



NHSN Patient Safety Component Specific Event Criteria

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Hello and welcome to the NHSN Patient Safety Component Specific Event Criteria training. My name is Maggie Dudeck and today I will review a new piece of NHSN – Specific Event Criteria. This training session assumes you have taken the NHSN Patient Safety Overview, Device-associated Module, and Procedure-associated Module trainings.



Major & Specific Events



AJIC Horan, Andrus, and Dudeck June 2008 311

Table 1. CDC/NHSN major and specific types of health care-associated infections

Major Event Type	Specific Event Type
UTI	SUTI Symptomatic urinary tract infection
	ASB Asymptomatic bacteriuria
	OUTI Other infections of the urinary tract
SSI	Surgical site infection
	SP Superficial incisional primary SSI
	SE Superficial incisional secondary SSI
	DIP Deep incisional primary SSI
	DIS Deep incisional secondary SSI
	Organ/space Organ/space SSI. Indicate specific type:
	• BONE • LUNG • BRST • MED • CARD • MEN • DISC • ORAL • EAR • GREP

Table 1. Continued

EENT	Eye, ear, nose, throat, or mouth infection
	CONJ Conjunctivitis
	EYE Eye, other than conjunctivitis
	EAR Ear, mastoid
	ORAL Oral cavity (mouth, tongue, or gums)
	SINU Sinusitis
UR	Upper respiratory tract, pharyngitis, laryngitis, epiglottitis
GI	Gastrointestinal system infection
	GE Gastroenteritis
	GIT Gastrointestinal (GI) tract
	HEP Hepatitis
	IAB Intraabdominal, not specified elsewhere
NEC Necrotizing enterocolitis	
LRI	Lower respiratory tract infection, other than pneumonia
	BRON Bronchitis, tracheobronchitis, tracheitis, without evidence of pneumonia

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.

NHSN classifies Healthcare-associated infections into 13 major event types and 49 specific event types. This screen shows a snapshot from the recently published CDC/NHSN HAI definitions document, published in the American Journal of Infection Control, June 2008.. You can see that table 1 first lists the Major Event type and then, specific event type. For example, UTI is a major event, and the specific UTI events are SUTI, ASB, and OUTI.



Major & Specific Events



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	• BONE • LUNG
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	• CARD • MEN
	• DISC • ORAL
	• EAR • GREP

UTI-URINARY TRACT INFECTION
SUTI-Symptomatic urinary tract infection

A symptomatic urinary tract infection must meet at least 1 of the following criteria:

1. Patient has at least 1 of the following signs or symptoms with no other recognized cause: fever ($>38^{\circ}\text{C}$), urgency, frequency, dysuria, or suprapubic tenderness
and
patient has a positive urine culture, that is, $\geq 10^5$ microorganisms per cc of urine with no more than 2 species of microorganisms.
2. Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever ($>38^{\circ}\text{C}$), urgency, frequency, dysuria, or suprapubic tenderness
and
at least 1 of the following
 - a. positive dipstick for leukocyte esterase and/or nitrate
 - b. pyuria (urine specimen with ≥ 10 white blood cell [WBC]/ mm^3 or ≥ 3 WBC/high-power field of urine specimen)

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.

Further, each specific event is defined by one or more criterion. In this example, we are showing the definition for SUTI.



What are “Specific Event Criteria”?

- Correspond to criteria used in CDC HAI definitions
- Combination of criteria translate to a specific HAI definition (e.g., LCBI, criterion 2)
- Required after indicating specific event
- Available for BSI, PNEU, UTI, SSI, and Custom Events (CDC-Defined)

Now that we have defined specific event, it’s time to explain specific event criteria. Specific event criteria corresponds to the criteria used in the CDC definitions. A combination of criteria translates to a particular CDC definition. We’ll show a couple of examples in a few minutes.

The specific event criteria are required after the user indicates the specific event in the NHSN application. Currently, there are 5 patient safety event forms that include specific event criteria: BSI, PNEU, UTI, SSI, and the custom event form. On the custom event form, the criteria can only be used for CDC-defined non-protocol events, for example a CNS infection.



Purposes of “Specific Event Criteria”

- To validate CDC HAI definitions
- Further educate on CDC HAI definitions

The Specific event criteria were added to NHSN in order to validate that the CDC definitions are used. Further, the addition of the criteria fields will educate users of NHSN on how to appropriately use the definitions to define a specific event.



