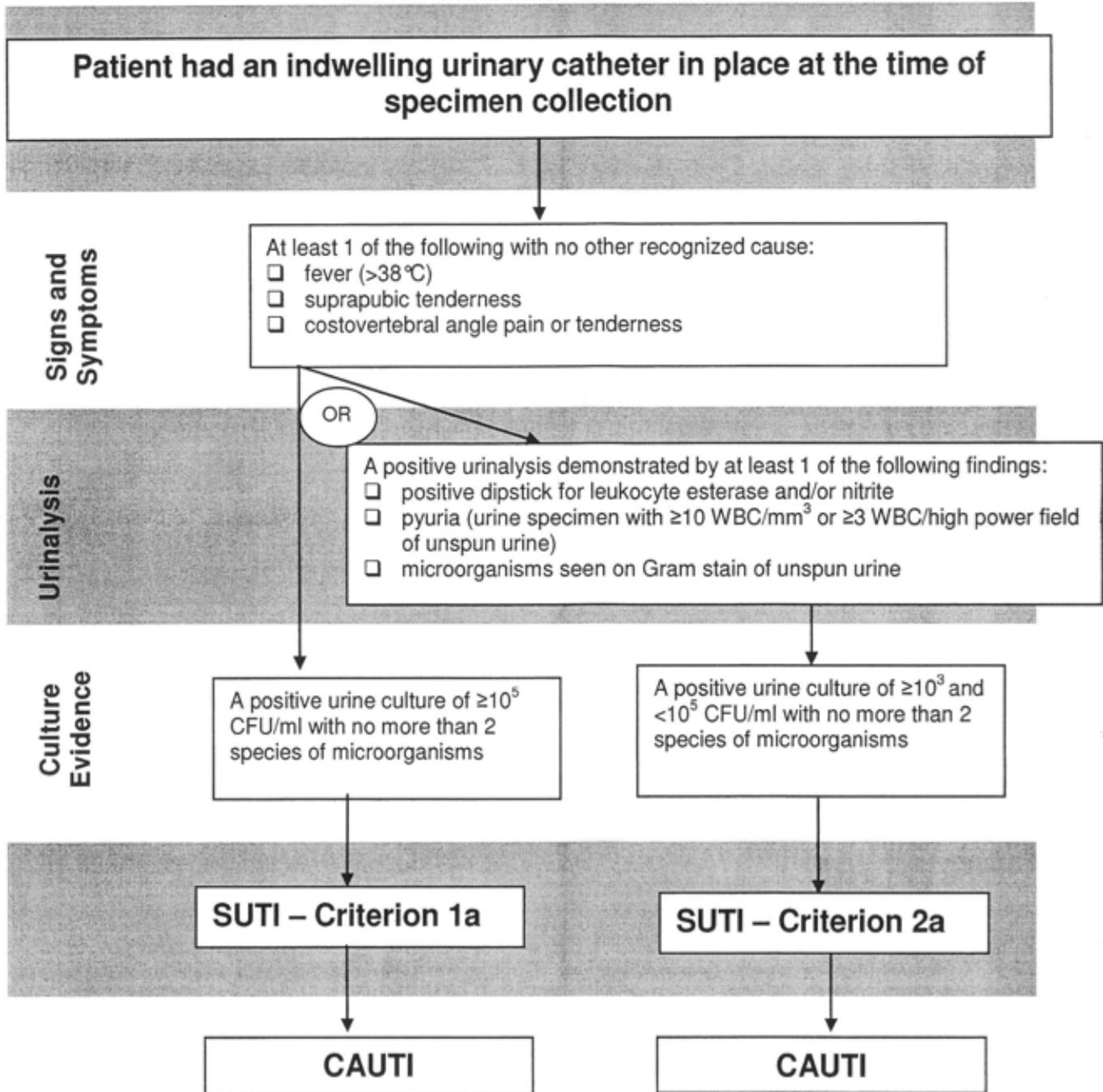


Infection Definitions Worksheets

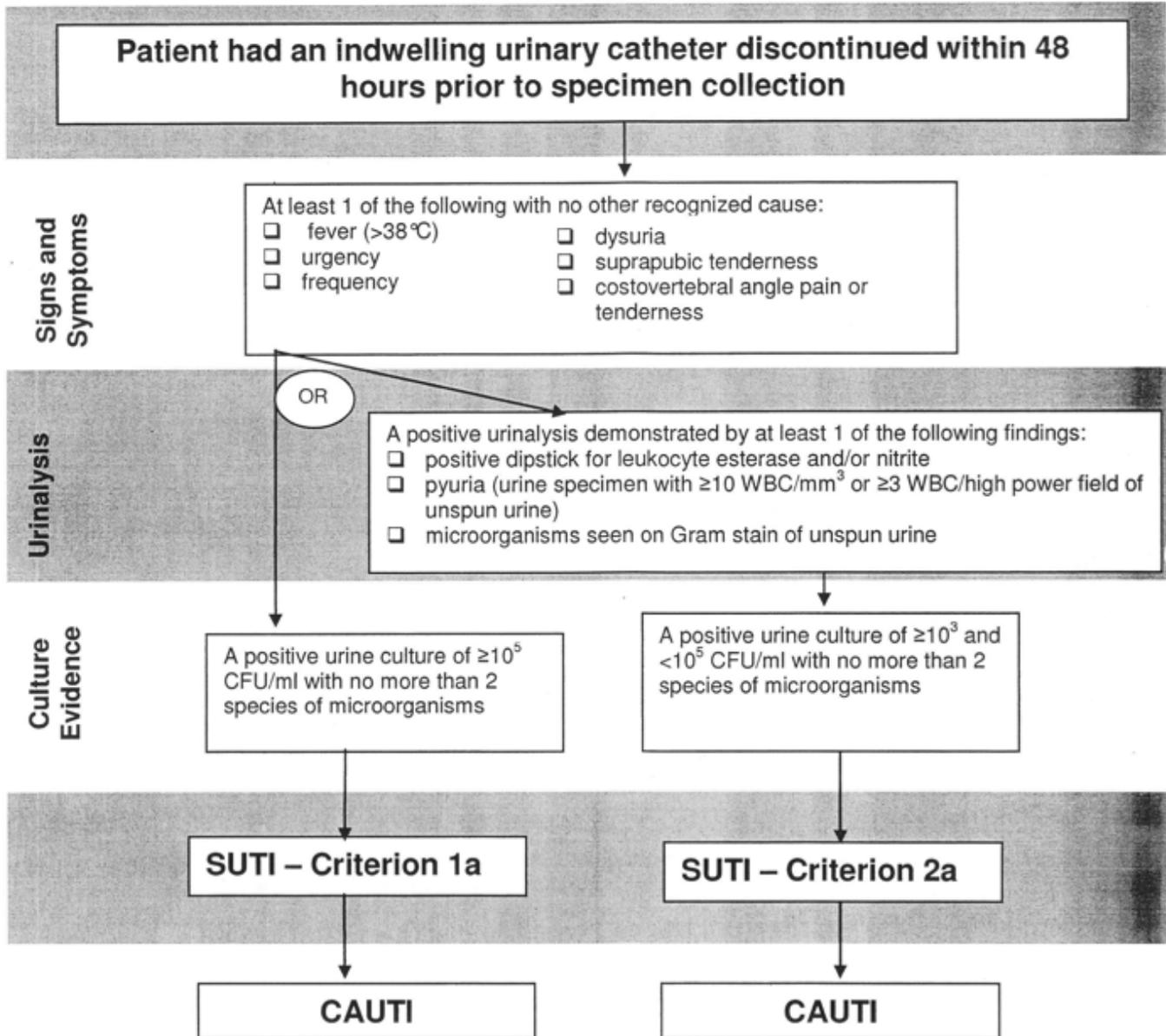
Instructions: 1) Use when reviewing positive blood cultures for determining and documenting whether the bacteremia is a primary bloodstream infection (or CLABSI), secondary to another site of infection, or contaminant. 2) Use for surgical site infection (SSI) surveillance. 3) DO NOT use for LabID C. difficile infection (CDI) or MRSA-VRE bloodstream infection surveillance. 4) Refer to often when performing surveillance. Make notes on individual infection pages as you are reviewing medical records. 5) For official (up-to-date) definitions, refer to NHSN at www.cdc.gov/nhsn.

