HAI Data Validation for Acute Care Hospitals August 2022

Healthcare-Associated Infections Program
Center for Health Care Quality
California Department of Public Health

Overview

- The CDPH HAI Program is offering data validation in 2022 to help hospitals assess completeness of HAI case finding
- Past validation projects have shown incomplete case finding in many California hospitals
- Hospital infection prevention program staff will be able to review and refine their surveillance practices

Program Objectives

- Recognize elements necessary for completeness of case finding
- Identify the steps involved in conducting CDPH HAI internal validation process
- Demonstrate how the validation workbook can be utilized to complete the validation process
- Review the process for submitting the summary of findings

Implicit Bias

- Describes how our unconscious attitudes or judgements can influence our thoughts, decisions or actions
- Includes involuntary, unintentional perceptions made without awareness
- Occurs as our brains sort information and perceive data to understand our world
- Affects our decisions, contributing to societal disparities
  - Self awareness about implicit bias can promote healthcare diversity and equality
- Learn more about your own implicit bias at Project Implicit (implicit.harvard.edu/implicit/)

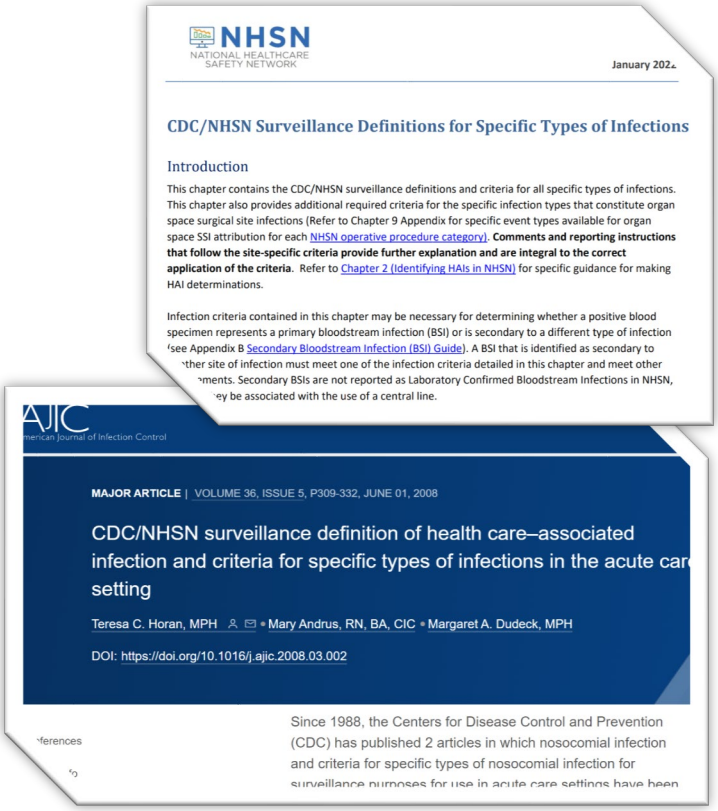
How to Find the Validation Webpage

- Data Validation for Acute Care Hospitals
  (www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/ACH_Internal_Data_Validation.aspx)

- Submission of Summary of Finding results due by October 14.

CDC/NHSN Surveillance Definitions

- Know the CLABSI definition AND other HAI surveillance definitions
- Apply definition with confidence the same way every time
- Surveillance and clinical definitions may not always align
  - Surveillance definitions must be adhered to strictly and consistently
- Seek assistance for ambiguity



CDC Surveillance Definitions (PDF)
(www.cdc.gov/nhsn/pdfs/pscmanual/17pscnosinfdef_current.pdf)

CDC/NHSN surveillance definition of HAI (AJIC Journal)
(www.ajicjournal.org/article/S0196-6553(08)00167-3/fulltext)

CDC CLABSI Definition with Case Studies (PDF)
www.cdc.gov/nhsn/pdfs/training/2022/BSI-CLABSI-Exclusions-508.pdf)

California Department of PublicHealth

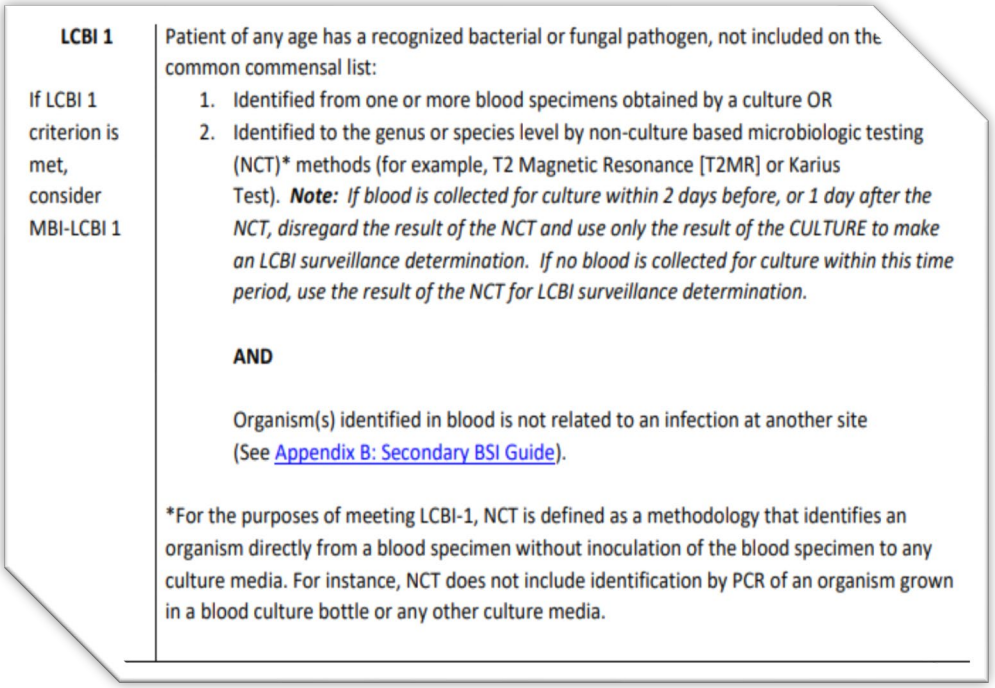
Consistency

- Complete case-finding requires a consistent, complete evaluation of a minimum set of clinical data