BSI Form



NHSN National Healthcare Safety Network		Primary Bloodstream Infection (BSI)		CMB No. 0920-0060 Exp. Date: 03-31-2011	
*required for saving		**required for completion		Page 1 of 3	
Facility ID:		Event #:			
*Patient ID:		Social Security #:			
Secondary ID:					
Patient Name, Last:		First:		Middle:	
*Gender: F M		*Date of Birth:			
Ethnicity (specify):		Race (specify):			
*Event Type: BSI		*Date of Event:			
Post-procedure BSI: Yes No		Date of Procedure:			
NHSN Procedure Code:		ICD-9-CM Procedure Code:			
*MDRO Infection: Yes No		*Date Admitted to Facility:		*Location:	
Risk Factors					
*If ICU/Other locations, Central line:		Yes No		Location of Device Insertion: _____	
*If Specialty Care Area,					
Permanent central line:		Yes No		Date of Device Insertion: __/__/____	
Temporary central line:		Yes No			
*If NICU,					
Non-umbilical Central line:		Yes No			
Umbilical catheter:		Yes No			
Birth weight (grams):					
Event Details					
*Specific Event:					
<input type="checkbox"/> Laboratory-confirmed		<input type="checkbox"/> Clinical sepsis			
*Specify Criteria Used:					
<u>Signs & Symptoms (check all that apply)</u>			<u>Laboratory (check one)</u>		
<u>Any patient</u> <u>≤ 1 year old</u>					
<input type="checkbox"/> Fever		<input type="checkbox"/> Fever		<input type="checkbox"/> Recognized pathogen from one or more blood cultures	
<input type="checkbox"/> ...		<input type="checkbox"/> ...		<input type="checkbox"/> Commercially confirmed blood	

Patient Info

Event Info

Risk Factors

Event Details

Let's take a minute to quickly review the layout of the Patient Safety event forms. This is a snapshot of the Primary BSI form. The first section includes patient information, such as name and gender. Next is the Event information section, which includes the data fields such as date of event and location, among others. In the middle of the form is the Risk factors section, followed by the Event Details section. The Specific event criteria are part of the Event Details section, under the label "Specify criteria used".

The image shows a screenshot of the 'Specify Criteria Used' section of a BSI Form. The form is divided into several sections: 'Event Details', '*Specify Criteria Used', and a bottom section for 'Died' and 'Pathogens Identified'. The '*Specify Criteria Used' section is further divided into three categories: 'Signs & Symptoms (check all that apply)', 'Laboratory (check one)', and 'Clinical Diagnosis (CSEP only)'. Two orange arrows point to the 'Any patient' and '≤1 year old' options under 'Signs & Symptoms'. A third orange arrow points to the 'Clinical Diagnosis (CSEP only)' section.

Event Details			
*Specific Event:			
<input type="checkbox"/> Laboratory-confirmed	<input type="checkbox"/> Clinical sepsis		
*Specify Criteria Used:			
<u>Signs & Symptoms (check all that apply)</u>		<u>Laboratory (check one)</u>	
<input type="checkbox"/> Any patient	<input type="checkbox"/> ≤1 year old	<input type="checkbox"/> Recognized pathogen from one or more blood cultures	
<input type="checkbox"/> Fever	<input type="checkbox"/> Fever	<input type="checkbox"/> Common skin contaminant from ≥2 blood cultures	
<input type="checkbox"/> Chills	<input type="checkbox"/> Hypothermia	<input type="checkbox"/> Blood culture not done <u>or</u> no organisms detected in blood	
<input type="checkbox"/> Hypotension	<input type="checkbox"/> Apnea		
	<input type="checkbox"/> Bradycardia		
		<u>Clinical Diagnosis (CSEP only)</u>	
		<input type="checkbox"/> Physician institutes appropriate antimicrobial therapy	
**Died: Yes	No	BSI Contributed to Death: Yes	No
Discharge Date:		*Pathogens Identified: Yes No *If Yes, specify on page 2	

Now let's zoom in to the Event Details section of the BSI form. Notice the "Specify Criteria Used" section is separated by the type of criteria: signs & symptoms, laboratory, and clinical diagnosis. Further, on this form, Signs & symptoms are separated by "any patient" and ≤ 1 year old.

It's important to note that the list of specific event criteria will differ for each form.



Specify Criteria Used: PNEU Form



Event Details

*Specific Event: PNU1 PNU2 PNU3

*Specify Criteria Used: (check all that apply)

X-Ray

New or progressive and persistent infiltrate

Signs & Symptoms - A (check at least one)

Fever

Leukopenia or leukocytosis

Altered mental status (in ≥ 70 y.o.)