Page		Page	
2	Urinary tract Infections	14	Cardiovascular system infections
	SUTI Symptomatic urinary tract infection		VASC Arterial or venous infection
	• Catheter in place at time of specimen-2		ENDO Endocarditis
	• Catheter recently removed, past 48h-3		CARD Myocarditis or pericarditis
	• NOT catheter-associated - 4		MED Mediastinitis
	• In infants and babies \leq 1 year old - 5		
6	ABUTI Asymptomatic UTI with Bacteremia	16	Eye, ear, nose, throat, mouth, and URI infections
7	Surgical site infections		CONJ Conjunctivitis
	SIP Superficial incisional primary SSI		EYE Eye, other than conjunctivitis
	SIS Superficial incis. secondary SSI		EAR Ear, mastoid
	DIP Deep incisional primary SSI		ORAL Oral cavity (mouth, tongue, or gums)
	DIS Deep incisional secondary SSI		SINU Sinusitis
	SSI-xxx Organ/space specific types		UR Upper respiratory tract, pharyngitis
	• BONE - 11 • JNT - 11		laryngitis, epiglottitis
	• BRST - 25 • LUNG - 21	19	Gastrointestinal system infection
	• CARD - 15 • MED -15		GE Gastroenteritis
	• DISC - 11 • MEN - 13		GIT Gastrointestinal (GI) Tract
	• EAR - 17 • ORAL - 17		HEP Hepatitis
	• EMET - 22 • OREP -22		IAB Intrabdominal not specified elsewhere
	• ENDO - 14 • SA - 13		NEC Necrotizing enterocolitis
	• EYE - 16 • SINU - 18	21	Lower respiratory tract infection, other than Pneu
	• GIT - 19 • UR - 18		BRON Bronchitis, tracheobronchitis,
	• IAB - 20 • VASC - 14		tracheitis, without evidence of pneu
	• IC - 12 • VCUF - 22		LUNG Other infections of lower resp tract
8	Bloodstream infection	22	Reproductive tract infections
	LCBI Lab-confirmed BSI		EMET Endometritis
9	Pneumonia		EPIS Episiotomy
	PNU1 Clinically defined pneumonia		VCUF Vaginal cuff
	PNU2 Pneu with specific lab findings		OREP Other infections of male or female
	PNU3 Pneu in immunocompromised		reproductive tract
10	PNU1 Alternate clinical definition, \leq 1yo	23	Skin and soft tissue infection
11	Bone and joint infections		SKIN Skin
	BONE Osteomyelitis		ST Soft tissue
	JNT Joint or bursa		DECU Decubitus ulcer
	DISC Disc space		BURN Burn
12	Central nervous system infections		BRST Breast abscess or mastitis
	IC Intracranial infection		UMB Omphalitis
	MEN Meningitis or ventriculitis		PUST Pustulosis
	SA Spinal abscess without meningitis		CIRC Newborn circumcision
26	Systemic Infection		
	DI Disseminated infection		