	Always Step 1	Step 2
To identify CLABSI	Review every positive blood culture	Review for presence of central line

Quick Review of NHSN CLABSI Protocol

- Central Line-Associated Bloodstream Infection (CLABSI)
  - A Laboratory Confirmed Bloodstream Infection (LCBI) where an eligible BSI organism is identified, and an eligible central line is present on the LCBI Date Of Event (DOE) or the day before



LCBI 1 If LCBI 1 criterion is met, consider MBI-LCBI 1	Patient of any age has a recognized bacterial or fungal pathogen, not included on the common commensal list: 1. Identified from one or more blood specimens obtained by a culture OR 2. Identified to the genus or species level by non-culture based microbiologic testing (NCT)* methods (for example, T2 Magnetic Resonance [T2MR] or Karius Test). ***Note:*** *If blood is collected for culture within 2 days before, or 1 day after the NCT, disregard the result of the NCT and use only the result of the CULTURE to make an LCBI surveillance determination. If no blood is collected for culture within this time period, use the result of the NCT for LCBI surveillance determination.* **AND** Organism(s) identified in blood is not related to an infection at another site (See Appendix B: Secondary BSI Guide). *For the purposes of meeting LCBI-1, NCT is defined as a methodology that identifies an organism directly from a blood specimen without inoculation of the blood specimen to any culture media. For instance, NCT does not include identification by PCR of an organism grown in a blood culture bottle or any other culture media.

CDC Bloodstream Infections (PDF)
(www.cdc.gov/nhsn/pdfs/pscmanual/4psc_clabscurrent.pdf)

California Department of PublicHealth

Quick Review of NHSN CLABSI Protocol Cont.

- Clinical review to determine
  - If infection was present on admission
  - If BSI secondary to infection at another site
  - If lab findings represent contamination during blood draw
  - If 2 positive blood cultures of a common commensal bacteria

Simplified View of CLABSI Definition

LCBI 1	LCBI 2	LCBI 3
Patient of any age ❑ Has a recognized pathogen cultured from one or more blood cultures **AND** ❑ Organism cultured from blood is not related to an infection at another site If LCBI 1 criterion is met, consider MBI-LCBI 1	Patient of any age ❑ Has a common commensal cultured from 2 or more blood cultures drawn on separate occasions **AND** Has at least one of the following signs or symptoms: ❑ Fever (>38 Celsius) ❑ Chills ❑ Hypotension **AND** Signs & symptoms and positive lab result are not related to an infection at another site. If LCBI 2criterion is met, consider MBI-LCBI 2	Patient ≤1 year of age ❑ has commensals cultures from 2 or more blood cultures drawn on separate occasions **AND** At least one of the following signs or symptoms ❑ Fever (38 Celsius core) ❑ Hypothermia (<36 Celsius core) ❑ Apnea ❑ Bradycardia **AND** ❑ Signs and symptoms and positive lab results are not related to an infections at another site. If LCBI 3 criterion is met, consider MBI-LCBI 3

Criterion elements must occur within the 7-day IWP (as defined in Chapter 2) which Includes the collection date of the positive blood specimen, the 3 calendar days before and the 3 calendar days after.

Validating CLABSIs

Review of Blood Cultures

- Using a laboratory printout (not 'filtered' by a data-mining or other program)
  - Sort each positive blood culture by patient
    - If these cultures are taken multiple days in a row and would be reported as the same infection, that is one "event"
  - If a patient has BC x1 and only one bottle is positive, that is an "event"
- Number each event and randomly select 20 to review
- Enter those events, numbers corresponding, on CLABSI Validation Form 1

