CLAB Scenarios for Interpretation

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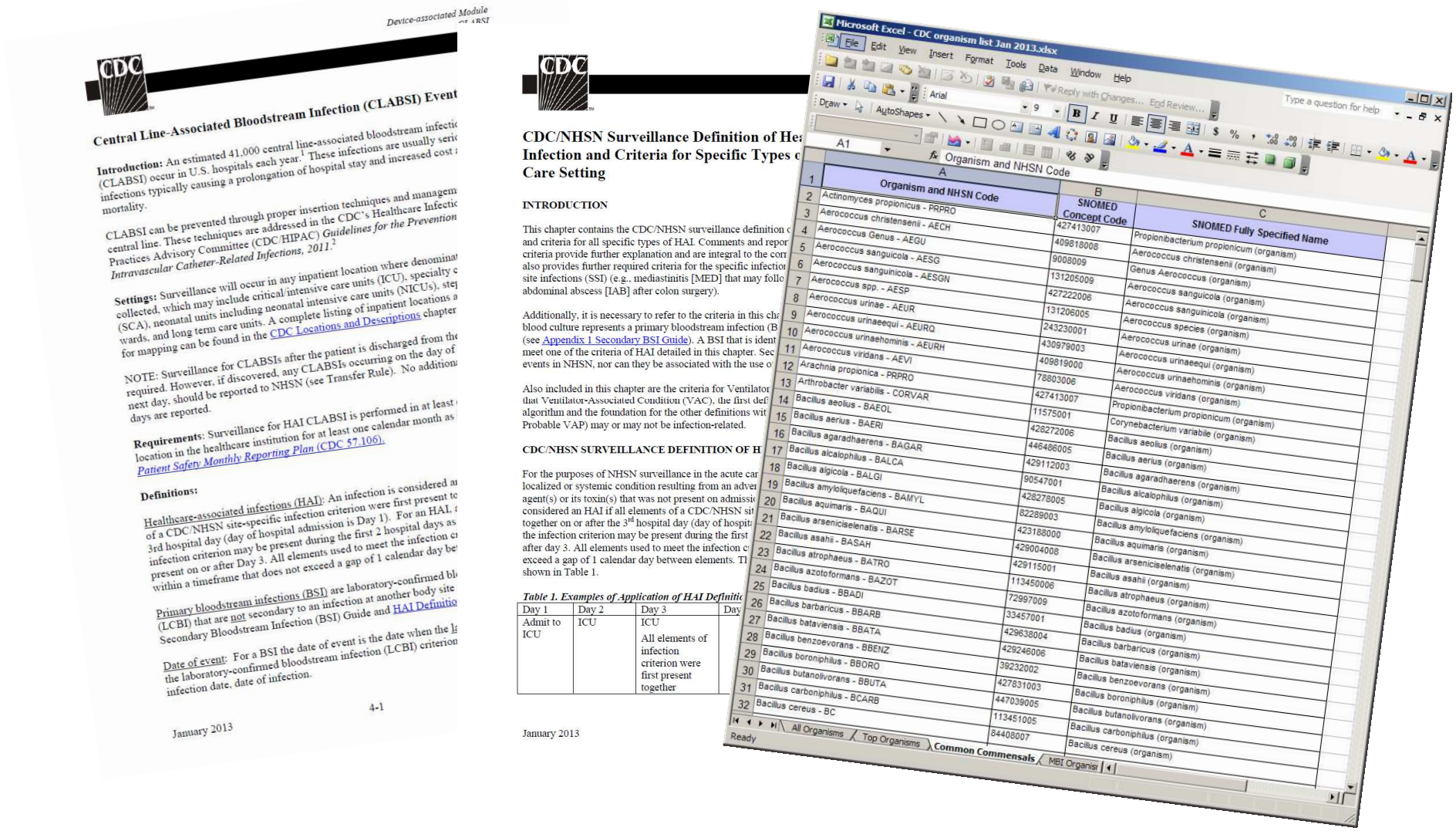
Definitions



Device-associated Module

Central Line-Associated Bloodstream Infection (CLABSI) Event

Introduction: An estimated 41,000 central line-associated bloodstream infectio (CLABSI) occur in U.S. hospitals each year.[1] These infections are usually seric infections typically causing a prolongation of hospital stay and increased cost a mortality.