Signs & Symptoms - B

New onset/change in sputum

New onset/worsening cough, dyspnea, tachypnea

Rales or bronchial breath sounds

Worsening gas exchange

Hemoptysis

Pleuritic chest pain

Temperature instability

Apnea, tachycardia, nasal flaring with retraction of chest wall or grunting

Hypothermia

Wheezing, rales, or rhonchi

Cough

Bradycardia or tachycardia

*Immunocompromised: Yes No

Laboratory

Consolidation

Cavitation

Pneumatoceles (in ≤ 1 y.o.)

Positive blood culture

Positive pleural fluid culture

Positive quantitative culture from LRT specimen

$\geq 5\%$ BAL cells w/bacteria

Histopathologic exam w/ abscess formation, positive quantitative culture of lung parenchyma, or lung parenchyma invasion by fungal hyphae

Positive culture of virus or *Chlamydia*

Positive detection of viral antigen or antibody

4-fold rise in paired sera for pathogen

Positive PCR for *Chlamydia* or *Mycoplasma*

Positive micro-IF test for *Chlamydia*

Positive culture or micro-IF of *Legionella* spp

L. pneumophila serogroup 1 antigens in urine

4-fold rise in *L. pneumophila* antibody titer

Matching positive blood & sputum cultures w/ *Candida* spp

Fungi or *Pneumocystis carinii* from LRT specimen

This is a screen shot of the PNEU form. This form includes x-ray criteria in addition to the 2 signs & symptoms categories and the laboratory criteria. If you look closely, you'll notice that the order of the criteria corresponds to the order on the PNEU flow diagram, therefore making it easier for the user to follow along. Also note that we have added a field to the PNEU form: Immunocompromised. As a reminder, the CDC definition of Immunocompromised can be found in footnote 13 of the PNEU definition.



Specify Criteria Used: "Other" Criteria*

- Other evidence of infection found on direct exam, during surgery, or by diagnostic tests
- Other signs and symptoms
- Other positive laboratory tests

Also...

- Radiographic evidence of infection

* Per specific event criteria

A couple of forms, SSI and Custom Event, cover a large number of specific event types. Because of this, there are criteria available that are generalized. These criteria are: other evidence of infection found on direct exam, during surgery, or by diagnostic test; other signs and symptoms; other positive laboratory tests; and also radiographic evidence of infection.

These are only to be used if the criterion appearing in the CDC definition is not explicitly stated on the form.

Let's look at some examples, translating the CDC definitions to the data collection forms.



Example #1

- John Doe, patient on MICU
- Central line inserted
- Bloods drawn for culture
- Culture positive for MSSA
- No other infections present

This first example is a simple one. John Doe was an inpatient on the medical ICU. He had bloods drawn for culture and the results turned up positive for methicillin-sensitive staph aureus. John Doe had no other infections present.



Example #1: BSI-LCBI

LCBI-Laboratory-confirmed bloodstream infection

LCBI criteria 1 and 2 may be used for patients of any age, including patients ≤ 1 year of age.

LCBI must meet at least 1 of the following criteria:

- ✓ 1. Patient has a recognized pathogen cultured from 1 or more blood cultures
and
organism cultured from blood is *not* related to an infection at another site. (See Notes 1 and 2.)
2. Patient has at least 1 of the following signs or symptoms: fever ($>38^{\circ}\text{C}$), chills, or hypotension
and
signs and symptoms and positive laboratory results are not related to a

In this example, John Doe met LCBI criterion 1, in which the patient has a recognized pathogen cultured from 1 or more blood cultures & it's not related to an infection at another site.



Example #1: BSI-LCBI BSI Form

Event Details

*Specific Event:
 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 checked="" type="checkbox"/> Recognized pathogen from one or more blood cultures
<input type="checkbox"/> Chills	<input type="checkbox"/> Hypothermia	<input 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

On the BSI form, we can simply check Laboratory-confirmed for the specific event, and check “Recognized pathogen from one or more blood cultures” under the Laboratory heading for “Specify Criteria Used”.



Example #1: BSI-LCBI

Laboratory (check one)

Recognized pathogen from one or more blood cultures

Common cultures

Blood cultures detected

NHSN National Healthcare Safety Network
Primary Bloodstream Infection (BSI) Form
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OMB No. 0920-0668
 Exp. Date: 02-29-2009

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

This is also a good time to talk about pathogens. In this case, the pathogen can not be a common skin contaminant, such as coag negative staph, per the CDC definition for LCBI criterion 1. When entering an event into NHSN, rules will be enforced to prevent the user from saving the record with a pathogen that does not correspond with the criteria selected.