Sample Blood Culture Line List

Patient	Patient	MR#	Sex	Age	Specimen	Acct#	Collection	Culture	Organism Translation	Final Date	Location	Admit date
Abcdefg	Mark	1234000	M	87	blood	89721	1/10/2022	Blood Culture	MRSA	1/15/2022	ER	1/10/2022
aaffnna	Rena	12345111	F	58	blood	429288	2/16/2022	Blood Culture	Staph hemolyticus	2/19/2022	ER	2/16/2022
aaffnna	Rena	12345111	F	58	blood	429285	2/16/2022	Blood Culture	Staph hemolyticus	2/19/2022	ER	2/16/2022
amanala	Alma	667895	F	88	blood	398155	3/12/2022	Blood Culture	Staph Coagulase Neg	3/15/2022	Oncology	3/12/2022
amanala	Alma	667895	F	88	blood	398785	3/12/2022	Blood Culture	Klebsiella Pneumonia	3/15/2022	Outpatient	3/12/2022
amanala	Alma	667895	F	88	blood	398782	3/12/2022	Blood Culture	Klebsiella Pneumoniae	3/28/2022	Outpatient	3/12/2022
amanala	Alma	667895	F	85	blood	599058	3/24/2022	Blood Culture	Enterococcus Avium	3/28/2022	Oncology	3/12/2022
affasa	Betty	765432	F	66	blood	570588	3/26/2022	Blood Culture	Escherichia Coli	4/1/2022	Med-Surg	3/27/2022
affasa	Betty	765432	F	66	blood	570589	3/26/2022	Blood Culture	Escherichia Coli	3/29/2022	Med-Surg	3/27/2022
affasa	Betty	765432	F	66	blood	570980	3/26/2022	Blood Culture	Escherichia Coli	4/1/2022	Med-Surg	3/27/2022
akaysass	Hal	345678	M	75	blood	781918	4/5/2022	Blood Culture	MRSA	4/8/2022	ER	4/5/2022
akaysass	Hal	345678	M	75	blood	781919	4/5/2022	Blood Culture				4/5/2022
bbbmmss	Robert	8976987	M	69	blood	755928	4/19/2022	Blood Culture				4/19/2022
bbbmmss	Robert	8976987	M	69	blood	755928	4/19/2022	Blood Culture				4/19/2022
bbbmmss	Robert	8976987	M	69	blood	755928	4/19/2022	Blood Culture	Cornyform gram positive	4/25/2022	ER	4/19/2022
bbcmaa	Bobby	67678768	M	73	blood	559992	4/20/2022	Blood Culture	Strep Pneumoniae	4/25/2022	Outpatient	4/19/2022
bafaba	Henry	5678675	M	55	blood	320595	4/22/2022	Blood Culture	Staph Coagulase Negative	4/25/2022	ER	4/22/2022
bbbcdafa	Butch	4567546	M	89	blood	311595	5/8/2022	Blood Culture	MRSA		ER	5/9/2022
bbbcdafa	Butch	4567546	M	89	blood	311595	5/8/2022	Blood Culture	MRSA	5/11/2022	ER	5/9/2022
bbbcdafa	Butch	4567546	M	89	blood	318590	5/15/2022	Blood Culture	MRSA	5/11/2022	ICU	5/9/2022
bbbcdafa	Butch	4567546	M	89	blood	251915	5/18/2022	Blood Culture	MRSA	5/21/2022	ICU	5/9/2022
carpapu	Darla	4356436	F	59	blood	21577	5/7/2022	Blood Culture	Staph Caprae	5/9/2022	ER	5/7/2022
carpapu	Darla	4356436	F	59	blood	21578	5/7/2022	Blood Culture	Staph Caprae	5/9/2022	ER	5/7/2022
carrppm	Anna	3453545	F	64	blood	55259	5/4/2022	Blood Culture	Staph Coagulase Negative	5/6/2022	ER	5/3/2022
carrppm	Anna	3453545	F	64	blood	55259	5/4/2022	Blood Culture	Cornyform gram positive	5/6/2022	ER	5/3/2022
cbdbg	Harry	9453576	F	45	blood	290919	6/1/2022	Blood Culture	Staph Coagulase Negative	6/4/2022	ER	6/1/2022
cbddfg	Christina	8234543	F	79	blood	82199	6/7/2022	Blood Culture	Candida Glabrata	6/8/2022	ICU	6/5/2022
cbddfg	Christina	8234543	F	79	blood	82702	6/7/2022	Blood Culture	Candida Glabrata	6/8/2022	ICU	6/5/2022
cddggff	Doug	8345623	M	83	blood	787889	6/12/2022	Blood Culture	Streptococcus Mitis	6/15/2022	ER	6/12/2022
cddggff	Doug	8345623	M	83	blood	787885	6/12/2022	Blood Culture	Streptococcus Mitis	6/15/2022	ER	6/12/2022
cddggff	Doug	8345623	M	83	blood	19789	6/24/2022	Blood Culture	Staph Coagulase Negative	6/28/2022	ICU	6/12/2022
eeffmma	Bobby	8723434	M	62	blood	58215	6/15/2022	Blood Culture	Staph Coagulase Negative	6/18/2022	ER	6/15/2022
emaffa	Anna	9432453	F	72	blood	558805	6/12/2022	Blood Culture	Staph Coagulase Negative	6/15/2022	ICU	5/29/2022
emaffa	Anna	9432453	F	72	blood	90917	6/15/2022	Blood Culture	Staph Coagulase Negative	6/18/2022	ICU	5/29/2022
gghhmma	Donna	9564735	F	70	blood	555578	6/22/2022	Blood Culture	Probable Contamination	6/25/2022	ICU	5/18/2022
gghhmma	Donna	9564735	F	70	blood	555578	6/22/2022	Blood Culture	Staph Coagulase Negative	6/25/2022	ICU	5/18/2022
mmaann	Cynthia	976345	F	54	blood	519970	6/30/2022	Blood Culture	Staph Hominis	7/2/2022	Outpatient	6/29/2022