CLABSI can be prevented through proper insertion techniques and managem central line. These techniques are addressed in the CDC's Healthcare Infectio Practices Advisory Committee (CDC/HIPAC) *Guidelines for the Prevention Intravascular Catheter-Related Infections, 2011*.[2]

Settings: Surveillance will occur in any inpatient location where denominat collected, which may include critical/intensive care units (ICU), specialty c (SCA), neonatal units including neonatal intensive care units (NICUs), step wards, and long term care units. A complete listing of inpatient locations a for mapping can be found in the CDC Locations and Descriptions chapter

NOTE: Surveillance for CLABSIs after the patient is discharged from the required. However, if discovered, any CLABSIs occurring on the day of next day, should be reported to NHSN (see Transfer Rule). No additiona days are reported.

Requirements: Surveillance for HAI CLABSI is performed in at least location in the healthcare institution for at least one calendar month as *Patient Safety Monthly Reporting Plan* (CDC 57.106).

Definitions:

Healthcare-associated infections (HAI): An infection is considered a of a CDC/NHSN site-specific infection criterion were first present to 3rd hospital day (day of hospital admission is Day 1). For an HAI, infection criterion may be present during the first 2 hospital days as present on or after Day 3. All elements used to meet the infection cr within a timeframe that does not exceed a gap of 1 calendar day be

Primary bloodstream infections (BSI) are laboratory-confirmed bl (LCBI) that are not secondary to an infection at another body site Secondary Bloodstream Infection (BSI) Guide and HAI Definitio

Date of event: For a BSI the date of event is the date when the la the laboratory-confirmed bloodstream infection (LCBI) criterion infection date, date of infection.

4-1

January 2013

CDC/NHSN Surveillance Definition of Hea Infection and Criteria for Specific Types o Care Setting

INTRODUCTION

This chapter contains the CDC/NHSN surveillance definition and criteria for all specific types of HAI. Comments and repor criteria provide further explanation and are integral to the corr also provides further required criteria for the specific infectio site infections (SSI) (e.g., mediastinitis [MED] that may follo abdominal abscess [IAB] after colon surgery).

Additionally, it is necessary to refer to the criteria in this cha blood culture represents a primary bloodstream infection (B (see Appendix 1 Secondary BSI Guide). A BSI that is ident meet one of the criteria of HAI detailed in this chapter. Sec events in NHSN, nor can they be associated with the use o

Also included in this chapter are the criteria for Ventilator that Ventilator-Associated Condition (VAC), the first def algorithm and the foundation for the other definitions wit Probable VAP) may or may not be infection-related.

CDC/NHSN SURVEILLANCE DEFINITION OF H

For the purposes of NHSN surveillance in the acute car localized or systemic condition resulting from an adver agent(s) or its toxin(s) that was not present on admissi considered an HAI if all elements of a CDC/NHSN sit together on or after the 3rd hospital day (day of hospita the infection criterion may be present during the first after day 3. All elements used to meet the infection c exceed a gap of 1 calendar day between elements. Th shown in Table 1.

Table 1. Examples of Application of HAI Definitio

Day 1	Day 2	Day 3	Day
Admit to ICU	ICU	ICU All elements of infection criterion were first present together	