Example #2

- Jane Doe had a spinal fusion (FUSN) performed
- Increased back pain
- MRI revealed abscess in the spinal epidural space
- Surgeon opened wound & drained abscess; specimen to lab for culture
- Culture positive for *Pseudomonas aeruginosa*

Example number 2 is a bit more complicated. Jane Doe had a spinal fusion procedure performed. A few days later she experienced increased back pain. An MRI revealed an abscess in the spinal epidural space. The surgeon opened the wound and the abscess was drained. A specimen was sent to the lab for culture. The culture was positive for *Pseudomonas aeruginosa*.



Example #2: SSI-SA



An organ/space SSI must meet the following criterion:



Infection occurs within 30 days after the operative procedure if no implant¹ is left in place or within 1 year if implant is in place and the infection appears to be related to the operative procedure

and



infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure

and

patient has at least 1 of the following:



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

This example demonstrates using the criteria for an SSI-Spinal Abscess infection. First, since this is an organ/space SSI, we must meet the organ/space criterion first. This event meets the first two portions: infection occurs within 30 days (or 1 year if implant) and involves an organ or space. Please note that these first two criteria met are not written in the criteria section of the form, but are assumed to be met if you select this specific event type.

This event meets part c of the organ/space criterion, which is “an abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination”.



Example #2: SSI-SA



SA-Spinal abscess without meningitis

An abscess of the spinal epidural or subdural space, without involvement of the cerebrospinal fluid or adjacent bone structures, must meet at least 1 of the following criteria:

- ✓ 1. Patient has organisms cultured from abscess in the spinal epidural or subdural space.
- 2. Patient has an abscess in the spinal epidural or subdural space seen during a surgical operation or at autopsy or evidence of an abscess seen during a histopathologic examination.
- 3. Patient has at least 1 of the following signs or symptoms with no other recognized cause: fever ($>38^{\circ}\text{C}$), back pain, focal tenderness, radiculitis, paraparesis, or paraplegia
and
at least 1 of the following:
 - a. organisms cultured from blood
 - ✓ b. radiographic evidence of a spinal abscess (eg, abnormal findings on myelography, ultrasound, CT scan, MRI, or other scans [gallium, technetium, etc]).*and*
if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy.

Further, we must also look at the definition for Spinal abscess. Jane Doe meets both criteria 1 and 3(b). The patient had organisms cultured from an abscess in the spinal epidural space, and the patient had back pain and radiographic evidence of a spinal abscess.

Now let's look at the paper form...

Example #2: SSI-SA

Event Details

*Specific Event:

- Superficial Incisional Primary (SIP)
- Superficial Incisional Secondary (SIS)
- Organ/Space (specify site): **SA**
- Deep Incisional Primary (DIP)
- Deep Incisional Secondary (DIS)

*Specify Criteria Used (check all that apply):

Signs & Symptoms

- Purulent drainage or material
- Pain or tenderness (back pain)
- Localized swelling
- Redness
- Heat
- Fever
- Incision deliberately opened by surgeon
- Wound spontaneously dehisces
- Abscess
- Hypothermia
- Apnea
- Bradycardia
- Lethargy
- Cough
- Nausea
- Vomiting
- Dysuria
- Other evidence of infection found on direct exam, during surgery, or by diagnostic tests*
- Other signs & symptoms*

Laboratory

- Positive culture (organisms cultured from abscess)
- Not cultured
- Positive blood culture
- Blood culture not done or no organisms detected in blood
- Positive Gram stain when culture is negative or not done
- Other positive laboratory tests*
- Radiographic evidence of infection

Clinical Diagnosis

- Physician diagnosis of this event type
- Physician institutes appropriate antimicrobial therapy*

*per organ/space specific site criteria

Remember, criterion 1 for spinal abscess stated “Patient has organisms cultured from abscess in the spinal epidural or subdural space.” Therefore, we indicate Criterion 1 on the form by checking both “positive culture” and “abscess”. Please note that you would have also checked “Abscess” in order to meet criterion A of the SSI organ/space definition.

This event also met Criterion 3b – the patient had back pain (indicated by checking pain or tenderness) and radiographic evidence of infection.



Example #3

- Jessica Doe, 8 months old, admitted to the PICU
- Develops fever and nasal discharge and apnea
- Respiratory secretions test positive for respiratory syncytial virus (RSV)

This third example will demonstrate the collection of criteria for a non-protocol event.

Jessica is an 8 month old PICU patient. She developed fever, nasal discharge and apnea. Her respiratory secretions tested positive for RSV.

Let's see if Jessica meets the definition for an eye, ear, nose and throat upper respiratory infection.