Sorted by name

AND LOCATION

For the specific time period.
We chose Q1 and Q2 2022 here

California Department of PublicHealth

Number each patient's "cluster" of blood cultures

Sample Blood Culture Line List

Episode	Patient Last Name	Patient First Name	MR#	Sex	Age	Specimen Descrip	Acct#	Collection date	Culture	Organism Translation	Final Date	Location	Admit date
1	Abcdefg	Mark	1234000	M	87	blood	89721	1/10/2022	Blood Culture	MRSA	1/15/2022	ER	1/10/2022
2	aaffnna	Rena	12345111	F	58	blood	429288	2/16/2022	Blood Culture	Staph hemolyticus	2/19/2022	ER	2/16/2022
	aaffnna	Rena	12345111	F	58	blood	429285	2/16/2022	Blood Culture	Staph hemolyticus	2/19/2022	ER	2/16/2022
3	amanala	Alma	667895	F	88	blood	398155	3/12/2022	Blood Culture	Staph Coagulase Negative	3/19/2022	Oncology	3/12/2022
	amanala	Alma	667895	F	88	blood	398785	3/12/2022	Blood Culture	Klebsiella Pneumoniae	3/16/2022	Outpatient	3/12/2022
	amanala	Alma	667895	F	88	blood	398782	3/12/2022	Blood Culture	Klebsiella Pneumoniae	3/28/2022	Outpatient	3/12/2022
4	amanala	Alma	667895	F	85	blood	599058	3/24/2022	Blood Culture	Enterococcus Avium	3/28/2022	Oncology	3/12/2022
5	affasa	Betty	765432	F	66	blood	570588	3/26/2022	Blood Culture	Escherichia Coli	4/1/2022	Med-Surg	3/27/2022
	affasa	Betty	765432	F	66	blood	570589	3/26/2022	Blood Culture	Escherichia Coli	3/29/2022	Med-Surg	3/27/2022
	affasa	Betty	765432	F	66	blood	570980	3/26/2022	Blood Culture	Escherichia Coli	4/1/2022	Med-Surg	3/27/2022
6	akaysass	Hal	345678	M	75	blood	781918	4/5/2022	Blood Culture	MRSA	4/8/2022	ER	4/5/2022
	akaysass	Hal	345678	M	75	blood	781919	4/5/2022	Blood Culture	MRSA	4/8/2022	ER	4/5/2022
7	bbbmmss	Robert	8976987	M	69	blood	755928	4/19/2022	Blood Culture	Probable Contamination	4/25/2022	ER	4/19/2022
	bbbmmss	Robert	8976987	M	69	blood	755928	4/19/2022	Blood Culture	Staph Coagulase Negative	4/25/2022	ER	4/19/2022
	bbbmmss	Robert	8976987	M	69	blood	755928	4/19/2022	Blood Culture	Cornyform gram positive Bacilli	4/25/2022	ER	4/19/2022
8	bbcmaa	Bobby	67678768	M	73	blood	559992	4/20/2022	Blood Culture	Strep Pneumoniae	4/25/2022	Outpatient	4/19/2022
9	bafaba	Henry	5678675	M	55	blood	320595	4/22/2022	Blood Culture	Staph Coagulase Negative	4/25/2022	ER	4/22/2022
10	bbbcdafa	Butch	4567546	M	89	blood	311595	5/8/2022	Blood Culture	MRSA		ER	5/9/2022
	bbbcdafa	Butch	4567546	M	89	blood	311595	5/8/2022	Blood Culture	MRSA	5/11/2022	ER	5/9/2022
	bbbcdafa	Butch	4567546	M	89	blood	318590	5/15/2022	Blood Culture	MRSA	5/11/2022	ICU	5/9/2022
	bbbcdafa	Butch	4567546	M	89	blood	251915	5/18/2022	Blood Culture				5/9/2022
11	carpapu	Darla	4356436	F	59	blood	21577	5/7/2022	Blood Culture				5/7/2022
	carpapu	Darla	4356436	F	59	blood	21578	5/7/2022	Blood Culture				5/7/2022
12	carrppm	Anna	3453545	F	64	blood	55259	5/4/2022	Blood Culture				5/3/2022
	carrppm	Anna	3453545	F	64	blood	55259	5/4/2022	Blood Culture	Bacilli			5/3/2022
13	cbdbg	Harry	9453576	F	45	blood	290919	6/1/2022	Blood Culture	Staph Coagulase Negative	6/4/2022	ER	6/1/2022
14	cbddfg	Christina	8234543	F	79	blood	82199	6/7/2022	Blood Culture	Candida Glabrata	6/8/2022	ICU	6/5/2022
	cbddfg	Christina	8234543	F	79	blood	82702	6/7/2022	Blood Culture	Candida Glabrata	6/8/2022	ICU	6/5/2022
15	cddggff	Doug	8345623	M	83	blood	787889	6/12/2022	Blood Culture	Streptococcus Mitis	6/15/2022	ER	6/12/2022
	cddggff	Doug	8345623	M	83	blood	787885	6/12/2022	Blood Culture	Streptococcus Mitis	6/15/2022	ER	6/12/2022
16	cddggff	Doug	8345623	M	83	blood	19789	6/24/2022	Blood Culture	Staph Coagulase Negative	6/28/2022	ICU	6/12/2022
17	ee	Bobby	8723434	M	62	blood	58215	6/15/2022	Blood Culture	Staph Coagulase Negative	6/18/2022	ER	6/15/2022
18	en	Anna	9432453	F	72	blood	558805	6/12/2022	Blood Culture	Staph Coagulase Negative	6/15/2022	ICU	5/29/2022
	en	Anna	9432453	F	72	blood	90917	6/15/2022	Blood Culture	Staph Coagulase Negative	6/18/2022	ICU	5/29/2022
19	gg	Donna	9564735	F	70	blood	555578	6/22/2022	Blood Culture	Probable Contamination	6/25/2022	ICU	5/18/2022
	gghhmma	Donna	9564735	F	70	blood	555578	6/22/2022	Blood Culture	Staph Coagulase Negative	6/25/2022	ICU	5/18/2022
20	mmaann	Cynthia	976345	F	54	blood	519970	6/30/2022	Blood Culture	Staph Hominis	7/2/2022	Outpatient	6/29/2022

Etc
Etc
Etc

Some patients may have more than one culture drawn within the time frame

CLABSI Validation Form 1

Lab List No.	Date of first positive blood culture of BSI Event:	Admit Date:	Hosp. Unit of patient when test was sent:	Q1. Was Event reported to NHSN as a CLABSI?			NO central line >2d *or* line not in place day of event or previous day	If Q1 answer is NO, complete this section:						If Q1 answer is YES but event was reported in ERROR: Not a CLABSI	If Q1 answer is **YES** and event was **Reported Correctly**, check box below:
								Present on admission (and not discharged in previous 2 days)	Contaminant i.e. Common skin commensals		Secondary BSI Primary site of infection	Met CLABSI Exclusion Criteria	**MISSED** Should have been reported:		
				YES	NHSN Event #	**NO**			Single +bld cx	2 +bld cx w/ in 2d but no S/S					
1	1/15/22	1/1/22	ICU	☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2	2/1/22	1/8/22	4P	☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3	3/1/22	2/2/22	3E	☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
11				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
13				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
14				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
15				☐		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
													CLABSI Total Missed:	A:	Total Correct: B:

California Department of PublicHealth

Narrowing Charts to Review

- Print out a CLABSI line list from NHSN
- Check 'yes' or 'no' in the "Q1" column
- Per instructions on the form
- If 'no', fill out the next gray section. If listing falls in the "Missed" section, the medical record should be reviewed
  - If "Yes NHSN Event", the record should be reviewed to confirm the CLABSI event
  - For complex patients, there is a worksheet on the website to assist achieving clarity on the case

CDC Primary BSI_BLANK Form (PDF)
(www.cdc.gov/nhsn/forms/57.108_PrimaryBSI_BLANK.pdf)

Primary BSI (CLABSI) or Secondary BSI?