January 2013

Microsoft Excel - CDC organism list Jan 2013.xlsx

	A	B	C
1	Organism and NHSN Code	SNOMED Concept Code	SNOMED Fully Specified Name
2	Actinomyces propionicus - PRPRO	427413007	Propionibacterium propionicum (organism)
3	Aerococcus christensenii - AECH	409818008	Aerococcus christensenii (organism)
4	Aerococcus Genus - AEGU	9008009	Genus Aerococcus (organism)
5	Aerococcus sanguicola - AESG	131205009	Aerococcus sanguicola (organism)
6	Aerococcus sanguinicola - AESGN	427222006	Aerococcus sanguinicola (organism)
7	Aerococcus spp. - AESP	131206005	Aerococcus species (organism)
8	Aerococcus urinae - AEUR	243230001	Aerococcus urinae (organism)
9	Aerococcus urinaeequi - AEURQ	430979003	Aerococcus urinaeequi (organism)
10	Aerococcus urinaehominis - AEURH	409819000	Aerococcus urinaehominis (organism)
11	Aerococcus viridans - AEVI	78803006	Aerococcus viridans (organism)
12	Arachnia propionica - PRPRO	427413007	Propionibacterium propionicum (organism)
13	Arthrobacter variabilis - CORVAR	11575001	Corynebacterium variabile (organism)
14	Bacillus aeolius - BAEOL	428272006	Bacillus aeolius (organism)
15	Bacillus aerius - BAERI	446486005	Bacillus aerius (organism)
16	Bacillus agaradhaerens - BAGAR	429112003	Bacillus agaradhaerens (organism)
17	Bacillus alcalophilus - BALCA	90547001	Bacillus alcalophilus (organism)
18	Bacillus algicola - BALGI	428278005	Bacillus algicola (organism)
19	Bacillus amyloliquefaciens - BAMYL	82289003	Bacillus amyloliquefaciens (organism)
20	Bacillus aquimaris - BAQUI	423188000	Bacillus aquimaris (organism)
21	Bacillus arseniciselenatis - BARSE	429004008	Bacillus arseniciselenatis (organism)
22	Bacillus asahii - BASAH	429115001	Bacillus asahii (organism)
23	Bacillus atrophaeus - BATRO	113450006	Bacillus atrophaeus (organism)
24	Bacillus azotoformans - BAZOT	72997009	Bacillus azotoformans (organism)
25	Bacillus badius - BBADI	33457001	Bacillus badius (organism)
26	Bacillus barbaricus - BBARB	429638004	Bacillus barbaricus (organism)
27	Bacillus bataviensis - BBATA	429246006	Bacillus bataviensis (organism)
28	Bacillus benzoevorans - BBENZ	39232002	Bacillus benzoevorans (organism)
29	Bacillus boroniphilus - BBORO	427831003	Bacillus boroniphilus (organism)
30	Bacillus butanolivorans - BBUTA	447039005	Bacillus butanolivorans (organism)
31	Bacillus carboniphilus - BCARB	113451005	Bacillus carboniphilus (organism)
32	Bacillus cereus - BC	84408007	Bacillus cereus (organism)

All Organisms | Top Organisms | Common Commensals | MBI Organisi

Ready

Web page sources 10 Jan 2013

CDC CLABSI Event definitions 4psc

- http://www.cdc.gov/nhsn/pdfs/pscmanual/4psc_clabscurrent.pdf

CDC HAI definitions 17psc

- http://www.cdc.gov/nhsn/PDFs/pscManual/17pscNosInfDef_current.pdf

CDC Commensal organism list

- http://www.cdc.gov/nhsn/library.html
- http://www.cdc.gov/nhsn/xls/master-organism-com-commensals-lists.xlsx

Interpretation “Tool”

CLAB or NOT ? Checklist

Each positive blood culture needs to be reviewed to determine
Note: it is not necessary to actively search for pos

Is this a Laboratory Confirmend Bloodstream Infection (
or Mucosal Barrier Injury (MCI - LCBI) ?

Is there a positive Blood Culture ?
Name of Organism:

Is a Hospital acquired infection (on or after 3rd day in hospital

Is it a "Recognised Pathogen ?
see CDC Master list on tab "CDC commensal org

If it is a common commensal:
Are there two positive blood cultures ?
Is the gap between positive BC ≤ 1 calendar day ?
Are the two organisms the same ?

Are the clinical features criteria met ?
≥ 1 yr of age. One of these:
T > 38C or
chills or
hypotension

≤ 1 yr of age. One of these:
core T > 38C or
hypothermia T < 36C or
apnea or
bradycardia

Could it be a Mucosal Barrier Injury LCBI ?
For some defined additional organisms, only one
Criteria: Allogeneic SCT < 1 yr ago or
Neutrophils < 500/mm^3 recently

LCBI present

Is there another proposed primary site of infection ?	**No**	**Yes**	
Localised to a vascular access site (VASC), clinical pneumonia without laboratory confirmation (PNU1), or ventilator associated condition (VAC or IVAC) ?			→ These can't be used as alternatives to CLABSI. Remains a possible CLABSI
Localised to another site ?			
Has a specimen been collected from the proposed other site ?			→ Go to *
No spec collected. Can the other site CDC 17psc HAI definition be met without culture at the site ?			→ Go to #
No spec collected. Is the BC isolate is a "logical pathogen" at that site: (Appendix 1 p4-15 scenario 3)			HAI code for infection at other site: → Not CLAB
Has an organism been grown from the other site ? Does it meet CDC 17psc criteria for HAI at other site ?			organism name at other site: HAI code for infection at other site: → Not CLAB
Proposed other site HAI definition can be satisfied by BC only Refer to CDC 17psc			HAI code for infection at other site: → Not CLAB
Check organism matching criteria if not a recognised pathogen Does the other organism "match" ? Appendix 1 scenarios 1 & 2 p4-14 & 4-15			HAI code for infection at other site: → Not CLAB
LCBI or MCI - LCBI and not related to infection at another site			→ Not CLAB