Example #3: EENT-UR



UR-Upper respiratory tract, pharyngitis, laryngitis, epiglottitis

Upper respiratory tract infections must meet at least 1 of the following criteria:

1. Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever ($>38^{\circ}\text{C}$), erythema of pharynx, sore throat,

topathologic examination.

3. Patient ≤ 1 year of age has at least 2 of the following signs or symptoms with no other recognized cause: fever ($>38^{\circ}\text{C}$ rectal), hypothermia ($<37^{\circ}\text{C}$ rectal), apnea, bradycardia, nasal discharge, or purulent exudate in throat

and

at least 1 of the following:

- a. organisms cultured from the specific site
- b. organisms cultured from blood
- c. positive antigen test on blood or respiratory secretions
- d. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen
- e. physician diagnosis of an upper respiratory infection.

Looking at criterion 3 for UR, Jessica Doe meets the signs & symptoms – that is, fever, apnea, and nasal discharge. Additionally, part C of criterion 3 is met, which reads positive antigen test on blood or respiratory secretions.

Now that we have defined this event as an UR, let's take a look at how this translates to the data collection form...



Example #3: EENT-UR



NHSN Custom Event		OMB No. 0920-0656 Exp. Date: 03-31-2011
Page 1 of 3		
* required for saving		
Facility ID:	Event #:	
*Patient ID:	Social Security #:	
Secondary ID:		
Patient Name, Last:	First:	Middle:
*Gender: M F	*Date of Birth:	
Ethnicity (specify):	Race (specify):	
Event Details		
*Event Type:	*Date of Event:	
Post Procedure Event: Yes No	Date of Procedure:	
NHSN Procedure Code:	ICD-9-CM Procedure Code:	
*MDRO/CDAD Infection: No	Date Admitted to Facility:	
Location:		
Specific Event Type:		
Specify Criteria Used (check all that apply)		
<u>Signs & Symptoms</u>		
<input type="checkbox"/> Abscess	<input type="checkbox"/> Heat	<u>Laboratory or Diagnostic Testing</u>
<input type="checkbox"/> Apnea	<input type="checkbox"/> Hypotension	
<input type="checkbox"/> Vomiting	<input type="checkbox"/> Hypothermia	
<input type="checkbox"/> Bradycardia	<input type="checkbox"/> Lethargy	
<input type="checkbox"/> Redness	<input type="checkbox"/> Nausea	
<input type="checkbox"/> Cough	<input type="checkbox"/> Suprapubic tenderness	
<input type="checkbox"/> Dysuria		
<input type="checkbox"/> Fever		
<input type="checkbox"/> Acute onset of diarrhea (liquid stools for > 12 hours)		
<input type="checkbox"/> Purulent drainage or material		
<input type="checkbox"/> Pain or tenderness		
<input type="checkbox"/> New onset/change in sputum, increased secretions or increased suctioning		
<input type="checkbox"/> Localized swelling		
<input type="checkbox"/> Persistent microscopic or gross blood in stools		
<input type="checkbox"/> Wheezing, rales or rhonchi		
<input type="checkbox"/> Evidence of infection found on direct examination		
	<u>Clinical Diagnosis</u>	

The data collection form that will be used for this event is the Custom Event form. It should be noted that when entering non-protocol events into NHSN, such as this Upper respiratory infection, it is not required to indicate the specific event. However, should the specific event be selected, you will be required to enter a valid combination of specific event criteria in order to save the record.



Example #3: EENT-UR



Specific Event Type: **UR**

Specify Criteria Used (check all that apply)

<u>Signs & Symptoms</u>		<u>Laboratory or Diagnostic Testing</u>
<input type="checkbox"/> Abscess	<input type="checkbox"/> Heat	<input type="checkbox"/> Positive culture
<input type="checkbox"/> Apnea	<input type="checkbox"/> Hypotension	<input type="checkbox"/> Not cultured
<input type="checkbox"/> Vomiting	<input type="checkbox"/> Hypothermia	<input type="checkbox"/> Positive blood culture
<input type="checkbox"/> Bradycardia	<input type="checkbox"/> Lethargy	<input type="checkbox"/> Blood culture not done or no organisms detected in blood
<input type="checkbox"/> Redness	<input type="checkbox"/> Nausea	<input type="checkbox"/> Positive Gram stain when culture is negative or not done
<input type="checkbox"/> Cough	<input type="checkbox"/> Suprapubic tenderness	<input type="checkbox"/> >15 colonies cultured from IV cannula tip using semiquantitative culture method
<input type="checkbox"/> Dysuria		<input type="checkbox"/> Positive culture of pathogen
<input checked="" type="checkbox"/> Fever		<input type="checkbox"/> Positive culture of skin contaminant
<input type="checkbox"/> Acute onset of diarrhea (liquid stools for > 12 hours)		<input checked="" type="checkbox"/> Other positive laboratory tests
<input type="checkbox"/> Purulent drainage or material		<input type="checkbox"/> Radiographic evidence of infection
<input checked="" type="checkbox"/> Pain or tenderness		
<input type="checkbox"/> New onset/change in sputum, increased secretions or increased suctioning		
<input type="checkbox"/> Localized swelling		
<input type="checkbox"/> Persistent microscopic or gross blood in stools		
<input type="checkbox"/> Wheezing, rales or rhonchi		
<input type="checkbox"/> Other evidence of infection found on direct exam, during surgery or by diagnostic testing*		
<input checked="" type="checkbox"/> Other signs and symptoms +		

