Chapter
4

List of Reportable Infections

Infections to be reported through PA-PSRS

The Centers for Disease Control and Prevention (CDC) definitions for healthcare-associated infections (HAIs) were developed for hospitals and are generally not applicable to nursing homes.

In 1991, McGeer et al. developed a set of definitions for determining HAIs in long-term care. These definitions have been revised in PA-PSRS as a result of updated McGeer criteria published in 2012. The criteria were originally developed and updated by modifying the CDC definitions and taking into consideration the difference in population, services, and resources.

The criteria set forth below have been developed in accordance with the requirements of Act 52, using the updated McGeer criteria and further modification of the CDC-based criteria.

Defining Infections in the Elderly

Key points

- An HAI is a localized or systemic condition that was not present or incubating upon admission to a facility.
- All signs and symptoms of an infection must be acute, new, or rapidly worsening.
- Noninfectious causes should always be considered before defining an infection.
- To standardize terminology and assessment criteria, the definitions for constitutional criteria such as fever, leukocytosis, acute change in mental status, acute functional decline, norovirus, and confusion are listed below:

Fever

- Single oral temperature >37.8°C (>100°F)

  OR
- Repeated oral temperatures >37.2°C (99°F) or rectal temperatures >37.5°C (99.5°F)

  OR
- Single temperature >1.1°C (2°F) over baseline from any site (oral, tympanic, axillary)

Leukocytosis

- Neutrophilia (>14,000 leukocytes/mm^3)

  OR
- Left shift (>6% bands or ≥1,500 bands/mm^3)

Acute change in mental status from baseline (all criteria must be present)

- Acute onset
- Fluctuating course
- Inattention
  AND
- Either disorganized thinking or altered level of consciousness

Acute functional decline

A new 3-point increase in total activities of daily living (ADL) score (range 0 to 28) from baseline, based on the following 7 ADL items, each scored from 0 (independent) to 4 (total dependence):

- Bed mobility
- Transfer
- Locomotion within long-term care facility
- Dressing
- Toilet use
- Personal hygiene
- Eating

Kaplan criteria for use in norovirus identification

- Vomiting in more than half of affected persons
- Mean (or median) incubation period of 24 to 48 hours
- Mean (or median) duration of illness of 12 to 60 hours
  AND
- No bacterial pathogen identified in stool culture

Confusion Assessment Method criteria

- Fluctuating—Behavior fluctuating (e.g., coming and going or changing in severity during the assessment)
- Inattention—Resident has difficulty focusing attention (e.g., unable to keep track of discussion, easily distracted)
- Disorganized thinking—Resident's thinking is incoherent (e.g., rambling conversation, unclear flow of ideas, unpredictable switches in subject)
- Altered level of consciousness—Resident's level of consciousness is described as different from baseline (e.g., hyper-alert, sleepy, drowsy, difficult to arouse, nonresponsive)

Surveillance Criteria

An asterisk (*) indicates that the reader should refer to definition listed above under "Defining Infections in the Elderly."

A. Urinary tract infection

1. Asymptomatic bacteremic urinary tract infection—ABUTI

Both criteria 1 and 2 must be present.

Criteria 1: Any of the following:

- A voided urine with ≥10^5 CFU/mL of no more than two species of microorganisms
- Positive culture with ≥10^2 CFU/mL of any microorganisms from straight in/out catheter specimen

- Positive culture with ≥10^5 CFU/mL of any microorganisms from indwelling catheter specimen

Criteria 2:
- Positive blood culture with one matching organism in urine culture

Note:
- Yeast and other microorganisms other than bacteria are not acceptable UTI pathogens.
- Urine culture results are acceptable criteria only if there is at least one qualifying bacteria.

2. Catheter-associated urinary tract infection—CAUTI

Both criteria 1 and 2 must be present.