Early Tool logo en.wikipedia.org

CLAB present

Which ward should the CLAB be attributed to ?	**No**	**Yes**	
Patient was on the ward on the day when the last element of the LCBI / MCI - LCBI occurred refer to 4psc "Location of attribution" p4-3 to 4-4			→ CLAB
Transfer rule all elements of LCBI / MCI - LCBI were present within 2 calendar days of leaving the ward.			→ CLAB
Other ward does not have overnight patients (eg ED, OT)			→ CLAB
Haemodialysis under contract			→ CLAB
			name of other ward / clinical unit: → Attribute CLAB to other unit

CLAB Scenario Training Exercise

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6
Blood Culture Positive	Yes	Yes	No	Yes	Yes	Yes
Organism	MRSA	S. anginos	S. aureus	K. pneumoniae	Providenci	S. lugdunensis
HAI ? (≥ 2nd or 3rd day in hospital)	S. pneumoniae No					
recognised pathogen/common commensal	pathogen	commensa	n.a.	pathogen	pathogen	pathogen
gap between blood cultures < 1 calendar day		Yes				
matching commensal organisms		Yes				
clinical criteria for commensals		Yes				
mucosal barrier injury orgs						
HAI at another site	No	No	VASC	PNU1	No	Yes
not VASC, PNEU1 or VAC						
Specimen from other site		Yes				Yes
Matching organism from other site		No				Yes
Date is while on ward or within 2 calendar days	Yes	Yes	Yes	Yes	Yes	Yes
Other ward has overnight patients						
Conclusion	CLAB	CLAB	VASC	CLAB and PNU1	CLAB	SUTI
	MRSA	S. anginos	S. aureus	K. pneumoniae	P. stuartii	S. lugdunensis and E. coli

Case 1 of 6

1 July 2012

- A 67 yr old man with chronic airways disease is admitted to ICU with pneumonia. Rx amox/clav and erythromycin.