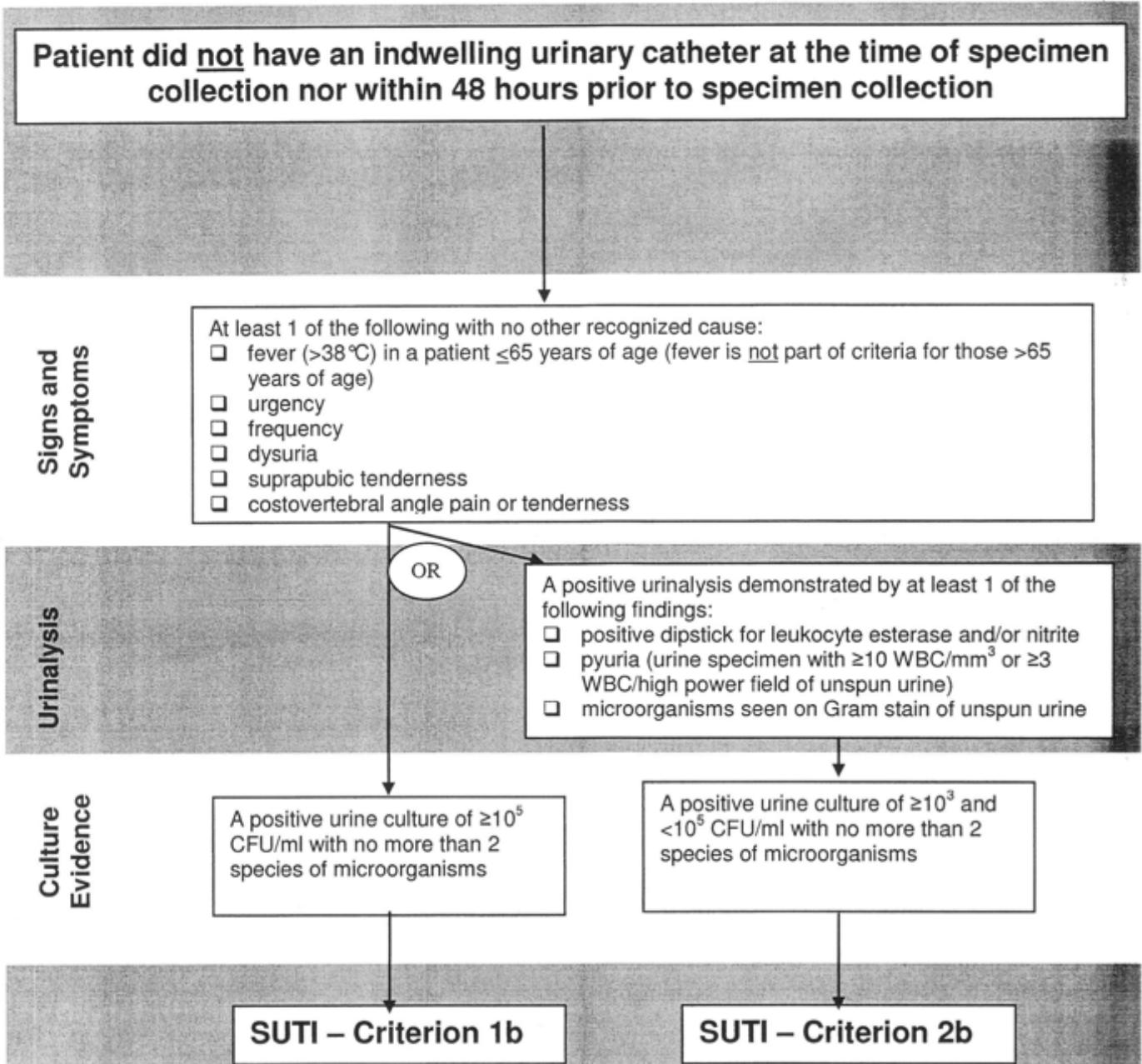
**CATHETER-ASSOCIATED SYMPTOMATIC UTI
IN PATIENT WITH CATHETER IN PLACE**



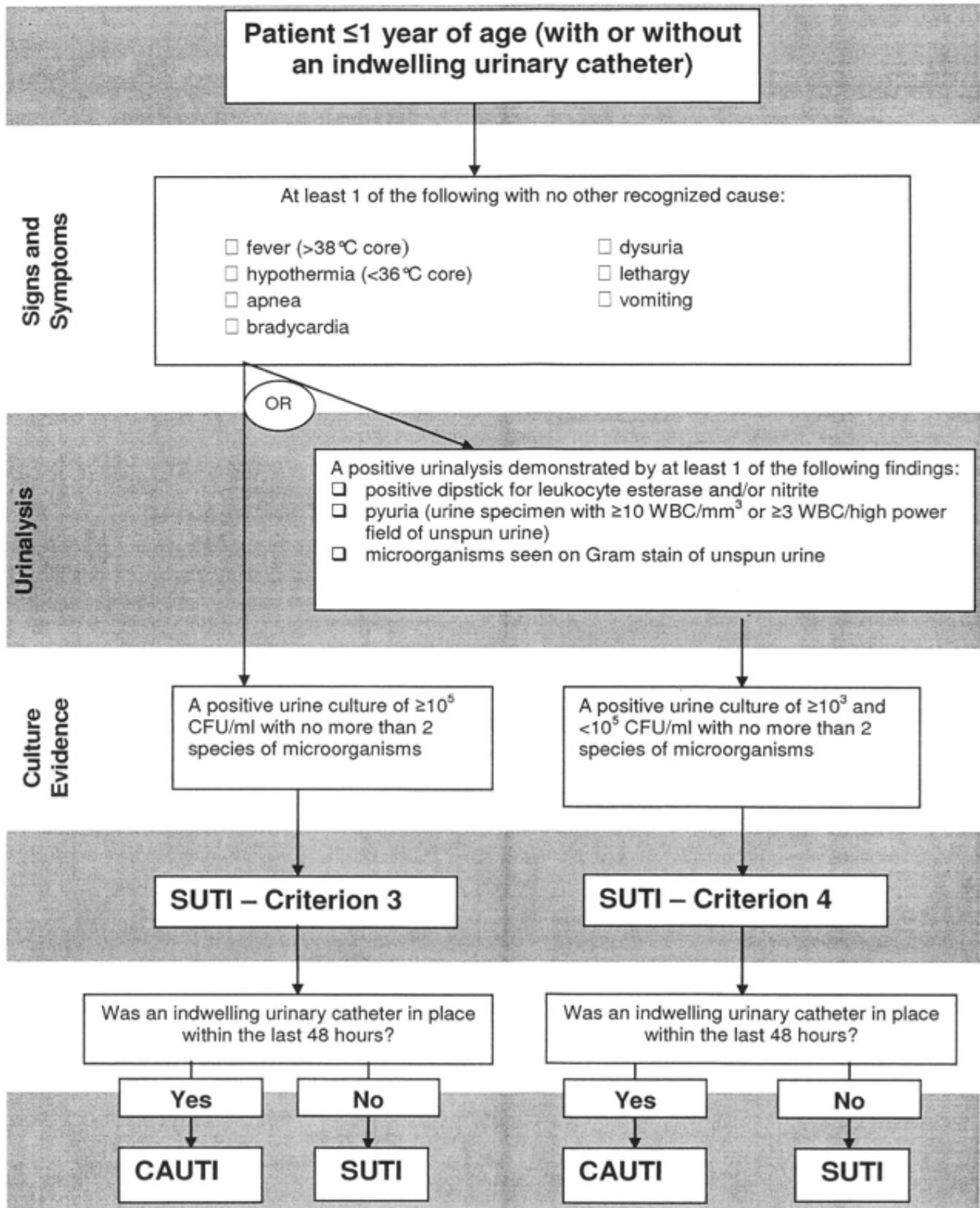
**CATHETER-ASSOCIATED SYMPTOMATIC UTI
IN PATIENT WITH CATHETER RECENTLY REMOVED**



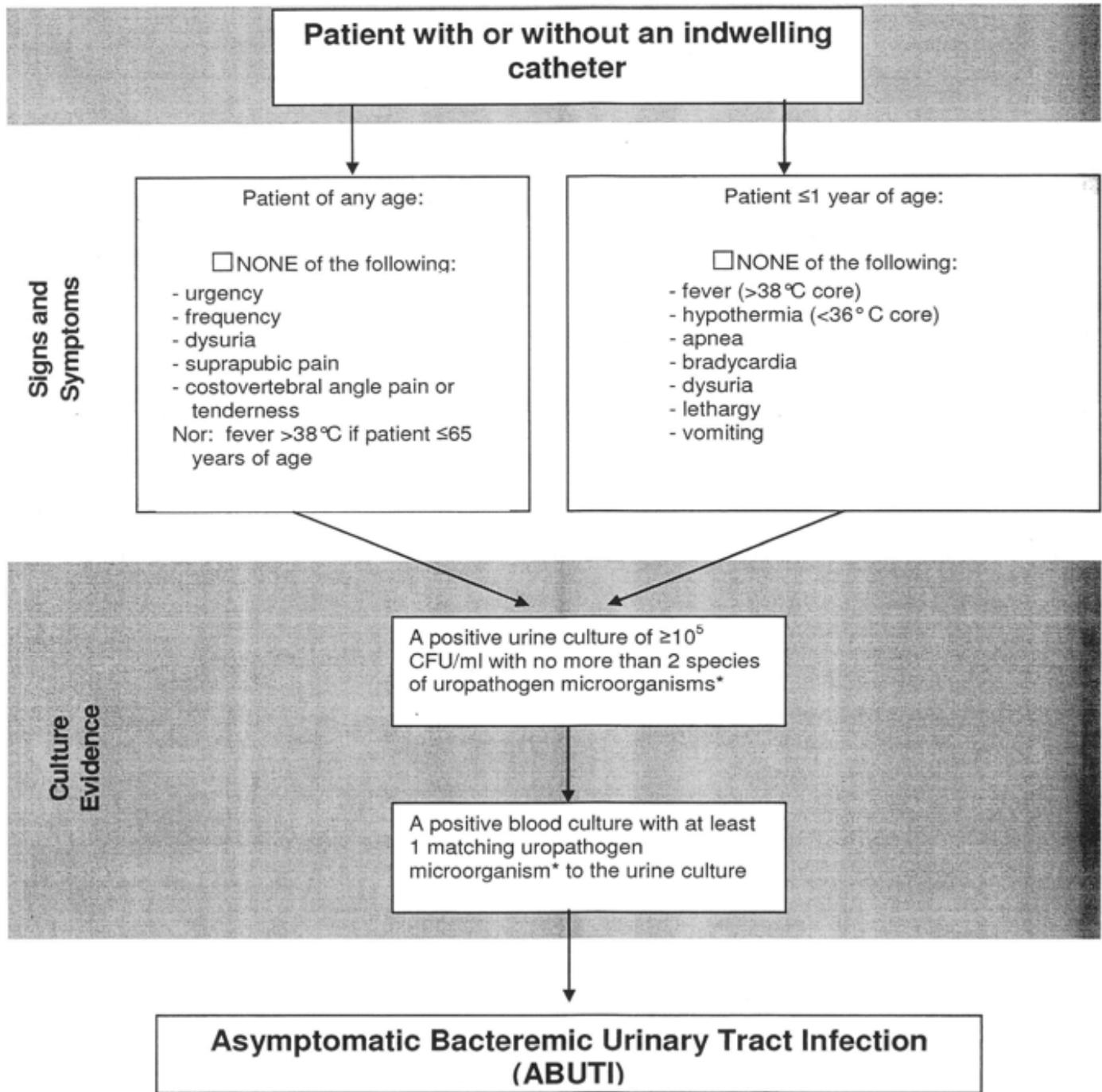
SYMPTOMATIC UTI NOT CATHETER-ASSOCIATED



SYMPTOMATIC UTI IN BABIES \leq 1 YEAR OLD



ASYMPTOMATIC UTI WITH BACTEREMIA



*Uropathogen microorganisms are: Gram-negative bacilli, *Staphylococcus* spp., yeasts, beta-hemolytic *Streptococcus* spp., *Enterococcus* spp., *G. vaginalis*, *Aerococcus urinae*, *Corynebacterium* (urease positive)[†]

[†]Report *Corynebacterium* (urease positive) as either *Corynebacterium species unspecified* (COS) or, as *C. urealyticum* (CORUR) if so speciated.

SURGICAL SITE INFECTION

Criterion 1

- Infection occurs within 30 days after the operative procedure

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.) organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision
- c.) ≥ 1 of the following signs or symptoms of infection: pain or tenderness, localized swelling, redness, or heat, and superficial incision is deliberately opened by surgeon and is culture positive or not cultured (a culture-negative finding does not meet this criterion)
- d.) diagnosis of a superficial incisional SSI by the surgeon or attending physician

Superficial incisional SSI (SUP INC)

Criterion 1

- Infection occurs within 30 days after the operative procedure if no implant 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

- involves deep soft tissues (e.g. fascial and muscle layers) of the incision

and

Patient has at least one of the following:

- a.) purulent drainage from the deep incision but not from the organ/space component of the surgical site
- b.) a deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture-positive or not cultured when the patient has at least one of the following signs or symptoms: fever (>38°C), or localized pain or tenderness. A culture-negative finding does not meet this criterion.
- c.) an abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination
- d.) diagnosis of a deep incisional SSI by the surgeon or attending physician

Deep incisional SSI (DEEP INC)

Criterion 1

- Infection occurs within 30 days after the operative procedure if no implant 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 one of the following:

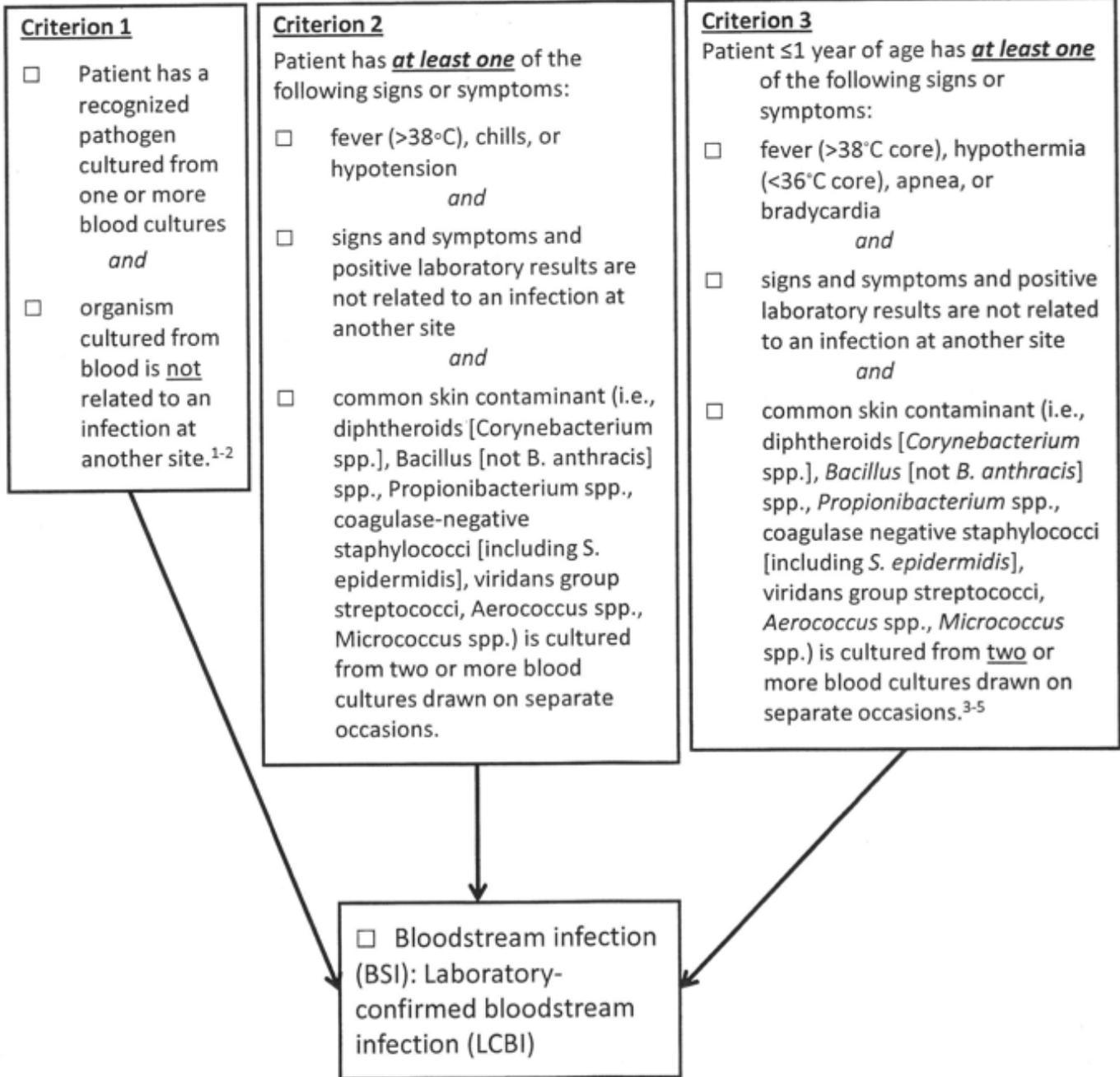
- a.) purulent drainage from a drain that is placed through a stab wound into the organ/space
- b.) organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space
- c.) an abscess or other evidence of infection involving the organ/space that is found on direct examination,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

Organ/space SSI (ORGAN/SPACE) **NOTE: Criteria for a specific site organ/space SSI must also be met

**PRIMARY BLOODSTREAM INFECTION
CLABSI**

Patient must meet one of the following (Criterion 1, 2 or 3)

CRITERIA 1 & 2 FOR PATIENTS OF ANY AGE INCLUDING INFANTS



PNEUMONIA FLOW DIAGRAM

Facility ID # _____ Event # _____ Event Date ____/____/____

Instructions: Complete form only if x-ray criteria are met

X-Ray

Patient **with underlying diseases**^{1,2} has **2 or more serial X-rays** with **one** of the following:

- New or progressive **and** persistent infiltrate
- Consolidation
- Cavitation
- Pneumatoceles, in ≤ 1 y.o.

Patient **without underlying diseases**^{1,2} has **1 or more serial X-rays** with **one** of the following:

- New or progressive **and** persistent infiltrate
- Consolidation
- Cavitation
- Pneumatoceles, in ≤ 1 y.o.

Signs and Symptoms

At least **one** of the following:

- Fever ($> 38^{\circ}$ C/ 100.4° F) with no other cause
- Leukopenia ($< 4,000$ WBC/mm³) **or** leukocytosis ($\geq 12,000$ WBC/mm³)
- Altered mental status with no other cause, in ≥ 70 y.o.

At least **one** of the following in an **immunocompromised patient**¹³:

- Fever ($> 38^{\circ}$ C/ 100.4° F) with no other cause
- Altered mental status with no other cause, in ≥ 70 y.o.
- New onset of purulent sputum,³ or change in character of sputum, or \uparrow respiratory secretions, or \uparrow suctioning requirements⁴
- New onset or worsening cough, or dyspnea, or tachypnea⁵
- Rales⁶ or bronchial breath sounds
- Worsening gas exchange (e.g., O₂ desats [e.g., PaO₂/FiO₂ ≤ 240],⁷ \uparrow O₂ req, or \uparrow ventilation demand)
- Hemoptysis
- Pleuritic chest pain

At least **two** of the following:

- New onset of purulent sputum,³ or change in character of sputum, or \uparrow respiratory secretions, or \uparrow suctioning requirements⁴
- New onset or worsening cough, or dyspnea, or tachypnea⁵
- Rales⁶ or bronchial breath sounds
- Worsening gas exchange (e.g., O₂ desats [e.g., PaO₂/FiO₂ ≤ 240],⁷ \uparrow O₂ req, or \uparrow ventilation demand)

At least **one** of the following:

- New onset of purulent sputum,³ or change in character of sputum, or \uparrow respiratory secretions, or \uparrow suctioning requirements⁴
- New onset or worsening cough, or dyspnea, or tachypnea⁵
- Rales⁶ or bronchial breath sounds
- Worsening gas exchange (e.g., O₂ desats [e.g., PaO₂/FiO₂ ≤ 240],⁷ \uparrow O₂ req, or \uparrow ventilation demand)

Laboratory

At least **one** of the following:

- Positive blood culture not related to another infection⁸
- Positive pleural fluid culture
- Positive quantitative culture⁹ from minimally contaminated LRT specimen (e.g., BAL or protected specimen brushing)
- $\geq 5\%$ BAL-obtained cells contain intracellular bacteria on direct microscopic exam
- Histopathologic exam shows **one** of the following:
 - Abscess formation or foci of consolidation with intense PMN accumulation in bronchioles and alveoli
 - Positive quantitative culture⁹ of lung parenchyma
 - Evidence of lung parenchyma invasion by fungal hyphae or pseudohyphae

At least **one** of the following¹⁰⁻¹²:

- Positive culture of virus or *Chlamydia* from respiratory secretions
- Positive detection of viral antigen or antibody from respiratory secretions (e.g., EIA, FAMA, shell vial assay, PCR)
- 4-fold rise in paired sera (IgG) for pathogen (e.g., Influenza viruses, *Chlamydia*)
- Positive PCR for *Chlamydia* or *Mycoplasma*
- Positive micro-IF test for *Chlamydia*
- Positive culture or micro-IF of *Legionella* spp from respiratory secretions or tissue
- Detection of *Legionella pneumophila* serogroup 1 antigens in urine by RIA or EIA
- 4-fold rise in *L. pneumophila* antibody titer to $\geq 1:128$ in paired acute and convalescent sera by indirect IFA

At least **one** of the following:

- Matching positive blood and sputum cultures with *Candida* spp^{14,15}
- Evidence of fungi or *Pneumocystis carinii* from minimally contaminated LRT specimen (e.g., BAL or protected specimen brushing) from **one** of the following:
 - Direct microscopic exam
 - Positive culture of fungi