- Rule out a CLABSI if patient has a bloodstream infection (BSI), and another site is suspected as being the primary site of infection
  - Review medical record for other primary sites of infection, especially for patients with complex co-morbidities
- **Important:** To classify a BSI as secondary to another site, you must ensure the primary site of infection meets the NHSN surveillance definition

Comparison to Your Own Data

- Print out CLABSI line list from January 1st through June 30th
- Re-verify discrepancies
- Correct NHSN data as needed

Remember

- When MRSA or VRE is the pathogen causing CLABSI, you must report the event twice both in the Device-Associated and MDRO & CDI Modules

Validating LabID Events

Quick Review of NHSN Reporting Rules for CDI, MRSA BSI, VRE BSI

- FacWideIN LabID event reporting is based on patient and location
  - All inpatient units and ED/24-hour observation locations are included.
- The 'date admitted to facility' is the calendar day the patient locates to an inpatient location
- LabID event reporting includes a '14-day' rule which prohibits a 'new' LabID event to be submitted for the patient in the SAME location

CDC NHSN MRSA Bacteremia & CDI LabID Event Reporting (PDF)
(www.cdc.gov/nhsn/pdfs/training/2022/MRSA-CDI-LabID-Event-Reporting-508.pdf)

Consistency

Complete case-finding requires a comprehensive evaluation of a minimum clinical data set

	Always Step 1	Step 2
CDI	Identify all C. difficile toxin positive test (PCR, assay, Culture)	Identify CDI event for specific locations (ED/OBS/ inpatient locations)
MRSA BSI	Identify all final S. *aureus* – positive blood cultures resistant to oxacillin methicillin, or cefoxitin and/or other MRSA+ blood tests	Identify MRSA/VRE blood culture event for specific locations (ED/OBS/ inpatient locations)
VRE BSI	Identify all final Enterococcus – positive blood cultures resistant to vancomycin and/or VRE+ blood test	

CDI LabID Surveillance

Community Onset (CO):

A) Collected in an outpatient location in which the patient was not previously discharged from an inpatient location within the same facility less than or equal to 28 days prior to current date of specimen collection

B) Collected in an inpatient location on HD 1 [day of admission], HD 2 or HD 3

Healthcare Facility-Onset (HO): Collected from an inpatient location on or after HD 4 where HD 1 is day of admission.

Community-Onset Healthcare Facility-Associated (COHCFA): Collected from an inpatient or an outpatient location from a patient who was discharged from the facility less than or equal to 28 days prior to current date of stool specimen collection.

MRSA and VRE

- Review again the list of positive blood cultures
  - For those positive for MRSA, mark event with “M” and assign a number
  - For those positive for VRE, mark event with “V” and assign a number
  - Transcribe these onto MRSA Form 2 and VRE Form 3 respectively
  - Run line listings from the MDRO Analysis module
  - Compare the results and adjust NHSN data accordingly

MRSA Form 2 and VRE Form 3

Lab List No.	MRSA positive blood specimen date:	Admit Date	Hospital Unit of patient when test was sent:	Q1. Was MRSA Event reported to NHSN?			If Q1 answer is NO, complete this section:		If Q1 answer is YES but event was reported in ERROR, complete section:	If Q1 answer is **YES** and event was **Reported Correctly**, check box below:
				YES	NHSN Event #	**NO**	Duplicate <14 days since last positive:	**MISSED** Should have been reported:	Does not meet inpatient Lab ID criteria:	
M1				☐		☐	☐	☐	☐	☐
M2				☐		☐	☐	☐	☐	☐
M3				☐		☐	☐	☐	☐	☐
M4				☐		☐	☐	☐	☐	☐
M5				☐		☐	☐	☐	☐	☐
M6				☐		☐	☐	☐	☐	☐
M7				☐		☐	☐	☐	☐	☐
M8				☐		☐	☐	☐	☐	☐
M9				☐		☐	☐	☐	☐	☐
M10				☐		☐	☐	☐	☐	☐
M11				☐		☐	☐	☐	☐	☐
M12				☐		☐	☐	☐	☐	☐
M13				☐		☐	☐	☐	☐	☐
M14				☐		☐	☐	☐	☐	☐
M15				☐		☐	☐	☐	☐	☐
							Total Missed	A:	Total Correct	B:

California Department of PublicHealth

Validating CDI

Improving Completeness of CDI Reporting

- Ensure you have identified and reported all CDI events
  - Ask your lab to run a retrospective list of positive *C. difficile* for January 1 thru June 30, 2022
- Sort by patient name or medical record number
- Using NHSN Analysis, run a line list of all CDI LabID events reported in the same time period
  - Compare the lists and correct as needed

CDI Validation Form 4

Lab List No.	Positive *C. difficile* specimen date:	Admit Date	Hospital Unit of patient when test was sent:	Q1. Was CDI Event reported to NHSN?			If Q1 answer is NO, complete this section		If Q1 answer is YES but event was reported in ERROR, complete this section: Does not meet inpatient Lab ID criteria:	If Q1 answer is YES and event was **Reported Correctly**, check box below:
				YES	NHSN Event #	NO	Duplicate <14 days since last positive:	**MISSED** Should have been reported:		
C1				☐		☐	☐	☐	☐	☐
C2				☐		☐	☐	☐	☐	☐
C3				☐		☐	☐	☐	☐	☐
C4				☐		☐	☐	☐	☐	☐
C5				☐		☐	☐	☐	☐	☐
C6				☐		☐	☐	☐	☐	☐
C7				☐		☐	☐	☐	☐	☐
C8				☐		☐	☐	☐	☐	☐
C9				☐		☐	☐	☐	☐	☐
C10				☐		☐	☐	☐	☐	☐
C11				☐		☐	☐	☐	☐	☐
C12				☐		☐	☐	☐	☐	☐
C13				☐		☐	☐	☐	☐	☐
C14				☐		☐	☐	☐	☐	☐
C15				☐		☐	☐	☐	☐	☐
							Total Missed	A:	Total Correct	B:

California Department of PublicHealth

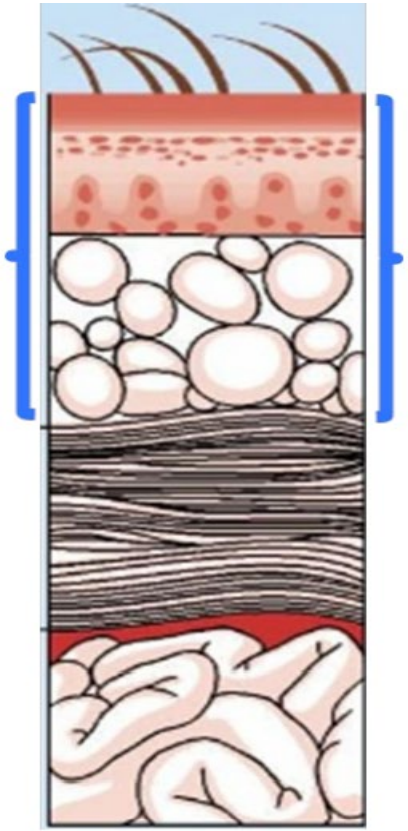
Validating SSI

Consistency with SSI Case Finding

- Complete SSI case finding requires a comprehensive evaluation of a minimal data set.