(nasal discharge)

(positive antigen test...)

Clinical Diagnosis

Physician diagnosis of this event type*

Physician institutes appropriate antimicrobial therapy*

+ Per specific event criteria

This screen shows the “Criteria” section of the Custom Event form. The criteria met in this example are checked and highlighted. The patient had fever, back pain, and nasal discharge. Notice that even though nasal discharge is part of the definition, it is not specifically stated on the form. Therefore, we checked “Other signs & symptoms”. The last piece of the criterion is the positive antigen test, for which we checked “Other positive laboratory tests” under the “Laboratory” heading.



Forms vs. Screen

- Specific event criteria appears after specific event is selected
- Only criteria applicable for the specific event selected can be checked
- The criteria will be checked for validity when you press the “Save” button

After you have collected data on the event and you are ready to enter it into NHSN, there are a few things to keep in mind.

First, the specific event criteria appears after the specific event is selected. Second, only the criteria that are applicable for the specific event type are available to be checked. And finally, the system will validate the criteria combination you checked against the actual CDC HAI definitions when the “Save” button is clicked.

Now let’s take a look at a few screen shots demonstrating data entry of criteria.



Forms vs. Screen

Event Details [HELP](#)

Specific Event:

Specify Criteria Used* (check all that apply):

Signs & Symptoms

Any patient

- Fever
- Urgency
- Frequency
- Dysuria
- Suprapubic tenderness
- Abscess
- Pain or tenderness
- Purulent drainage or material
- Other evidence of infection found on direct exam, during surgery, or by diagnostic tests

<=1 year old

- Fever
- Hypothermia
- Apnea
- Bradycardia
- Dysuria
- Lethargy
- Vomiting

Laboratory & Diagnostic Testing

- Positive culture
- Positive blood culture
- >=2 positive urine cultures with >=10⁵ col/cc with no more than 2 organisms
- Radiographic evidence of infection
- 1 positive urine culture with >=10⁵ col/cc with no more than 2 organisms
- Positive dipstick for leukocyte esterase or nitrate
- Pyuria
- Positive Gram stain of unspun urine
- >=2 positive cultures with >=10² col/ml of same uropathogen from nonvoided specimen
- 1 positive culture with <=10⁵ col/ml of a single uropathogen in patient being treated with an effective antimicrobial agent for UTI

Clinical Diagnosis

- Physician diagnosis of this event type
- Physician institutes appropriate antimicrobial therapy

In this example, I'm entering an Symptomatic Urinary tract infection, or SUTI, for an adult patient. Notice that I can check any of the criteria outlined by the red boxes. The other criteria can be seen, but cannot be checked.



Forms vs. Screen



Event Details [HELP](#)

Specific Event:

Specify Criteria Used* (check all that apply):