Immunocompromised

Immunocompromised

Immunocompromised

Immunocompromised

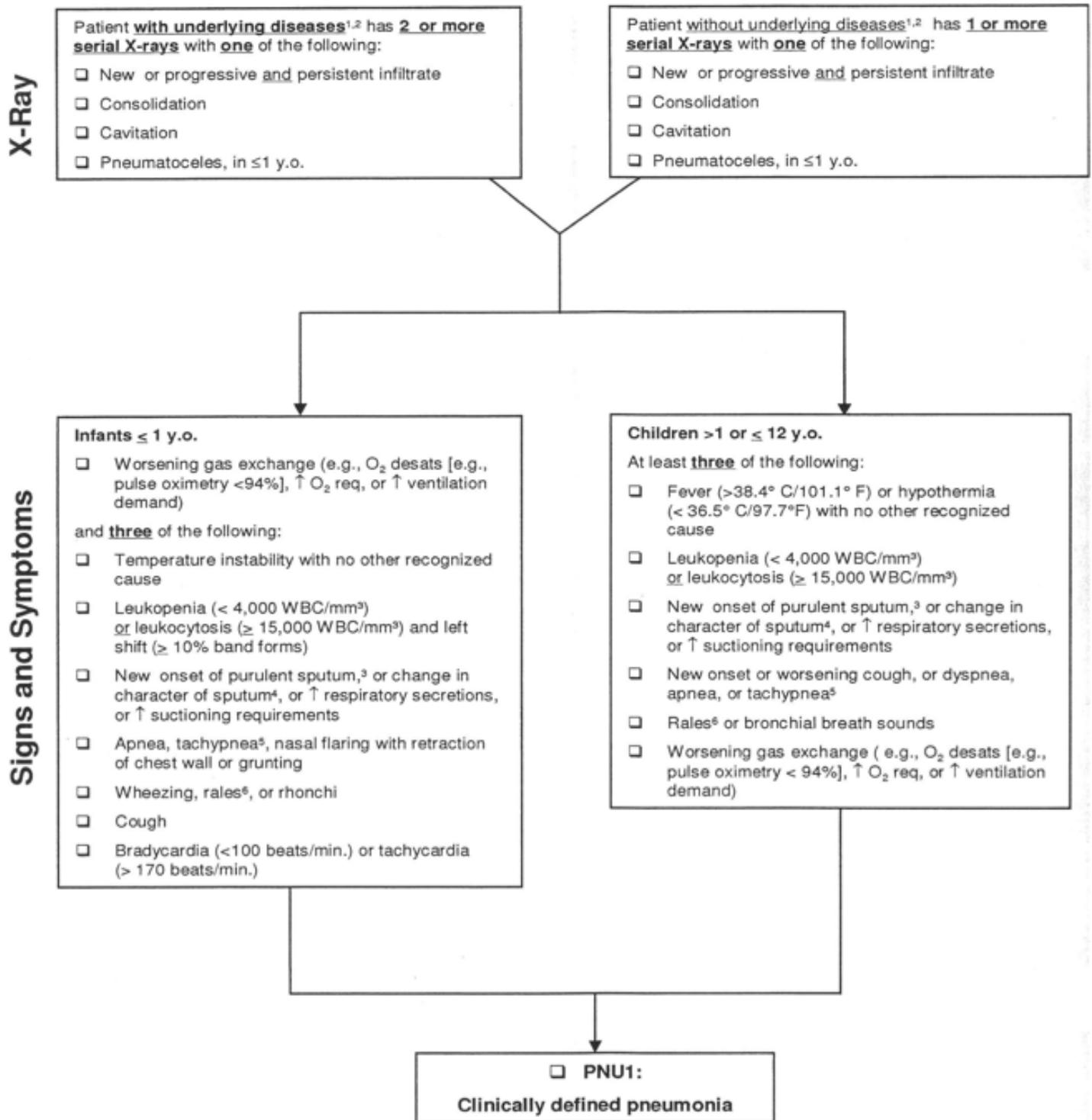
PNU1: Clinically defined pneumonia

PNU2: Pneumonia with common bacterial or filamentous fungal pathogens and specific lab findings

PNU2: Pneumonia with viral, *Legionella*, *Chlamydia*, *Mycoplasma*, and other uncommon pathogens and specific lab findings

PNU3: Pneumonia in immunocompromised patients

PNEUMONIA – ALTERNATE DEFINITION FOR INFANTS AND CHILDREN



BONE AND JOINT INFECTIONS

BONE - Osteomyelitis

Must meet at least **1** of the following criteria:

- 1. Patient has organisms cultured from bone.
- 2. Patient has evidence of osteomyelitis on direct examination of the bone during a surgical operation or histopathologic examination.
- 3. Patient has at least **2** of the following signs or symptoms with no other recognized cause:
 - fever (>38°C), localized swelling, tenderness, heat, or drainage at suspected site of bone infection**and**
 at least **1** of the following:
 - a. organisms cultured from blood
 - b. positive blood antigen test (eg, *H influenzae*, *S pneumoniae*)
 - c. radiographic evidence of infection (eg. Abnormal findings on x-ray, CT scan, MRI, radiolabel scan [gallium, technetium, etc])

Reporting instruction

Report mediastinitis following cardiac surgery that is accompanied by osteomyelitis as SSI-MED rather than SSI-BONE.

JNT - Joint or bursa

Must meet at least **1** of the following criteria:

- 1. Patient has organisms cultured from joint fluid or synovial biopsy.
- 2. Patient has evidence of joint or bursa infection seen during a surgical operation or histopathologic examination.
- 3. Patient has at least 2 of the following signs or symptoms with no other recognized cause:
 - joint pain, swelling, tenderness, heat, evidence of effusion or limitation of motion**and**
 at least 1 of the following:
 - a. organisms **and** white blood cells seen on Gram's stain of joint fluid
 - b. positive antigen test on blood, urine, or joint fluid
 - c. cellular profile and chemistries of joint fluid compatible with infection and **not** explained by an underlying rheumatologic disorder
 - d. radiographic evidence of infection (eg. Abnormal findings on x-ray, CT scan, MRI, radiolabel scan (gallium, technetium, etc)).

DISC - Disc space infection

Vertebral disc space infection must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from vertebral disc space tissue obtained during a surgical operation or needle aspiration.
- 2. Patient has evidence of vertebral disc space infection seen during a surgical operation or histopathologic examination.
- 3. Patient has fever (>38°C) with no other recognized cause or pain at the involved vertebra disc space **and** radiographic evidence of infection, (eg, abnormal findings on x-ray, CT scan, MRI, radiolabel scan (gallium, technetium, etc).
- 4. Patient has fever (>38°C) with no other recognized cause and pain at the involved vertebral disc space **and**
 - positive antigen test on blood or urine (eg. *H influenzae*, *S pneumoniae*, *N meningitidis*, or
 - Group B *Streptococcus*).

CENTRAL NERVOUS SYSTEM INFECTION

IC - Intracranial infections (Brain Abscess, Subdural or Epidural Infection, Encephalitis)

Intracranial infection must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from brain tissue or dura.
- 2. Patient has an abscess or evidence of intracranial infection seen during a surgical operation or histopathologic examination.
- 3. Patient has at least 2 of the following signs or symptoms with no other recognized cause: headache, dizziness, fever (>38°C), localizing neurologic signs, changing level of consciousness, or confusion
and
at least 1 of the following:
 - a. organisms seen on microscopic examination of brain or abscess tissue obtained by needle aspiration or by biopsy during a surgical operation or autopsy
 - b. positive antigen test on blood or urine
 - c. radiographic evidence of infection, (eg, abnormal findings on ultrasound, CT scan, MRI, radio nuclide brain scan, or arteriogram)
 - d. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen
 and
if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy.
- 4. Patient ≤1 year of age has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C rectal), hypothermia <37°C rectal), apnea, bradycardia, localizing neurologic signs, or changing level of consciousness
and
at least 1 of the following:
 - a. organisms seen on microscopic examination of brain or abscess tissue obtained by needle aspiration or by biopsy during a surgical operation or autopsy
 - b. positive antigen test on blood or urine
 - c. radiographic evidence of infection, (eg, abnormal findings on ultrasound, CT scan, MRI, radionuclide brain scan, or arteriogram)
 - d. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen
 and
if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy.

Reporting instruction

- If meningitis and a brain abscess are present together, report the infection as IC.

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°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.

Reporting instructions

- Report spinal abscess *with* meningitis as MEN.

MEN – Meningitis or ventriculitis

Meningitis or ventriculitis must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from cerebrospinal fluid (CSF).
- 2. Patient has at least 1 of the following signs or symptoms with no other recognized cause: fever ($>38^{\circ}\text{C}$), headache, stiff neck, meningeal signs, cranial nerve signs, or irritability
and
at least 1 of the following:
 - a. increased white cells, elevated protein, and/or decreased glucose in CSF
 - b. organisms seen on Gram's stain of CSF
 - c. organisms cultured from blood
 - d. positive antigen test of CSF, blood, or urine
 - e. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen*and*
 if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy.
- 3. Patient ≥ 51 year of age has at least 1 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, stiff neck, meningeal signs, cranial nerve signs, or irritability
and
at least 1 of the following:
 - a. positive CSF examination with increased white cells, elevated protein, and/or decreased glucose
 - b. positive Gram's stain of CSF
 - c. organisms cultured from blood
 - d. positive antigen test of CSF, blood, or urine
 - e. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen*and*
 if diagnosis is made antemortem, physician institutes appropriate antimicrobial therapy.