	Always Step 1	Step 2
SSI	Identify and Review • All returns to OR • All post-op hospital re-admissions (30d or 90d) and visit to ED • Lab, imaging, other diagnostic test reports	• ICD 10 post-op diagnosis and procedure "flag" codes • Review medical records for documentation within the SSI surveillance period

Superficial Incisional SSI NHSN Surveillance Definition



Surgical Site Infection (SSI)
Superficial incisional SSI Must meet the following criteria:
Date of event occurs within 30 days after any NHSN operative procedure (where day 1 = the procedure date) **AND** involves only skin and subcutaneous tissue of the incision **AND** patient has at least ***one*** of the following: a. purulent drainage from the superficial incision. b. organism(s) identified from an aseptically-obtained specimen from the superficial incision or subcutaneous tissue by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing (ASC/AST)). c. superficial incision that is deliberately opened by a surgeon, physician* or physician designee and culture or non-culture based testing of the superficial incision or subcutaneous tissue is not performed **AND** patient has at least one of the following signs or symptoms: localized pain or tenderness; localized swelling; erythema; or heat. d. diagnosis of a superficial incisional SSI by a physician* or physician designee. * The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).

CDC The Ins and Outs of SSI Surveillance (PDF)
(www.cdc.gov/nhsn/pdfs/training/2022/SSI-Surveillance-508.pdf)

California Department of PublicHealth

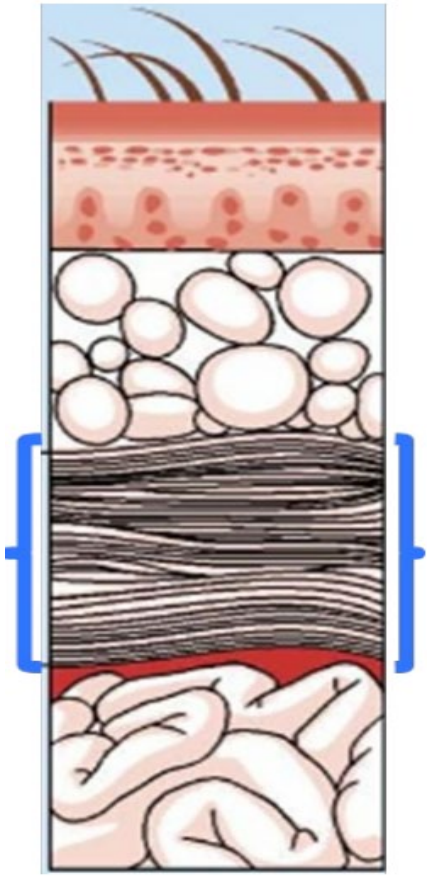
Superficial SSI – Additional Reporting Instructions

The following do not qualify as criteria for meeting the NHSN definition of superficial incisional SSI:

- Diagnosis/treatment of cellulitis (redness/warmth/swelling), by itself, does not meet superficial incisional SSI criterion ‘d’
- A stitch abscess alone (minimal inflammation and discharge confined to the points of suture penetration)
- A localized stab wound or pin site infection; depending on the depth, these infections might be considered either a skin (SKIN) or soft tissue (ST) infection

CDC The Ins and Outs of SSI Surveillance (PDF)
(www.cdc.gov/nhsn/pdfs/training/2022/SSI-Surveillance-508.pdf)

Deep Incisional SSI - NHSN Surveillance Definition



CDC The Ins and Outs of SSI Surveillance (PDF)

(www.cdc.gov/nhsn/pdfs/training/2022/SSI-Surveillance-508.pdf)

Deep incisional SSI

Must meet the following criteria:

The date of event occurs within 30 or 90 days after the NHSN operative procedure (where day 1 = the procedure date) according to the list in Table 2

AND

involves deep soft tissues of the incision (for example, fascial and muscle layers)

AND

patient has at least ***one*** of the following:

a. purulent drainage from the deep incision.

b. a deep incision that spontaneously dehisces, or is deliberately opened or aspirated by a surgeon, physician* or physician designee

AND

organism(s) identified from the deep soft tissues of the incision by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing (ASC/AST)) or culture or non-culture based microbiologic testing method is not performed. A culture or non-culture based test from the deep soft tissues of the incision that has a negative finding does not meet this criterion.

AND

patient has at least ***one*** of the following signs or symptoms: fever (>38°C); localized pain or tenderness.

c. an abscess or other evidence of infection involving the deep incision that is detected on gross anatomical or histopathologic exam, or imaging test.

* The term physician for the purpose of application of the NHSN SSI criteria may be interpreted to mean a surgeon, infectious disease physician, emergency physician, other physician on the case, or physician's designee (nurse practitioner or physician's assistant).