<u>Signs & Symptoms</u>	<u><=1 year old</u>	<u>Laboratory & Diagnostic Testing</u>
<u>Any patient</u>		
<input checked="" type="checkbox"/> Fever	<input type="checkbox"/> Fever	<input type="checkbox"/> Positive culture
<input type="checkbox"/> Urgency	<input type="checkbox"/> Hypothermia	<input type="checkbox"/> Positive blood culture
<input type="checkbox"/> Frequency	<input type="checkbox"/> Apnea	<input type="checkbox"/> >=2 positive urine cultures with >=10 ⁵ col/cc with no more than 2 organisms
<input type="checkbox"/> Dysuria	<input type="checkbox"/> Bradycardia	<input type="checkbox"/> Radiographic evidence of infection
<input type="checkbox"/> Suprapubic tenderness	<input type="checkbox"/> Dysuria	<input checked="" type="checkbox"/> 1 positive urine culture with >=10 ⁵ col/cc with no more than 2 organisms
<input type="checkbox"/> Abscess	<input type="checkbox"/> Lethargy	<input type="checkbox"/> Positive dipstick for leukocyte esterase or nitrate
<input type="checkbox"/> Pain or tenderness	<input type="checkbox"/> Vomiting	<input type="checkbox"/> Pyuria
<input type="checkbox"/> Purulent drainage or material		<input type="checkbox"/> Positive Gram stain of unspun urine
<input type="checkbox"/> Other evidence of infection found on direct exam, during surgery, or by diagnostic tests		<input type="checkbox"/> >=2 positive cultures with >=10 ² col/ml of same uropathogen from nonvoided specimen
		<input type="checkbox"/> 1 positive culture with <=10 ⁵ col/ml of a single uropathogen in patient being treated with an effective antimicrobial agent for UTI
		<u>Clinical Diagnosis</u>
		<input type="checkbox"/> Physician diagnosis of this event type
		<input type="checkbox"/> Physician institutes appropriate antimicrobial therapy

This UTI happens to meet SUTI criterion 1 and I have checked the appropriate criteria. Since I have checked a valid combination, I would be able to save this record after entering any remaining required information.



Forms vs. Screen

Specific Event>:

Specify Criteria Used* (check all that apply):

<u>Signs & Symptoms</u>	<u><=1 year old</u>	<u>Laboratory & Diagnostic Testing</u>
<u>Any patient</u>	<input type="checkbox"/> Fever	<input type="checkbox"/> Positive culture
<input type="checkbox"/> Fever	<input type="checkbox"/> Hypothermia	<input type="checkbox"/> Positive blood culture
<input checked="" type="checkbox"/> Urgency	<input type="checkbox"/> Apnea	<input type="checkbox"/> >=2 positive urine cultures with >=10 ⁵ col/cc with no more than 2 organisms
<input type="checkbox"/> Frequency	<input type="checkbox"/> Bradycardia	<input type="checkbox"/> Radiographic evidence of infection
<input type="checkbox"/> Dysuria	<input type="checkbox"/> Dysuria	<input type="checkbox"/> 1 positive urine culture with >=10 ⁵ col/cc with no more than 2 organisms
<input type="checkbox"/> Suprapubic tenderness	<input type="checkbox"/> Lethargy	<input checked="" type="checkbox"/> Positive dipstick for leukocyte esterase or nitrate
<input type="checkbox"/> Abscess	<input type="checkbox"/> Vomiting	<input type="checkbox"/> Pyuria
<input type="checkbox"/> Pain or tenderness		<input type="checkbox"/> Positive Gram stain of unspun urine
<input type="checkbox"/> Purulent drainage or material		
<input type="checkbox"/> Other evidence of infection found on direct exam, during surgery, or by diagnostic tests		

Windows Internet Explorer

The criteria selected is not applicable for the specific event selected.

OK

However, if I did not check a valid criteria combination (meaning, I did not meet one of the SUTI definitions), as I have done here, I would get the following error message: The criteria selected is not applicable for the specific event selected. I would not be able to save the record without first entering a valid criterion. If these were the actual criteria I used to identify this infection, I may need to go back and look at the patient record to see if SUTI criteria can be met. Otherwise, I do not report this infection.



Can I Edit an Existing Record?



Event records entered prior to the addition of specific event criteria can not be edited.

Instead, records can be viewed and, if changes are necessary, the record will have to be deleted and re-entered with the specific event criteria.

You might be wondering whether you can edit an existing record. Event records entered prior to the addition of specific event criteria can not be edited. Instead, records can be viewed and, if changes are necessary, the record will have to be deleted and re-entered with the specific event criteria.

Let's take a look at an example.

Edits to Existing Records??

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

NHSN - National Healthcare Safety Network (ISD-CLFT-NHSN1) | NHSN Home | My Info | Contact us | Help | Log Out

Logged into DHQP MEMORIAL HOSPITAL (ID 10018) as MAGGIE.
Facility DHQP MEMORIAL HOSPITAL (ID 10018) is following 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*: DHQP MEMORIAL HOSPITAL (10018) Event #: 7388
Patient ID*: 03-33-987
Social Security #: Secondary ID:
Last Name: Burghdoff First Name: Constance
Middle Name:
Gender*: F - Female Date of Birth*: 03/24/1966
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*: 01/15/2007
Post:
Comments

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

Once I have printed the completed event form, I can return to the “View Event” screen, click “Delete”, and re-enter the event by going to Event > Add, as normal. By adding this as a new event, I will need to include the specific event criteria as discussed earlier.