1 July

- Blood culture grows S. pneumoniae

3 July

- CXR shows empyema

4 July

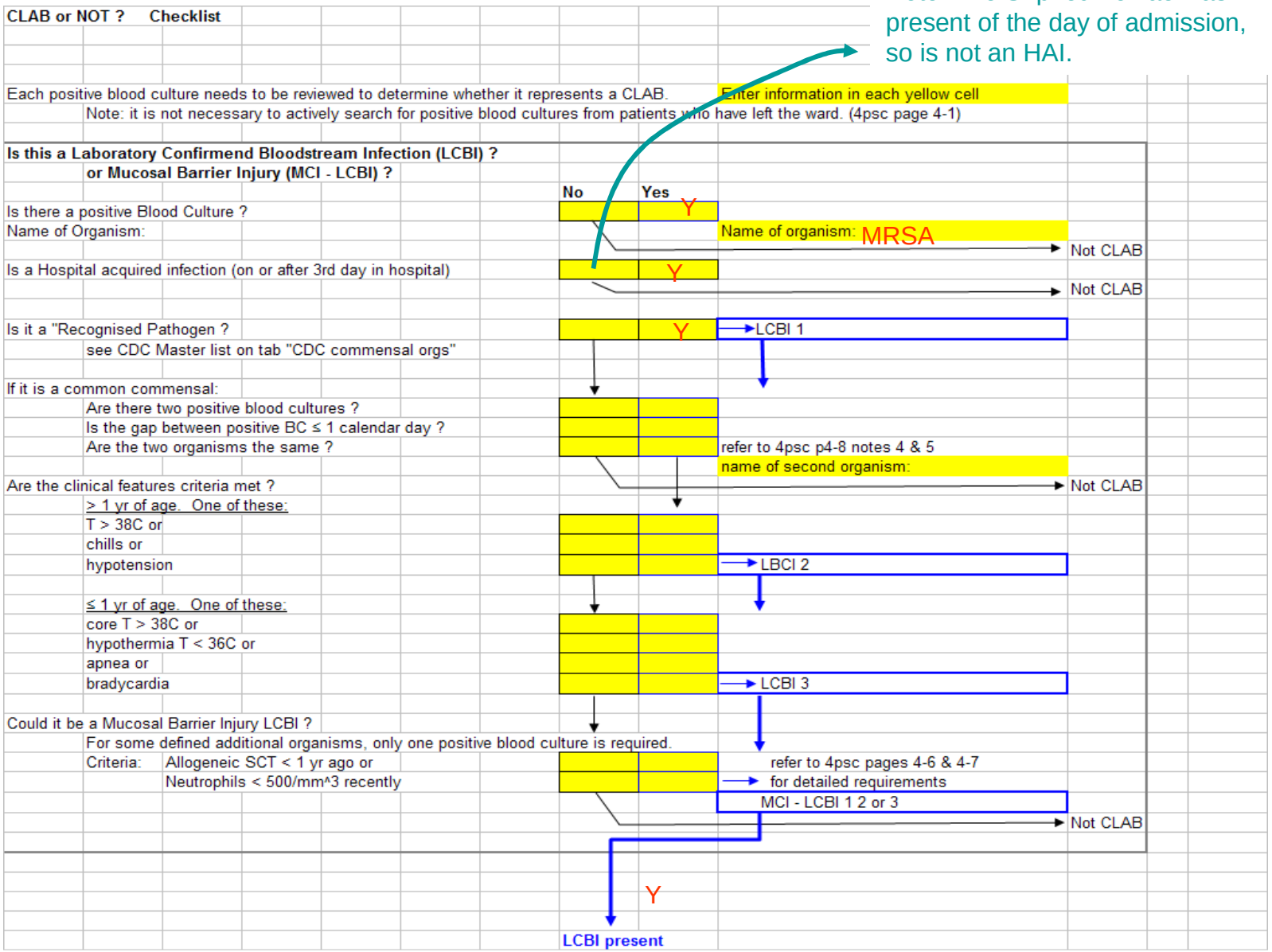
- One set of blood culture grows MRSA. Second set is no growth. No other site of infection apparent.