Reporting instructions

- Report meningitis in the newborn as health care-associated *unless* there is compelling evidence indicating the meningitis was acquired transplacentally.
- Report CSF shunt infection as SSI-MEN if it occurs ≤ 1 year of placement; if later or after manipulation/access of the shunt, report as CNS-MEN.
- Report meningoencephalitis as MEN.
- Report spinal abscess *with* meningitis as MEN.

CARDIOVASCULAR SYSTEM INFECTION

VASC - Arterial or venous infection

Arterial or venous infection must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from arteries or veins removed during a surgical operation *and* blood culture not done or no organisms cultured from blood.
- 2. Patient has evidence of arterial or venous infection seen during a surgical operation or histopathologic examination.
- 3. Patient has at least 1 of the following signs or symptoms with no other recognized cause: fever (>38°C), pain, erythema, or heat at involved vascular site
and
more than 15 colonies cultured from intravascular cannula tip using semiquantitative culture method
and
blood culture not done or no organisms cultured from blood.
- 4. Patient has purulent drainage at involved vascular site
and
blood culture not done or no organisms cultured from blood.
- 5. Patient ≤1 year of age has at least 1 of the following signs or symptoms with no other recognized cause: fever (>38°C rectal), hypothermia (>37°C rectal), apnea, bradycardia, lethargy, or pain, erythema, or heat at involved vascular site
and
more than 15 colonies cultured from intravascular cannula tip using semiquantitative culture method
and
blood culture not done or no organisms cultured from blood.

Reporting instructions

- Report infections of an arteriovenous graft, shunt, or fistula or intravascular cannulation site without organisms cultured from blood as CVS-VASC.
- Report intravascular infections with organisms cultured from the blood as BSI-LCBI.

CARD – Myocarditis or pericarditis

Myocarditis or pericarditis must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from pericardial tissue or fluid obtained by needle aspiration or during a surgical operation.
- 2. Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C), chest pain, paradoxical pulse, or increased heart size
and
at least 1 of the following:
 - a. abnormal EKG consistent with myocarditis or pericarditis
 - b. positive antigen test on blood (eg, *H influenzae*, *S pneumoniae*)
 - c. evidence of myocarditis or pericarditis on histologic examination of heart tissue
 - d. 4-fold rise in type-specific antibody with or without isolation of virus from pharynx or feces
 - e. pericardial effusion identified by echocardiogram, CT scan, MRI, or angiography.
- 3. Patient: 51 year of age has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C rectal), hypothermia <37°C rectal), apnea, bradycardia, paradoxical pulse, or increased heart size
and
at least 1 of the following:
 - a. abnormal EKG consistent with myocarditis or pericarditis
 - b. positive antigen test on blood (eg, *H influenzae*, *S pneumoniae*)
 - c. histologic examination of heart tissue shows evidence of myocarditis or pericarditis
 - d. 4-fold rise in type-specific antibody with or without isolation of virus from pharynx or feces
 - e. pericardial effusion identified by echocardiogram, CT scan, MRI, or angiography.

Comment Most cases of postcardiac surgery or postmyocardial infarction pericarditis are not infectious.

ENDO – Endocarditis

Endocarditis of a natural or prosthetic heart valve must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from valve or vegetation.
- 2. Patient has 2 or more of the following signs or symptoms with no other recognized cause: fever (>38°C rectal), new or changing murmur, embolic phenomena, skin manifestations (ie, petechiae, splinter hemorrhages, painful subcutaneous nodules), congestive heart failure. or cardiac conduction abnormality
and at least 1 of the following:
 - a. organisms cultured from 2 or more blood cultures
 - b. organisms seen on Gram's stain of valve when culture is negative or *not* done
 - c. valvular vegetation seen during a surgical operation or autopsy
 - d. positive antigen test on blood or urine (eg, *H influenzae*, *S pneumoniae*, *N meningitidis*. or Group B *Streptococcus*)
 - e. evidence of new vegetation seen on echocardiogram
 and
if diagnosis is made antemortem physician institutes appropriate antimicrobial therapy.
- 3. Patient ≤1 year of age has 2 or more of the following signs or symptoms with no other recognized cause: fever (>38°C rectal), hypothermia >37°C rectal), apnea, bradycardia, new or changing murmur, embolic phenomena, skin manifestations (ie, petechiae, splinter hemorrhages. painful subcutaneous nodules), congestive heart failure. Or cardiac conduction abnormality
and
at least 1 of the following:
 - a. organisms cultured from 2 or more blood cultures
 - b. organisms seen on Gram's stain of valve when culture is negative or *not* done
 - c. valvular vegetation seen during a surgical operation or autopsy
 - d. positive antigen test on blood or urine (eg, *H influenzae*, *S pneumoniae*, *N meningitidis*. Or Group B *Streptococcus*)
 - e. evidence of new vegetation seen on echocardiogram
 and
if diagnosis is made antemortem. Physician institutes appropriate antimicrobial therapy.

MED-Mediastinitis

Mediastinitis must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from mediastinal tissue or fluid obtained during a surgical operation or needle aspiration.
- 2. Patient has evidence of mediastinitis seen during a surgical operation or histopathologic examination.
- 3. Patient has at least 1 of the following signs or symptoms with no other recognized cause: fever (>38°C), chest pain, or sternal instability
and at least 1 of the following:
 - a. purulent discharge from mediastinal area
 - b. organisms cultured from blood or discharge from mediastinal area
 - c. mediastinal widening on x-ray.
- 4. Patient ≤1 year of age has at least 1 of the following signs or symptoms with no other recognized cause: fever (>38°C rectal), hypothermia <37°C rectal), apnea, bradycardia, or sternal instability
and
at least 1 of the following:
 - a. purulent discharge from mediastinal area
 - b. organisms cultured from blood or discharge from mediastinal area
 - c. mediastinal widening on x-ray.

Reporting instruction

- Report mediastinitis following cardiac surgery that is accompanied by osteomyelitis as SSI-MED rather than SSI-BONE.

EYE, EAR, NOSE, THROAT, OR MOUTH INFECTION

CONJ - Conjunctivitis

Conjunctivitis must meet at least 1 of the following criteria:

- 1. Patient has pathogens cultured from purulent exudate obtained from the conjunctiva or contiguous tissues. such as eyelid, cornea, meibomian glands, or lacrimal glands.
- 2. Patient has pain or redness of conjunctiva or around eye
and
at least 1 of the following:
 - a. WBCs and organisms seen on Gram's stain of exudate
 - b. purulent exudate
 - c. positive antigen test (eg. ELISA or IF for *Chlamydia trachomatis*, herpes simplex virus, adenovirus) on exudate or conjunctival scraping
 - d. multinucleated giant cells seen on microscopic examination of conjunctival exudate or scrapings
 - e. positive viral culture
 - f. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen.

Reporting instructions

- Report other infections of the eye as EYE.
- Do *not* report chemical conjunctivitis caused by silver nitrate (AgNO₃) as a health care-associated infection.
- Do *not* report conjunctivitis that occurs as a part of a more widely disseminated viral illness (such as measles, chickenpox, or a URI).

EYE-Eye, other than conjunctivitis

An infection of the eye, other than conjunctivitis, must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from anterior or posterior chamber or vitreous fluid.
- 2. Patient has at least 2 of the following signs or symptoms with no other recognized cause: eye pain, visual disturbance. or hypopyon
and
at least 1 of the following:
 - a. physician diagnosis of an eye infection
 - b. positive antigen test on blood (eg, *H influenzae*, *S pneumoniae*)
 - c. organisms cultured from blood.

EAR - Ear mastoid

Ear and mastoid infections must meet at least 1 of the following criteria.

Otitis externa must meet at least 1 of the following criteria:

- 1. Patient has pathogens cultured from purulent drainage from ear canal.
- 2. Patient has at least 1 of the following signs or symptoms with no other recognized cause: fever (> 38°C), pain, redness, or drainage from ear canal
and
 organisms seen on Gram's stain of purulent drainage.

Otitis media must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from fluid from middle ear obtained by tympana centesis or at surgical operation.
- 2. Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C), pain in the eardrum, inflammation, retraction or decreased mobility of eardrum, or fluid behind eardrum.

Otitis interna must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from fluid from inner ear obtained at surgical operation.
- 2. Patient has a physician diagnosis of inner ear infection.