Edits to Existing Records??

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Centers for Disease Control and Prevention

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Analysis



- Line listings and frequency tables can be modified to include specific event criteria

National Healthcare Safety Network

Line Listing for All Central Line-Associated BSI Events with Criteria

As of: July 14, 2008 at 9:03 AM

Date Range: CLAB_EVENTS evntDateYr 2008 to 2008

Event ID	Event Date	Specific Event	Apnea?	Bradycardia?	Chills?	Fever?	Hypotension?	Hypothermia?	Recognized Pathogen from Bld Culture(s)?	CSC from >2 Bld Cultures?	Bld Culture Not Done.No Org Detected?	Physician Institutes Appropriate abx Therapy?
12046	06/30/2008	LCBI				Y			Y			
12056	06/10/2008	LCBI			Y	Y				Y		
12057	06/01/2008	LCBI							Y			
12058	06/05/2008	CSEP				Y					Y	Y
12059	06/20/2008	LCBI			Y				Y			
12086	06/29/2008	LCBI				Y				Y		

Specific event criteria will be available for output options such as line listings and frequency tables. By modifying analysis output options, you can look at the criteria used to identify events reported in your facility. This screen shows an example line listing of all CLABSIs with the specific event criteria. Notice that I have selected to use variable labels.



Analysis



National Healthcare Safety Network
Frequency Table for CLABSI-LCBI
As of: July 14, 2008 at 9:33 AM
Date Range: CLAB_EVENTS evntDateYr 2008 to 2008

Frequency Percent Row Pct Col Pct	Table of location by cr_labPath			
	location(Location)	cr_labPath(Recognized Pathogen from Bld Culture(s)?)		Total
		N - No	Y - Yes	
71ICU	0	2	2	
	0.00	40.00	40.00	
	0.00	100.00		
	0.00	66.67		
72N	1	0	1	
	20.00	0.00	20.00	
	100.00	0.00		
	50.00	0.00		
MICU	1	1	2	
	20.00	20.00	40.00	
	50.00	50.00		
	50.00	33.33		
Total	2	3	5	
	40.00	60.00	100.00	

This is an example of a frequency table for all CLABSI LCBI. In this example, I have chosen to look at the event location by the criteria 'Recognized pathogen from one or more blood cultures'.

Analysis

The screenshot displays the NHSN Reporting interface for configuring a 'Line Listing' output. On the left, a navigation menu lists various output options, with 'Line Listing - All CLAB Events' highlighted. A red box and arrow point to the 'Modify' button for this option. The main configuration area includes fields for 'Attributes of the Output', 'Date Variable', 'Beginning', 'Ending', and 'Specify Other Selection Criteria'. A yellow box highlights a scrollable list of variables on the right side of the screen, including 'admDateYH', 'admDateYM', 'admDateYQ', 'admDateYr', 'admiDate', 'admToDisDays', 'admToEvtDays', 'ageAEvent', 'birthWt', 'birthWtCode', 'birthWtCodeDesc', 'centralLine', 'completedFlag', 'contribDeath', 'cr_diagTher', 'cr_labNoOrg', 'cr_labPath', 'cr_labSkinCon', 'cr_ssApnea', 'cr_ssBradycard', 'cr_ssChills', 'cr_ssFever', 'cr_sshypoten', 'cr_sshypotherm', 'customEventType', 'devInsertDate', 'devInsertLoc', 'died', and 'dischargeDate'.

To include specific event criteria in the output, you will need to modify the output option by clicking “Modify” next to the desired output. When selecting the specific event criteria on the modification screen, such as to modify the variables to display in the line list, please note that all criteria variables have the prefix “cr_”.

For more information on modifying analysis output options, please see the NHSN Online Manual, accessible by clicking “Help” while in NHSN Reporting.



Resources



- Document Library:

http://www.cdc.gov/ncidod/dhqp/nhsn_documents.html

- NHSN Manual: Patient Safety Component Protocol
- Horan TC, Andrus M, 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.

- NHSN Members Page:

http://www.cdc.gov/ncidod/dhqp/nhsn_members.html

- Questions? Email us at: nhsn@cdc.gov

More information can be found in the NHSN Manual: Patient Safety Component Protocol, available online in the NHSN Document Library. All CDC HAI definitions can be found in the June 2008 issue of AJIC or online in the NHSN Document Library.

Please also keep the NHSN Members page readily available to access additional NHSN documents, including all training materials. If you have any questions, you can send us an email to nhsn@cdc.gov.

Thank you!