. If definition elements are first present together on or after the 3rd hospital day (Admission=day 1)
2. If some elements are present during first 2 hospital days and still present on day 3 when last definition element is met
3. If all elements occur within a timeframe that does not exceed a gap of 1 day between elements



Day 1	Day 2	Day 3	Day 4	Day 5	HAI or not?
A. Patient admitted with 2 of 3 elements of infection definition	2 of 3 elements for infection still met.	No additional elements.	3 of 3 elements for infection met		HAI – all 3 elements required for infection met on or after hospital day 3; Event date is day 4
B. Patient with abdominal wound. APPY 4 days prior; Temp 38.6°C	No additional symptoms	Superficial incision opened by MD			SSI - criterion met on 3 rd hospital day
C. Patient with central line in place 5 days	Fever 38.4°C Blood culture positive for <i>Staph epidermidis</i> x1	Afebrile	Afebrile	Blood culture positive for <i>Staph epidermidis</i> x1	Not CLABSI - more than 1 day gap between elements

Day 1	Day 2	Day 3	Day 4	Day 5	HAI or not?
D. Patient admitted to ICU Central Line inserted and/or accessed	No CLABSI elements	Line still in place. Positive blood culture <i>S. aureus</i>			CLABSI – Central line was in place >2 calendar days on date of event
E. Patient on ward. Central line inserted	No CLABSI elements	Central line removed	Positive blood culture <i>S. aureus</i>		CLABSI - Central line in place >2 calendar days, and in place the day before the event
F. Patient with central line removed after 4 days	Fever 38.3°C	Blood culture positive, <i>S. epidermidis</i> x2			HAI , but does not meet CLABSI definition - Line not in place day of or day before LCBI Criterion 2 was met on day 3.

Defining an HAI

(No change since 2013)

- No need to “define” infection type for CDI/MDRO surveillance
- ALL positive CDI, MRSA BSI, and VRE BSI lab tests must be reported starting at day 1
- HAI vs. community-onset determined by algorithm



Inpatient vs. Outpatient

(No Change since 2013)

- NHSN Inpatient
 - A patient whose date of admission to the healthcare facility and the date of discharge are different calendar days
- NHSN Outpatient
 - A patient whose date of admission to the healthcare facility and the date of discharge are the same day

Device-Associated HAI

(No change since 2013)

- Considered “device-associated” only if **device was in place for >2 calendar days** when all elements of the definition criterion are first present together
- HAI occurring on day of device discontinuation or next day is considered device-associated if device was in place >2 calendar days



Date of Event

(No change since 2013)

- Date of event is the date when the **last element used to meet the infection criterion** are first present together
- Synonyms: infection date, date of infection



NHSN Patient Safety Manual, Chapter 2:
Identifying Healthcare-associated Infections in NHSN

Location Mapping

(No change since 2013)

- NHSN location and comparison data may no be longer accurate if patient mix has changed in an ICU/ward
- Check location accuracy by verifying
 1. Acuity level (i.e. ICU, special care, ward)
 2. Type of service (e.g. orthopedic, pediatric, etc.) using 80/20 rule
 3. For mixed medical/surgical ICU/ward, use 60/40 rule. Re-map as either "general medical" or "general surgical"
 4. Do not use "mixed acuity" as a ward type. Re-map.



NHSN Patient Safety Manual, Chapter 15

NHSN newsletter Dec.2013 volume 8 issue 4 www.cdc.gov/nhsn

2-Day Transfer Rule

(Clarification 2014)

- If all definition elements are present on the day of transfer or the next day from one inpatient location to another, HAI is attributed to the ICU/ward that transferred the patient
- Applies to device-associated HAI only (CLABSI, CAUTI)
- Applies when patient transfers from one hospital to another
 - Receiving hospital must share information about the device-associated HAI with the transferring hospital
 - Transfer hospital must report HAI

Multiple Episodes of HAI in Same Patient

(Clarification 2014)

- Positive lab test results greater than 14 days apart are reported as another infection event for CDI, MRSA-/VRE-BSI, and VAE
- No set time period between episodes of CLABSI, CAUTI, or SSI has been established to qualify as a second infection
 - Investigate if original infection resolved before reporting a second infection at the same site



NHSN Patient Safety Manual, Chapter 2 page 2:
Identifying Healthcare-associated Infections in NHSN

CLABSI Surveillance

Defining CLABSI

(No change since 2013)

- Date of Event is now the date that the **last element** used to meet the laboratory-confirmed BSI criterion occurred
 - Criterion elements must occur within a timeframe that does not exceed a gap of 1 calendar day
 - To meet CLABSI definition, the central line must be
 - in place for >2 days before all elements of laboratory-confirmed BSI criterion were first present together
- AND**
- in place on day of the event or the day before (insertion=day 1)