Mastoiditis must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from purulent drainage from mastoid.
- 2. Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C), pain, tenderness, erythema, headache or facial paralysis
and
at least 1 of the following:
 - a. organisms seen on Gram's stain of purulent material from mastoid
 - b. positive antigen test on blood.

ORAL - Oral cavity (mouth, tongue, or gums)

Oral cavity infections must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from purulent material from tissues of oral cavity.
- 2. Patient has an abscess or other evidence of oral cavity infection seen on direct examination, during a surgical operation, or during a histopathologic examination.
- 3. Patient has at least 1 of the following signs or symptoms with no other recognized cause: abscess, ulceration, or raised white patches on inflamed mucosa, or plaques on oral mucosa
and
at least 1 of the following:
 - a. organisms seen on Gram's stain
 - b. positive KOH (potassium hydroxide) stain
 - c. multinucleated giant cells seen on microscopic examination of mucosal scrapings
 - d. positive antigen test on oral secretions
 - e. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen
 - f. physician diagnosis of infection and treatment with topical or oral antifungal therapy.

Reporting instruction

- Report health care-associated primary herpes simplex infections of the oral cavity as ORAL; recurrent herpes infections are *not* health care-associated.

SINU - Sinusitis

Sinusitis must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from purulent material obtained from sinus cavity.
- 2. Patient has at least 1 of the following signs or symptoms with no other recognized cause: fever (>38°C). pain or tenderness over the involved sinus, headache, purulent exudate, or nasal obstruction

and

at least 1 of the following:

- positive transillumination
- positive radiographic examination (including CT scan).

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°C), erythema of pharynx, sore throat, cough, hoarseness, 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.

- 2. Patient has an abscess seen on direct examination, during a surgical operation, or during a histopathologic examination.

- 3. Patient ≤1 year of age has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C rectal), hypothermia <37°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.

GASTROINTESTINAL SYSTEM INFECTIONS

GE - Gastroenteritis

Gastroenteritis must meet at least 1 of the following criteria:

- 1. Patient has an acute onset of diarrhea (liquid stools for more than 12 hours) with or without vomiting or fever (> 38°C) and no likely noninfectious cause (eg. diagnostic tests therapeutic regimen other than antimicrobial agents. Acute exacerbation of a chronic condition. or psychological stress).
- 2. Patient has at least 2 of the following signs or symptoms with no other recognized cause: nausea, vomiting, abdominal pain, fever (>38°C), or headache
and
at least 1 of the following:
 - a. an enteric pathogen is cultured from stool or rectal swab
 - b. an enteric pathogen is detected by routine or electron microscopy
 - c. an enteric pathogen is detected by antigen or antibody assay on blood or feces
 - d. evidence of an enteric pathogen is detected by cytopathic changes in tissue culture (toxin assay)
 - e. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen.

GIT- Gastrointestinal tract (esophagus, stomach, small and large bowel, and rectum) excluding gastroenteritis and appendicitis

Gastrointestinal tract infections, excluding gastroenteritis and appendicitis, must meet at least 1 of the following criteria:

- 1. Patient has an abscess or other evidence of infection seen during a surgical operation or histopathologic examination.
- 2. Patient has at least 2 of the following signs or symptoms with no other recognized cause and compatible with infection of the organ or tissue involved: fever (>38°C), nausea, vomiting, abdominal pain, or tenderness
and
at least 1 of the following:
 - organisms cultured from drainage or tissue obtained during a surgical operation or endoscopy or from a surgically placed drain
 - organisms seen on Gram's or KOH stain or multinucleated giant cells seen on microscopic examination of drainage or tissue obtained during a surgical operation or endoscopy or from a surgically placed drain
 - organisms cultured from blood
 - evidence of pathologic findings on radiographic examination
 - evidence of pathologic findings on endoscopic examination (eg. *Candida* esophagitis or procti)

HEP - Hepatitis

Hepatitis must meet the following criterion:

- Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C), anorexia, nausea, vomiting, abdominal pain, jaundice, or history of transfusion within the previous 3 months
and
at least 1 of the following:
 - a. positive antigen or antibody test for hepatitis A, hepatitis B, hepatitis C. or delta hepatitis
 - b. abnormal liver function tests (eg. elevated ALT/AST. bilirubin)
 - c. cytomegalovirus (CMV) detected in urine or oropharyngeal secretions.

Reporting instructions

- Do *not* report hepatitis or jaundice of noninfectious origin (alpha-1 antitrypsin deficiency. etc).
- Do *not* report hepatitis or jaundice that results from exposure to hepatotoxins (alcoholic or acetaminophen-induced hepatitis. etc).
- Do *not* report hepatitis or jaundice that results from biliary obstruction (cholecystitis).

IAB - Intraabdominal, not specified elsewhere including gallbladder, bile ducts, liver (excluding viral hepatitis), spleen, pancreas, peritoneum, subphrenic or subdiaphragmatic space, or other intraabdominal tissue or area not specified elsewhere

Intraabdominal infections must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from purulent material from intraabdominal space obtained during a surgical operation or needle aspiration.
- 2. Patient has abscess or other evidence of intraabdominal infection seen during a surgical operation or histopathologic examination.
- 3. Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (> 38°C), nausea, vomiting, abdominal pain, or jaundice
and
at least 1 of the following:
 - organisms cultured from drainage from surgically placed drain (eg. closed suction drainage system. open drain. T-tube drain)
 - organisms seen on Gram's stain of drainage or tissue obtained during surgical operation or needle aspiration
 - organisms cultured from blood *and* radiographic evidence of infection (eg. Abnormal findings on ultrasound, CT scan. MRI, or radiolabel scans [gallium. technetium, etc] or on abdominal x-ray).

Reporting instruction

- Do *not* report pancreatitis (an inflammatory syndrome characterized by abdominal pain, nausea, and vomiting associated with high serum levels of pancreatic enzymes) unless it is determined to be infectious in origin.

NEC - Necrotizing enterocolitis

Necrotizing enterocolitis in infants must meet the following criterion:

- Infant has at least 2 of the following signs or symptoms with no other recognized cause: vomiting, abdominal distention, or pre feeding residuals
and
persistent microscopic or gross blood in stools
and
at least 1 of the following abdominal radiographic abnormalities:
 - pneumoperitoneum
 - pneumatosis intestinalis
 - unchanging "rigid" loops of small bowel.

LOWER RESPIRATORY TRACT INFECTIONS

BRON - Bronchitis, tracheobronchitis, bronchiolitis, tracheitis, without evidence of pneumonia

Tracheobronchial infections must meet at least 1 of the following criteria:

1. Patient has *no* clinical or radiographic evidence of pneumonia
and
patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C), cough, new or increased sputum production, rhonchi, wheezing
and
at least 1 of the following:
 - a. positive culture obtained by deep tracheal aspirate or bronchoscopy
 - b. positive antigen test on respiratory secretions.
2. Patient ≤ 1 year of age has no clinical or radiographic evidence of pneumonia
and
patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C rectal), cough, new or increased sputum production, rhonchi, wheezing, respiratory distress, apnea, or bradycardia
and
at least 1 of the following:
 - a. organisms cultured from material obtained by deep tracheal aspirate or bronchoscopy
 - b. positive antigen test on respiratory secretions
 - c. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen.

Reporting instruction

- Do *not* report chronic bronchitis in a patient with chronic lung disease as an infection unless there is evidence of an acute secondary infection, manifested by change in organism.

LUNG - Other infections of the lower respiratory tract

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

1. Patient has organisms seen on smear or cultured from lung tissue or fluid. including pleural fluid.
2. Patient has a lung abscess or empyema seen during a surgical operation or histopathologic examination.
3. Patient has an abscess cavity seen on radiographic examination of lung.

Reporting instructions

- Report concurrent lower respiratory tract infection and pneumonia with the same organism(s) as PNEU.
- Report lung abscess or empyema without pneumonia as LUNG.

REPRODUCTIVE TRACT INFECTIONS

EMET - Endometritis

Endometritis must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from fluid or tissue from endometrium obtained during surgical operation, by needle aspiration, or by brush biopsy.
- 2. Patient has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C), abdominal pain, uterine tenderness, or purulent drainage from uterus.

Reporting instruction

- Report postpartum endometritis as a health care-associated infection *unless* the amniotic fluid is infected at the time of admission or the patient was admitted 48 hours after rupture of the membrane.

EPIS - Episiotomy

Episiotomy infections must meet at least 1 of the following criteria:

- 1. Postvaginal delivery patient has purulent drainage from the episiotomy.
- 2. Postvaginal delivery patient has an episiotomy abscess.

