

In the name of GOD



TEHRAN UNIVERSITY  
OF  
MEDICAL SCIENCES

# HAI Definitions

## CDC/NHSN 2023 - minor

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# Topics

- **HAI**s Definitions: CDC/NHSN 2023
  - **PJI** – Periprosthetic Joint Infection
  - **VASC** – Arterial or venous infection
  - **CDI** – Clostridioides difficile Infection
  - **LUNG** – Other infection of the lower respiratory tract
  - **BURN** – Burn infection
  - **DECU** – Decubitus ulcer infection
  - **ST** – Soft tissue infection



# Healthcare-associated Infections (HAIs)

## Minor Infections Case Definitions



January 2023

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**CDC/NHSN Surveillance Definitions for Specific Types of Infections**

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# Classification

- **Minor Group:**
  - Bone and Joint Infection (**BJI**)
  - Cardiovascular (**CVS**) System Infection
  - Central Nervous System (**CNS**)
  - Eye, Ear, Nose Throat, or Mouth (**EENT**)
  - Gastrointestinal System Infection (**GI**)
  - Lower Respiratory Infection (**LRI**)
  - Reproductive Tract Infection (**REPR**)
  - Skin and Soft Tissue (**SST**) Infection

## **BJ – Bone and Joint Infection**

- **BONE** – Osteomyelitis
- **DISC** – Disc space infection
- **JNT** – Joint or bursa infection
- **PJI** – **Periprosthetic Joint Infection**  
(for use as Organ/Space SSI following HPRO and KPRO only)

# CNS – Central Nervous System

- **IC** – Intracranial infection  
(brain abscess, subdural or epidural infection, encephalitis)
- **MEN** – Meningitis or ventriculitis
- **SA** – Spinal abscess/infection  
(spinal abscess, spinal subdural or epidural infection)

# CVS – Cardiovascular System Infection

- **CARD** – Myocarditis or pericarditis
- **ENDO** – Endocarditis
- **MED** – Mediastinitis
- **VASC** – Arterial or venous infection

excluding infections involving vascular access devices with organisms identified in the blood

# **EENT – Eye, Ear, Nose, Throat, or Mouth Infection**

- **CONJ** – Conjunctivitis
- **EAR** – Ear, mastoid infection
- **EYE** – Eye infection, other than conjunctivitis
- **ORAL** – Oral cavity infection (mouth, tongue, or gums)
- **SINU** – Sinusitis
- **UR** – Upper respiratory tract infection, pharyngitis, laryngitis, epiglottitis



# GI – Gastrointestinal System Infection

- **CDI** – Clostridioides difficile Infection
- **GE** – Gastroenteritis (excluding C. difficile infections)
- **GIT** – Gastrointestinal tract infection  
(esophagus, stomach, small and large bowel, and rectum)  
excluding gastroenteritis, appendicitis, and C. difficile
- **IAB** – Intraabdominal infection, not specified elsewhere,  
including gallbladder, bile ducts, liver (excluding viral hepatitis), spleen, pancreas, peritoneum, retroperitoneal, subphrenic or subdiaphragmatic space, ...
- **NEC** – Necrotizing enterocolitis



## LRI – Lower Respiratory System Infection, Other Than Pneumonia

- **LUNG** – Other infection of the lower respiratory tract and pleural cavity

# REPR – Reproductive Tract Infection

- **EMET** – Endometritis
- **EPIS** – Episiotomy infection
- **OREP** – Deep pelvic tissue infection or other infection of the male or female reproductive tract (for example, epididymis, testes, prostate, vagina, ovaries, uterus) including chorioamnionitis, but excluding vaginitis, endometritis or vaginal cuff infections
- **VCUF** – Vaginal cuff infection

# SST-Skin and Soft Tissue Infection

- **BRST** – Breast infection or mastitis
- **BURN** – Burn infection
- **CIRC**– Newborn circumcision infection
- **DECU** – Decubitus ulcer infection (pressure injury infection), including both superficial and deep infections
- **SKIN** – Skin infection (skin and /or subcutaneous) excluding decubitus ulcers, burns, and at vascular access sites
- **ST** – Soft tissue infection (muscle and/or fascia [necrotizing fasciitis, infectious gangrene, cellulitis, lymphadenitis, or parotitis])
- **UMB** – Omphalitis

# USI – Urinary System Infection

- **USI** – Urinary System Infection (kidney, ureter, bladder, urethra, or perinephric space **excluding UTI**)

# Matching Organisms


Examples for Determining Matching Organisms (correct selection for NHSN reporting is bolded)

Identification # 1	Identification # 2	Matching Organisms Yes or No
<i>Bacteroides vulgatus</i>	<i>Bacteroides fragilis</i>	No
<b><i>Enterococcus faecalis</i></b>	<i>Enterococcus</i>	Yes
<i>Enterococcus faecium</i>	<i>Enterococcus faecalis</i>	No
<i>Pseudomonas</i> species	<b><i>Pseudomonas aeruginosa</i></b>	Yes
Coagulase-negative Staphylococcus	<i>Staphylococcus aureus</i>	No
<b><i>Staphylococcus epidermidis</i></b>	Coagulase-negative Staphylococcus	Yes
<i>Staphylococcus</i> species	Coagulase-positive Staphylococcus	No
<i>Streptococcus</i> species	<i>Streptococcus</i> Viridans Group	No
Yeast	<b><i>Candida</i></b> species	Yes