Central Line "Access" (Clarification 2014)

- If admitted with a central line in place (e.g., tunneled or implanted central line), **day of first access** is considered Day 1
 - Access is defined as infusion or withdrawal through the line
- Central line day count for patient begins on 1st day of access
- Patients accessing their own line during hospital stay are not exempt from HAI CLABSI



CLABSI Due to Common Skin Commensals

(No change since 2013)

- Change to timeframe for determining CLABSI due to common commensals
 - Two positive blood cultures still needed to meet LCBI criterion 2
- Blood cultures must be collected within 2 days
 - 1st blood collection is day 1
 - Example: blood cultures performed on Monday result in 1 positive. Tuesday would be within the required timeframe to meet definition. Positive blood culture on Wednesday too far from 1st positive to meet criteria



Mucosal Barrier Injury BSI

(New 2014)

- Surveillance for MBI-LCBI is **required**
 - No longer optional as in 2013
 - When performing surveillance for LCBI, determine if MBI condition is present
- ALL CLABSI whether LCBI or MBI-LCBI must be reported



MBI BSI Definition

(Partially new 2014)

- Pertains only to patients who are post-allogeneic stem cell transplant or severely neutropenic
- MBI BSI when positive blood culture with an MBI BSI-eligible pathogen* occurs in a neutropenic patient** with
 - Absolute neutrophil count (ANC) or total white blood cell count (WBC) <500 cells/mm³ for any 2 days within a 7-day time period
 - 7-day surveillance period to include positive blood culture collection date (Day 1), plus 3 calendar days before and 3 calendar days after

NHSN Patient Safety Manual, Chapter 4: CLABSI

*Eligible enterobacteriaceae – Table 3

**Criteria and examples for neutropenia – Table 4



Risk Factors

Central line*: 

Any hemodialysis catheter present: 

Location of Device Insertion: 

Date of Device Insertion: 

Event Details

Specific Event>: 

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 commensal from ≥ 2 blood cultures

Underlying Conditions for MBI-LCBI (check all that apply)

- Allo-SCT with Grade ≥ 3 GI GVHD
- Allo-SCT with diarrhea
- Neutropenia

Died**: 

Discharge Date: 

Pathogens Identified: 

Table 4. Examples Illustrating the MBI-LCBI Criteria for Neutropenia

		Day -7	Day -6	Day -5	Day -4	Day -3	Day -2	Day -1	Day 1*	Day 2	Day 3	Day 4
Pt. A	WB C	100	800	400	300	ND	ND	320	400 + BC* w/ <i>Candida</i> spp. x1	ND	550	600
Pt. B	ANC	ND	410	130	ND	ND	120	110	ND +BC* w/ viridans strep x2 and fever >38°C	110	300	320
Pt. C	WB C	100	800	400	300	ND	ND	ND	600 + BC* w/ <i>Candida</i> spp. x1	230	ND	400

ND = not done

*Day the blood specimen that was positive was collected

Patient A meets MBI-LCBI criterion 1, sub-criterion 2: Positive blood culture with intestinal organism (*Candida* spp.) and neutropenia (2 separate days of WBC <500 cells/mm³ occurring on the date the positive blood culture was collected [Day 1] or during the 3 days before or the 3 days after that date). In this case, the Day 1 value = 400, and Day -1 value = 320.

Patient B meets MBI-LCBI criterion 2, sub-criterion 2: At least 2 positive blood cultures with viridans group streptococci (in this case, 2 positive), and fever >38°C and neutropenia (2 separate days of ANC <500 cells/mm³ occurring on the date the positive blood culture was collected [Day 1] or during the 3 days before or the 3 days after that date). In this case, the Day -1 value = 110 and



Determining CLABSI vs Secondary BSI

(Clarification 2014)

- Extensive review and clarifications in NHSN protocol (Chapter 4)
 - Expanded with more case scenarios for 2014
 - Includes detailed examples for determining if a BSI is primary or secondary to another site and therefore not included in CLABSI data

NHSN Patient Safety Manual, Chapter 4: CLABSI, Appendix 1



CDI/MDRO Surveillance

(No changes in 2014)

MDRO/CDI Reporting

(New 2014)

- Required to report CDI testing methods last month of each quarter as part of summary data

NHSN Patient Safety Manual, Chapter 12: MDRO/CDI
LabID for CDI Table of Instructions (CDC 57.127)



SSI Surveillance

Operative Procedure Duration

(New 2014)