6 July

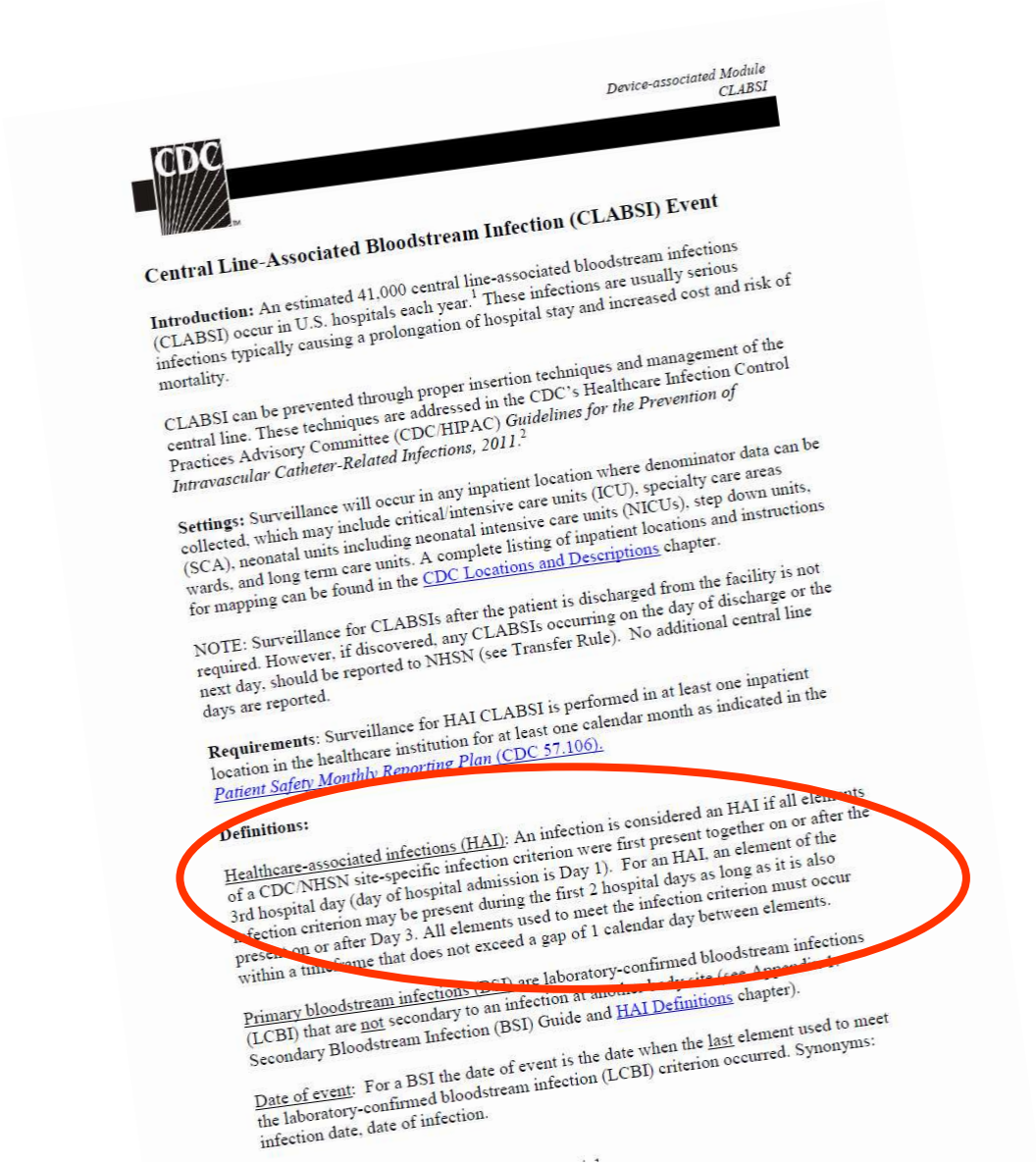
- Nasal screening swab grows MRSA. No nose symptoms.

Case 1: Was there an LCBI ?

Note: The S. pneumoniae was present of the day of admission, so is not an HAI.



Community acquired infections



Device-associated Module
CLABSI

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Settings: Surveillance will occur in any inpatient location where denominator data can be collected, which may include critical/intensive care units (ICU), specialty care areas (SCA), neonatal units including neonatal intensive care units (NICUs), step down units, wards, and long term care units. A complete listing of inpatient locations and instructions for mapping can be found in the CDC Locations and Descriptions chapter.

NOTE: Surveillance for CLABSIs after the patient is discharged from the facility is not required. However, if discovered, any CLABSIs occurring on the day of discharge or the next day, should be reported to NHSN (see Transfer Rule). No additional central line days are reported.

Requirements: Surveillance for HAI CLABSI is performed in at least one inpatient location in the healthcare institution for at least one calendar month as indicated in the *Patient Safety Monthly Reporting Plan* (CDC 57.106).