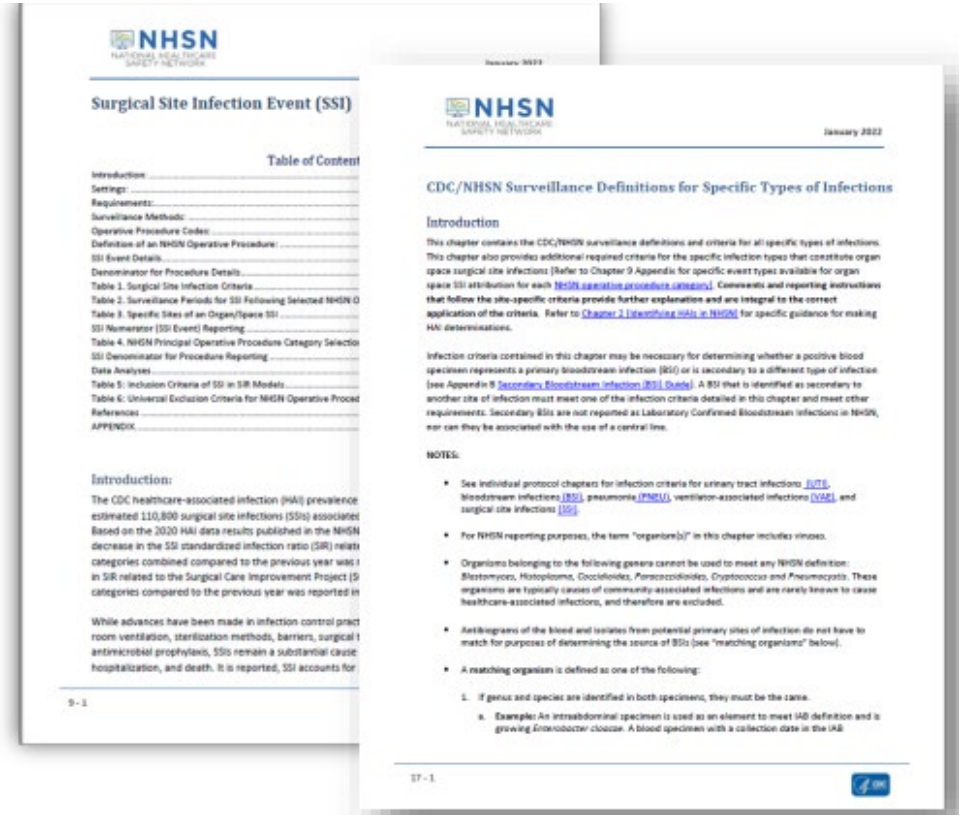
Organ/Space SSI Criteria - Chapter 9 and 17

Must meet:

1. Organ/Space criteria [Chapter 9]

AND

2. At least one criterion for a specific organ/space infection site [Chapter 17]



CDC Surgical Site Infection (PDF)
(www.cdc.gov/nhsn/pdfs/pscmanual/9pscssicurrent.pdf)

California Department of PublicHealth

Organ/Space SSI Criteria-Site Specific

Table 3. Specific Sites of an Organ/Space SSI

Category	Specific Site	Category	Specific Site
BONE	Osteomyelitis	MED	Mediastinitis
BRST	Breast abscess or mastitis	MEN	Meningitis or ventriculitis
CARD	Myocarditis or pericarditis	ORAL	Oral cavity infection (mouth, tongue, or gums)
DISC	Disc space infection	OREP	Deep pelvic tissue infection or other infection of the male or female reproductive tract
EAR	Ear, mastoid infection	PJI	Periprosthetic joint infection
EMET	Endometritis	SA	Spinal abscess/infection
ENDO	Endocarditis	SINU	Sinusitis
GIT	Gastrointestinal (GI) tract infection	UR	Upper respiratory tract, pharyngitis, laryngitis, epiglottitis
IAB	Intraabdominal infection, not specified elsewhere	USI	Urinary System Infection
IC	Intracranial infection	VASC	Arterial or venous infection
JNT	Joint or bursa infection	VCUF	Vaginal cuff infection
LUNG	Other infection of the lower respiratory tract		

(Criteria for these sites can be found in Chapter 17 (Surveillance Definitions for Specific Types of Infections)

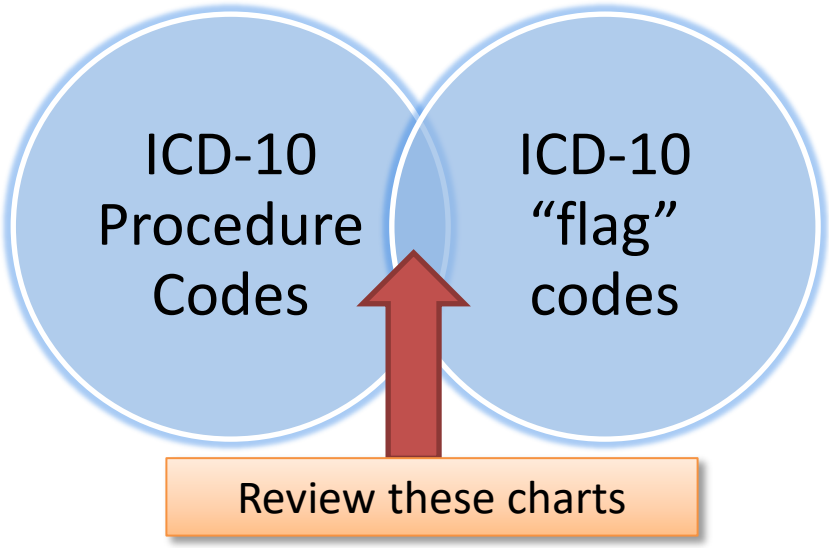
Most Common with COLO & HYST

SSI Validation – Instructions

- Validate three procedures if performed in your facility:
  - COLO
  - HYST
  - CSEC
- The ICD-10 Procedure Codes for COLO, HYST, and CSEC need to be generated by your billing/coding office. The time should include readmissions and up to 40 days from the index procedure discharge date.

SSI Validation – Instructions Cont.

- Request from the billing/coding office to provide the generated list by ICD-10 diagnosis "flag" Codes
- Review all records with intersecting procedure and flag codes for evidence of a post-operative infection



Post-Operative ICD-10 Diagnosis "Flag" Code

NHSN Procedure Category*	ICD-10 Diagnosis Flag Code
COLO	K63.0 K63.2 K65.0 K65.1 K68.19 K94.02 K94.12 L03.319 T81.31XA T81.32XA T81.4XXA T81.83XA
HYST	K65.0 K65.1 L03.319 T81.31XA T81.32XA T81.4XXA
CSEC	K65.0 K65.1 L03.319 T81.31XA T81.32XA T81.4XXA

Use of ICD Diagnosis Flag Codes for SSI Surveillance updated 110421 (PDF)
(www.cdph.ca.gov/Programs/CHCQ/HAI/CDPH%20Document%20Library/UsingICD_DiagnosisFlagCodesforSSI_Surveillance110421_July2022.pdf)