Comment

- Episiotomy is not considered an operative procedure in NHSN.

VCUF - Vaginal cuff

Vaginal cuff infections must meet at least 1 of the following criteria:

- 1. Posthysterectomy patient has purulent drainage from the vaginal cuff.
- 2. Posthysterectomy patient has an abscess at the vaginal cuff.
- 3. Posthysterectomy patient has pathogens cultured from fluid or tissue obtained from the vaginal cuff.

Reporting instruction

- Report vaginal cuff infections as SSI-VCUF

OREP - Other infections of the male or female reproductive tract (epididymis, testes, prostate, vagina, ovaries, uterus, or other deep pelvic tissues, excluding endometritis or vaginal cuff infections)

Other infections of the male or female reproductive tract must meet at least 1 of the following criteria:

- 1. Patient has organisms cultured from tissue or fluid from affected site.
- 2. Patient has an abscess or other evidence of infection of affected site seen during a surgical operation or histopathologic examination.
- 3. Patient has 2 of the following signs or symptoms with no other recognized cause: fever (>38°C), nausea, vomiting, pain, tenderness, or dysuria
and
at least 1 of the following:
 - a. organisms cultured from blood
 - b. physician diagnosis.

Reporting instructions

- Report endometritis as EMET.
- Report vaginal cuff infections as VCUF.

SKIN AND SOFT TISSUE INFECTION

SKIN – Skin

Skin infections must meet at least 1 of the following criteria:

- 1. Patient has purulent drainage, pustules, vesicles, or boils.
- 2. Patient has at least 2 of the following signs or symptoms with no other recognized cause: pain or tenderness. localized swelling, redness, or heat
and
at least 1 of the following:
 - a. organisms cultured from aspirate or drainage from affected site; if organisms are normal skin flora (ie, diphtheroids [*Corynebacterium* spp], *Bacillus* [not *B anthracis*] spp, *Propionibacterium* spp, coagulase-negative staphylococci [including *S epidermidis*], viridans group streptococci, *Aerococcus* spp, *Micrococcus* spp), they must be a pure culture
 - b. organisms cultured from blood
 - c. positive antigen test performed on infected tissue or blood (eg. Herpes simplex. Varicella zoster, *H influenzae*, *N meningitidis*)
 - d. multinucleated giant cells seen on microscopic examination of affected tissue
 - e. diagnostic single antibody titer (IgM) or 4-fold increase in paired sera (IgG) for pathogen.

Reporting instructions

- Report omphalitis in infants as UMB.
- Report infections of the circumcision site in newborns as CIRC.
- Report pustules in infants as PUST.
- Report infected decubitus ulcers as DECU.
- Report infected burns as BURN.
- Report breast abscesses or mastitis as BRST.

ST-Soft tissue (necrotizing fasciitis, 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 a surgical operation 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 antigen test performed on blood or urine (eg, *H influenzae*, *S pneumoniae*, *N meningitidis*, Group B *Streptococcus*, *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.

DECU - Decubitus ulcer, including both superficial and deep infections

Decubitus ulcer infections must meet the following criterion:

- Patient has at least 2 of the following signs or symptoms with no other recognized cause: redness, tenderness, or swelling of decubitus wound edges
and
at least 1 of the following:
- a. organisms cultured from properly collected fluid or tissue (see Comments)
 - b. organisms cultured from blood.

Comments

- Purulent drainage alone is *not* sufficient evidence of an infection.
- Organisms cultured from the surface of a decubitus ulcer are *not* sufficient evidence that the ulcer is infected. A properly collected specimen from a decubitus ulcer involves needle aspiration of fluid or biopsy of tissue from the ulcer margin.

BURN - Burn

Burn infections must meet at least 1 of the following criteria:

1. Patient has a change in burn wound appearance or character, such as rapid eschar separation, or dark brown, black, or violaceous discoloration of the eschar, or edema at wound margin
and
histologic examination of burn biopsy shows invasion of organisms into adjacent viable tissue.
2. Patient has a change in burn wound appearance or character. such as rapid eschar separation, or dark brown, black, or violaceous discoloration of the eschar, or edema at wound margin
and
at least 1 of the following:
- a. organisms cultured from blood in the absence of other identifiable infection
 - b. isolation of herpes simplex virus, histologic identification of inclusions by light or electron microscopy, or visualization of viral particles by electron microscopy in biopsies or lesion scrapings.
3. Patient with a burn has at least 2 of the following signs or symptoms with no other recognized cause: fever (>38°C) or hypothermia <36°C), hypotension, oliguria <20 cc/hr), hyperglycemia at previously tolerated level of dietary carbohydrate, or mental confusion
and
at least 1 of the following:
- a. histologic examination of burn biopsy shows invasion of organisms into adjacent viable tissue
 - b. organisms cultured from blood
 - c. isolation of herpes simplex virus, histologic identification of inclusions by light or electron microscopy, or visualization of viral particles by electron microscopy in biopsies or lesion scrapings.

Comments

Purulence alone at the burn wound site is *not* adequate for the diagnosis of burn infection; such purulence may reflect incomplete wound care.

Fever alone in a burn patient is *not* adequate for the diagnosis of a burn infection because fever may be the result of tissue trauma or the patient may have an infection at another site.

Surgeons in Regional Burn Centers who take care of burn patients exclusively may require Criterion 1 for diagnosis of burn infection.

Hospitals with Regional Burn Centers may further divide burn infections into the following: burn wound site, burn graft site, burn donor site, burn donor site-cadaver: NHSN however, will code all of these as BURN.

BRST - Breast abscess or mastitis

A breast abscess or mastitis must meet at least 1 of the following criteria:

- 1. Patient has a positive culture of affected breast tissue or fluid obtained by incision and drainage or needle aspiration.
- 2. Patient has a breast abscess or other evidence of infection seen during a surgical operation or histopathologic examination.
- 3. Patient has fever (>38°C) and local inflammation of the breast
and
physician diagnosis of breast abscess.

Comment

- Breast abscesses occur most frequently after childbirth. Those that occur within 7 days after childbirth should be considered health care-associated

UMB - Omphalitis

Omphalitis in a newborn (≤30 days old) must meet at least 1 of the following criteria:

- 1. Patient has erythema and/or serous drainage from umbilicus
and
at least 1 of the following:
 - a. organisms cultured from drainage or needle aspirate
 - b. organisms cultured from blood.
- 2. Patient has both erythema and purulence at the umbilicus.

Reporting instructions

- Report infection of the umbilical artery or vein related to umbilical catheterization as VASC if there is no accompanying blood culture or a blood culture is negative.
- Report as health care associated if infection occurs in a newborn within 7 days of hospital discharge.

PUST - Infant pustulosis

Pustulosis in an infant (≤1 year old) must meet at least 1 of the following criteria:

- 1. Infant has 1 or more pustules
and
physician diagnosis of skin infection.
- 2. Infant has 1 or more pustules
and
physician institutes appropriate antimicrobial therapy.

Reporting instructions

- Do *not* report erythema toxicum and noninfectious causes of pustulosis.
- Report as health care associated if pustulosis occurs in an infant within 7 days of hospital discharge.

CIRC - Newborn circumcision

Circumcision infection in a newborn (≤ 30 days old) must meet at least 1 of the following criteria:

- 1. Newborn has purulent drainage from circumcision site.
- 2. Newborn has at least 1 of the following signs or symptoms with no other recognized cause at circumcision site:
 - erythema, swelling, or tenderness
 - and
 - pathogen cultured from circumcision site.
- 3. Newborn has at least 1 of the following signs or symptoms with no other recognized cause at circumcision site:
 - erythema, swelling, or tenderness
 - and
 - skin contaminant (ie. diphtheroids [*Corynebacterium* spp], *Bacillus* [not *B anthracis*] spp. *Propionibacterium* spp, coagulase-negative staphylococci [including *S epidermidis*], viridans group streptococci, *Aerococcus* spp, *Micrococcus* spp) is cultured from circumcision site
 - and
 - physician diagnosis of infection or physician institutes appropriate therapy.

SYSTEMIC INFECTION

DI ~ Disseminated infection

- Disseminated infection is infection involving multiple organs or systems, without an apparent single site of infection, usually of viral origin, and with signs or symptoms with no other recognized cause and compatible with infectious involvement of multiple organs or systems.

Reporting instructions

- Use this code for viral infections involving multiple organ systems (eg. measles, mumps, rubella, varicella, erythema infectiosum). These infections often can be identified by clinical criteria alone. Do *not* use this code for health care-associated