# PJI – Periprosthetic Joint Infection

Joint or bursa infections must meet at least **one** of the following criteria:

1. **Two** positive periprosthetic specimens (*tissue or fluid*) with at least one matching organism, identified by culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis and treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).
2. A sinus tract\* communicating with the joint identified on gross anatomic exam.
3. Having **three** of the following minor criteria:
  - a. elevated serum C-reactive protein (CRP; >100 mg/L) **and** erythrocyte sedimentation rate (ESR; >30 mm/hr.)
  - b. elevated synovial fluid white blood cell (WBC; >10,000 cells/ $\mu$ L) count **OR** “++” (*or greater*) change on leukocyte esterase test strip of synovial fluid.
  - c. elevated synovial fluid polymorphonuclear neutrophil percentage (PMN% >90%)
  - d. positive histological analysis of periprosthetic tissue (>5 neutrophils (PMNs) per high power field).
  - e. organism(s) identified from a single positive periprosthetic specimen (*tissue or fluid*) by culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis and treatment, for example, not Active Surveillance Culture/Testing (ASC/AST).



## Reporting Instruction

- After an HPRO or a KPRO if a patient meets both organ space PJI and BONE report the SSI as BONE.

# VASC-Arterial or venous infection

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

1. Patient has organism(s) from extracted arteries or veins identified 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).
2. Patient has evidence of arterial or venous infection on gross anatomic or histopathologic exam.
3. Patient has at least one of the following signs or symptoms: fever ( $>38.0^{\circ}\text{C}$ ), pain\*, erythema\*, or heat at involved vascular site\*


**AND**

More than 15 colonies cultured from intravascular cannula tip using semi-quantitative culture method.

4. Patient has purulent drainage at involved vascular site.
5. Patient  $\leq 1$  year of age has at least one of the following signs or symptoms: fever ( $>38.0^{\circ}\text{C}$ ), hypothermia ( $<36.0^{\circ}\text{C}$ ), apnea\*, bradycardia\*, lethargy\*, pain\*, erythema\*, or heat at involved vascular site\*

**AND**

More than 15 colonies cultured from intravascular cannula tip using semi-quantitative culture method.



Note: If a patient meets the criteria for an LCBI in the presence of an arterial or vascular infection (VASC) report as an LCBI not as a VASC. \*\*



# CDI- Clostridioides difficile Infection

*Clostridioides difficile* infection must meet at least **one** of the following criteria:

1. Positive test for toxin-producing *C. difficile* on an unformed stool specimen (conforms to the shape of the container).
2. Patient has evidence of pseudomembranous colitis on gross anatomic (includes endoscopic exams) or histopathologic exam.


## Reporting Instructions

- Report the CDI and the GE or GIT if additional enteric organism(s) are identified and criteria are met for GE or GIT.

# LUNG-Other infection of lower respiratory and pleural Cavity

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

1. Patient has organism(s) seen on Gram stain of lung tissue or pleural fluid or identified from lung tissue or pleural fluid (when pleural fluid was obtained during thoracentesis or within 24 hours of chest tube placement 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).
2. Patient has a lung abscess or other evidence of infection (for example, empyema) on gross anatomic or histopathologic exam.
3. Patient has imaging test evidence of abscess or infection (excludes imaging test evidence of pneumonia) which if equivocal is supported by clinical correlation, specifically, physician documentation of antimicrobial treatment for lung infection).



## Reporting Instruction

- If patient meets LUNG and PNEU report as PNEU only, unless the LUNG is a surgical site organ/space infection, in which case, report both PNEU and SSI-LUNG.

# BURN-Burn infection

Burn infections must meet 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,  
**AND**  
Organism(s) identified from blood 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).

# DECU-Decubitus ulcer infection

Decubitus ulcer infections must meet the following criterion:

1. Patient has at least **two** of the following signs or symptoms: erythema\*, tenderness\*, or swelling of decubitus wound edges\*,

**AND**


Organism(s) identified from needle aspiration of fluid or biopsy of tissue from ulcer margin 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).

## ST-Soft tissue infection

ST-Soft tissue infection (muscle and/or fascia [for example, necrotizing fasciitis, infectious gangrene, necrotizing cellulitis, infectious myositis, lymphadenitis, lymphangitis, or parotitis]) excluding decubitus ulcers, burns, and infections at vascular access sites (See [VASC](#)).

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

1. Patient has organism(s) identified from tissue or drainage from affected site 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)
2. Patient has purulent drainage at affected site.
3. Patient has an abscess or other evidence of infection on gross anatomic or histopathologic exam

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- Apply the site-specific definitions identified below (not ST) for the following:
    - Report infected decubitus ulcers as DECU.
    - Report infected burns as BURN.
    - Report BURN in the setting of an infected burn covered with a temporary graft or dressing.
    - Report infection of deep pelvic tissues as OREP.
    - Report localized infection at a vascular access site as a VASC unless there is an organism identified from blood, then it should be reported as an LCBI (see [VASC](#) definition).

**Thanks for your attention**