- Procedure/Surgery Start Time (PST) – unchanged
- Procedure/Surgery Finish Time (PF) – defined as
 - Instrument and sponge count completed/verified
 - Post op radiologic studies complete
 - Dressings and drains secured
 - Surgeon completes all procedure related activities



Primary Closure

(New 2014)

- Defined as closure of all tissue levels
 - Regardless of presence of wires, wicks, drains, or other devices or objects extruding through the incision
 - Includes surgeries where the skin is closed by some means, including “loosely closed”
 - If any portion of the incision is closed at the skin level, designate as primary closure



Non-primary Closure

(New 2014)

- Not meeting definition of primary closure is by default non-primary closure
- Non-primary closure includes
 - Superficial layers left completely open (deep tissue layers may be closed by some means)
 - Deep and superficial layers both left completely open

Note: For 2014 data, SSI SIRs will include only those procedures reported with a primary closure method



Interim Guidance to Capture Closure Type

(New 2014)

- Reporting closure type for all procedures will be required in 2015
 - Begin working with your hospital IT time to capture closure data electronically for upload
- If unable to report primary closure on all surgical procedures at this time
 - When reporting an SSI and linking it to a procedure, verify closure type by reviewing the operative report
 - For SSI following procedure not closed, add “non-closure” to operative procedure record



Height and Weight

(New 2014)

- All 2014 surgical procedure records must include patient's height and weight
- Height can be recorded in feet/inches or meters
- Weight can be in pounds or kilograms
 - Report last weight recorded prior to the surgical procedure



Diabetes

(New 2014)

- Reporting patient's diabetes status (Y or N) for all procedures will be required in 2015
 - Begin working with your hospital IT time to capture closure data electronically for upload
- NHSN definition based on documentation in the medical record of diabetes management by insulin or non-insulin anti-diabetic agent
- Does NOT qualify as a diabetic diagnosis
 - Management by diet alone
 - Patient receiving insulin for peri-operative control of hyperglycemia only



Additional SSI Changes

(New 2014)

- “Attending physician” may be interpreted to include surgeon(s), infectious disease or other physician on the case, emergency physician, or physician’s designee (NP or PA)
- When multiple tissue layers are involved in an SSI, the report SSI to reflect the deepest tissue layer involved
- All appendectomy procedures (APPY) must be reported INCLUDING incidental (available via ICD9 coding)
- All exploratory laparotomy procedures (XLAP) must be reported in addition to other procedures performed at same time (available via ICD9 coding)



Reporting HPRO and KPRO SSI (New 2014)

Ethnicity:

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

Event Information [HELP](#)

Event Type*: SSI - Surgical Site Infection Date of Event*:

NHSN Procedure Code*: HPRO - Hip prosthesis

ICD-9-CM Code: Outpatient Procedure*: N - No

Procedure Date*: 01/12/2014 **Event is not Linked**

MDRO Infection Surveillance*: No, this infection's pathogen/location are not in-plan for Infection Surveillance in the MDRO/CDI Module

Location:

Date Admitted to Facility*: 01/11/2014

Risk Factors

Event Details [HELP](#)

Specific Event*:

Detected*: BONE - Osteomyelitis
 DIP - Deep Incisional Primary
 PJI - Periprosthetic Joint Infection
 SIP - Superficial Incisional Primary

Secondary Bloodstream Infection*:

Died**:

Discharge Date:

Pathogens Identified*: If Yes, specify below ->

Pathogens [HELP](#)

Custom Fields [HELP](#)

“Periprosthetic joint infection”

- New infection type
- Used for specific organ space SSI following HPRO or KPRO

CAUTI and VAE Updates

Courtesy Review Only
Reporting NOT Required by CA Mandates

Note: California DOES mandate that hospitals have CAUTI and VAP prevention strategies in place



CAUTI Surveillance

(New 2014)

- Record previous admission date when patient admitted with UTI attributed to previous hospital admission

VAP/VAE Surveillance

(New 2014)

- Changed to location based surveillance
 - Adult inpatient locations only
 - No VAE surveillance in Pediatric or neonatal locations
- List of antimicrobial agents for IVAC refined
- Daily Minimum PEEP or FIO2 defined as the lowest setting during a day that is maintained for at least one hour
- For Possible/Probable VAP
 - Greater flexibility if lab uses direct examination of respiratory secretions
 - Specified in new purulent respiratory secretions criterion



Summary

- Multiple changes to NHSN surveillance and reporting necessary to improve quality of data
 - Not all changes/updates included in this presentation
- READ all updated January 2014 protocols (chapters) in the NHSN Patient Safety Component Manual
- Refer often to NHSN surveillance definitions as written
 - Don't rely on memory only

Questions?

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For CDPH data-related questions, you may also
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