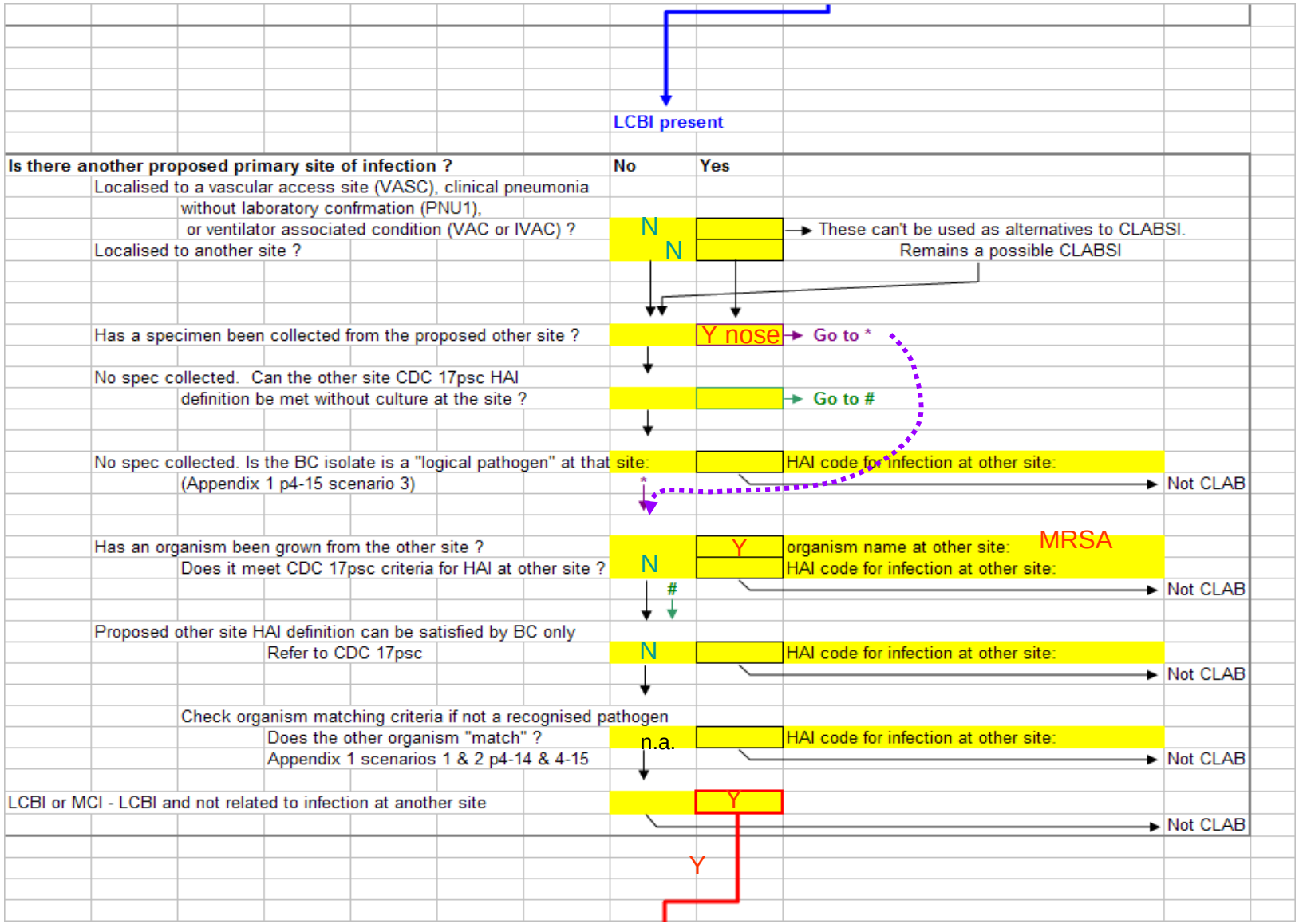
Definitions:

Healthcare-associated infections (HAI): An infection is considered an HAI if all elements of a CDC/NHSN site-specific infection criterion were first present together on or after the 3rd hospital day (day of hospital admission is Day 1). For an HAI, an element of the infection criterion may be present during the first 2 hospital days as long as it is also present on or after Day 3. All elements used to meet the infection criterion must occur within a time frame that does not exceed a gap of 1 calendar day between elements.

Primary bloodstream infections (BSI) are laboratory-confirmed bloodstream infections (LCBI) that are not secondary to an infection at another body site (see Appendix: Secondary Bloodstream Infection (BSI) Guide and HAI Definitions chapter).

Date of event: For a BSI the date of event is the date when the last element used to meet the laboratory-confirmed bloodstream infection (LCBI) criterion occurred. Synonyms: infection date, date of infection.

Case 1: Was it a CLAB or another HAI ?



ST-Soft tissue infection (necrotizing fascitis, infectious gangrene, necrotizing cellulitis, infectious myositis, lymphadenitis, or lymphangitis)