Comments on SSI Validation

- Many of the diagnosis “flag” Codes on slide 37 were trialed specifically for these surgeries
- Evidence of abscesses are often found by reading CT scan results
- Many infections are noted during the initial hospitalization
- Ensure you have a post-discharge surveillance process in place for complete case-finding
- Reporting accurate denominator (BMI, Duration and Wound Class) data elements allows NHSN to calculate more accurate SIR for your hospital

Comparison to Your Own Data

- Review all records with intersecting procedure and “flag” diagnosis Codes
- Print out a line listing from NHSN of SSI events from January 1 thru June 30th
- Re-verify for discrepancy
- Correct NHSN data as needed

Colo SSI Validation Form- 5

								If NO SSI reported, complete this section		BMI			Duration			Wound Class		
COLON Procedure List No.	Date of Surgery (MM/DD)	Discharge date of index surgery (MM/DD)	Indicate which postop ICD code(s) " flagged" this patient record	Readmitted within NHSN specified number of days of index surgery	Was NHSN SSI criteria met?	SSI was Reported Correctly (SSI met criteria & reported to NHSN) Yes	No	Event did not meet NHSN criteria	SSI was MISSED (SSI met criteria & should have been reported)	BMI as reported to NHSN (to the nearest tenth xx.x)	BMI from validation medical record review (to the nearest tenth XX.X)	BMI agree (Discrepancy < 1.0 unit)	Duration as reported to NHSN	Duration from validation medical record review	Duration agree	Wound class as reported to NHSN	Wound class from validation medical record review	Wound class agree
				☐	☐	☐	☐	☐	☐			☐			☐			☐
				☐	☐	☐	☐	☐	☐			☐			☐			☐
				☐	☐	☐	☐	☐	☐			☐			☐			☐
				☐	☐	☐	☐	☐	☐			☐			☐			☐
				☐	☐	☐	☐	☐	☐			☐			☐			☐
				☐	☐	☐	☐	☐	☐			☐			☐			☐
				☐	☐	☐	☐	☐	☐			☐			☐			☐
				☐	☐	☐	☐	☐	☐			☐			☐			☐
				☐	☐	☐	☐	☐	☐			☐			☐			☐
				☐	☐	☐	☐	☐	☐			☐			☐			☐
				COLO Total:		A:		B:	C:		D:			E:			F:	

Summary of Findings

Validation Process Summary

- Total the columns indicated at the bottom of each form. Keep this form on hand as it will be used to populate the Summary of Findings section in the workbook
- Follow instructions in the Summary of Findings section to fill in the tables
- Populate each row in its entirety to ensure data are reported for the correct event type
- Calculations can be rounded to the nearest whole number

Summary of Findings Worksheet

- CLABSI/ LabID Data

Type of HAI	Number of Missed HAI events That Were Identified during Validation (Note: Report to NHSN) A	Number of HAI events That had Already Been Correctly Reported to NHSN Prior to Validation B	Total Number of HAI events Reviewed During Validation That Meet NHSN Definitions Sum: A+B = C	Case-finding Percentage (B/C) x 100%
Example	2 A	16 B	2 + 16 = 18 C	16 /18 x 100% = 89%
CLABSI	A	B	C	
MRSA BSI	A	B	C	
VRE BSI	A	B	C	

Summary of Findings Worksheet

- SSI HAI Data

Procedure Type	No. Of SSIs REPORTED Correctly to NHSN prior to validation A	No. where NO SSI reported & event did NOT meet NHSN criteria B	No. of MISSED SSIs identified during validation C	Total SSIs reviewed during validation that meet NHSN criteria Sum: A+C=T	Case-finding Percentage (A/T)) x 100%
Example	3 A	5 B	1 C	3 + 1 = 4 T	3 /4 x 100% = 75%
SSI - COLO	 A	 B	 C	 T	
SSI - HYST	 A	 B	 C	 T	
SSI - CSEC	 A	 B	 C	 T	

Summary of Surgical Denominator Data Elements

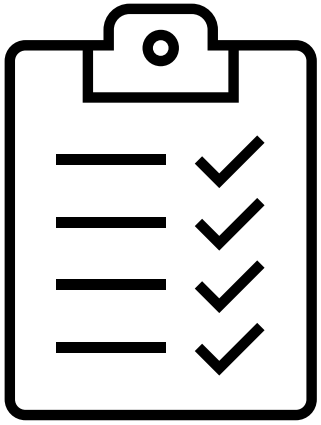
		BMI		Duration		Wound Class	
Procedure	No. of procedures reviewed during validation N	No. where BMI agree D	**Percent with BMI** D/N x 100%	No. where duration agree (Discrepancy <10 min.) E	**Percent with accurate duration** E/N x 100%	No. where wound class agree F	**Percent with accurate wound class** F/N x 100%
Example:	9	7	7/9 x 100% = 78%	8	8/9 x 100% = 89%	5	5/9 x 100%=56%
COLO	N	D		E		F	
HYST	N	D		E		F	
CSEC	N	D		E		F	
Supplemental Form	N	D		E		F	

Save this form; results will be submitted to the CDPH HAI Program via an online form

California Department of PublicHealth

Submitting the Summary of Findings

- Ensure all the data points on the Summary of Findings worksheet is completed.
- Enter your summary of findings into the online survey by **October 14.**
  - CDPH HAI Data Validation SurveyMonkey (www.surveymonkey.com/r/InternalValidationCDPH)



Next Steps

- Ensure the surveillance methods used during validation to identify and verify missed cases of HAIs (during the first half of 2022) will be incorporated into ongoing surveillance practices.
- Hospitals with less than 85% case finding in a specific HAI category may want to consider repeating the validation process for the HAI using data from the third and fourth quarters of 2022.

Next Steps Cont.

- External validation will be conducted for a select number of hospitals during the fourth quarter of 2022
- Data will be aggregated, analyzed, and results will be communicated to:
  - Hospital IPs during regional calls
  - The California HAI Advisory Committee
- Individualized validation reports to be shared with each hospital early 2023

How to Find the Validation Webpage

Data Validation for Acute Care Hospitals
(www.cdph.ca.gov/Programs/CHCQ/HAI/Pages/ACH_Internal_Data_Validation.aspx)

Questions?

For more information,
contact your regional team lead

or email
HAIProgram@cdph.ca.gov