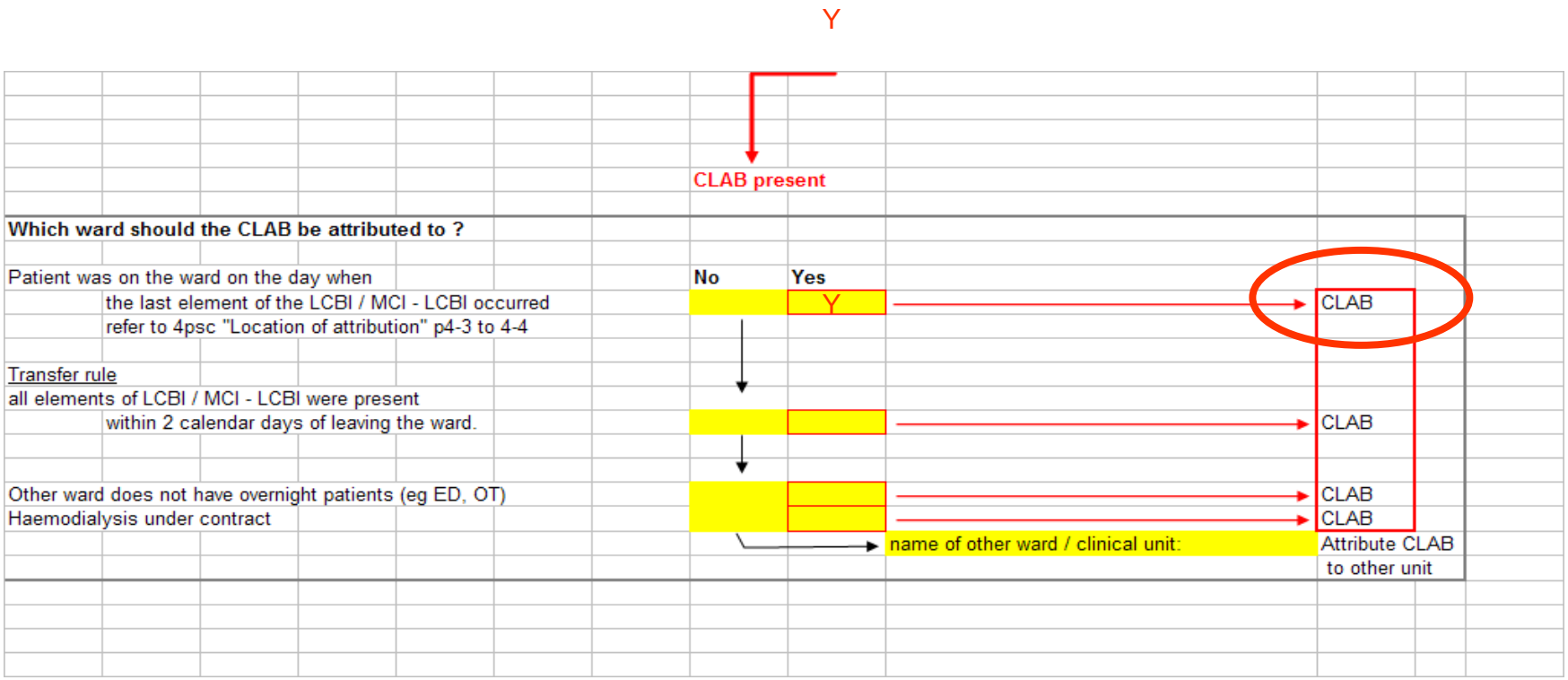
Soft tissue infections must meet at least *1* of the following criteria:

1. Patient has organisms cultured from tissue or drainage from affected site.
2. Patient has purulent drainage at affected site.
3. Patient has an abscess or other evidence of infection seen during an invasive procedure or histopathologic examination.
4. Patient has at least *2* of the following signs or symptoms at the affected site with no other recognized cause: localized pain or tenderness, redness, swelling, or heat
   and
   at least *1* of the following:
   a. organisms cultured from blood
   b. positive laboratory test performed on blood or urine (e.g., antigen tests for *H influenzae*, *S pneumoniae*, *N meningitidis*, Group B *Streptococcus*, or *Candida* spp)
   c. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen.

Reporting instructions

- Report infected decubitus ulcers as DECU.
- Report infection of deep pelvic tissues as OREP.
- Even if there are clinical signs or symptoms of localized infection at a vascular access site, but no other infection can be found, the infection is considered a primary BSI.

Location of attribution



Case 1 Overview

- The S. pneumoniae was a community acquired infection.
  - The requirement is for surveillance of HAI CLABSI (4psc p4-1).
  - The wording *“may be present during the first 2 hospital days as long as it is also present on or after Day 3.”* is unhelpful.
- For a recognised pathogen, just one positive blood culture is enough, even if other sets are no growth.
- The nasal swab without clinical signs of infection is not enough to diagnose an infection at another site (ST 17psc p17-5 & 44).
- Clinically, there would be uncertainty whether a central line infection was really present in this case.