Criteria 1: At least one of the following:
- Rigors, new onset hypotension or fever,* with no alternate site of infection
- New onset confusion* or functional decline,* with no alternate site of infection and leukocytosis* (>14,000 cells/mm^3) or left shift (>6% or 1,500 bands/mm^3)
- Purulent drainage at the catheter site or acute pain, swelling, or tenderness of the testes, epididymis, or prostate

Criteria 2:
- Urinary catheter specimen with at least 10^5 CFU/mL of any organisms

Note:
- Fever can be used to meet CAUTI critaria even if the resident has another possible cause for the fever (e.g.Pneumonia).
- Yeast and other microorganisms other than bacteria are not acceptable UTI pathogens.
- Urine culture results are acceptable criteria only if there is at least one qualifying bacteria.

3. Symptomatic urinary tract infection—SUTI

Both criteria 1 and 2 must be present

Criteria 1: At least one of the following signs or symptoms:
- Acute dysuria, acute pain, or swelling or tenderness of the testes, epididymis, or prostate
- Fever* or leukocytosis* and at least one of the following:
    - Acute costovertebral angle pain or tenderness
    - Gross hematuria
    - Suprapubic pain
    - New or marked increase in incontinence
    - New or marked increase in urgency
    - New or marked increase in frequency

Criteria 1a: In the absence of criteria 1 infection signs or symptoms, then two or more of the following localizing urinary tract signs or symptoms:
- Gross hematuria
- New or marked increase in incontinence
- New or marked increase in urgency
- New or marked increase in frequency

Criteria 2: One of the following:

- A voided urine with at least 10^5 CFU/mL of no more than two species of microorganisms
- Positive culture with at least 10^2 CFU/mL of any microorganisms from straight in/out catheter specimen

Note:

- Fever can be used to meet CAUTI critaria even if the resident has another possible cause for the fever (e.g.Pneumonia).
- Yeast and other microorganisms other than bacteria are not acceptable UTI pathogens.
- Urine culture results are acceptable criteria only if there is at least one qualifying bacteria.
- A urinary catheter is defined as an indwelling device inserted into the bladder through the urethra, left in place, and connected to a closed collection system. Indwelling catheters do NOT include straight in and out catheters or other catheters that are not placed in the urethra (such as suprapubic catheters).
- Urinary catheter specimens for culture should be collected following replacement of any catheter that has been in place for more than 14 days, refrigerated and cultured within 24 hours.

B. Respiratory Tract Infection

1. Lower respiratory tract infection—LRTI

Criteria 1, 2, and 3 must be present.

Criteria 1:

- Chest radiograph not performed or negative results for pneumonia or new infiltrate

Criteria 2: At least two of the following:

- Respiratory rate of equal to or greater than 25 breaths per minute taken manually for a full minute
- Pleuritic chest pain
- New or changed lung examination abnormalities
- New or increased sputum production
- New or increased wet cough
- Oxygen saturation <94% on room air or a reduction in oxygen saturation of >3% from baseline

Criteria 3: At least one of the following:

- Leukocytosis* or left shift
- Fever*
- Acute change in mental status from baseline*
- Acute functional decline*

2. Influenza-like illness—ILI

Criteria 1 and 2 must be present.

Criteria 1:

- Fever*

Criteria 2: At least three of the following:

- Chills
- New headache or eye pain

- Myalgias or body aches
- Malaise or loss of appetite
- Sore throat
- New or increased dry cough

Note:
- Symptoms must be new and not attributable to allergies.
- If the resident tests positive for influenza, the system will flag as influenza. If negative and the criteria is met, the system will flag as ILIs.
- If criteria for ILIs and LRTIs are met at the same time, only the diagnosis of ILI should be recorded due to uncertainty surrounding determining influenza seasonality.

3. Pneumonia—PNU

Criteria 1, 2, and 3 must be present.

Criteria 1:
- Interpretation of a chest radiograph positive for pneumonia or a new infiltrate

Criteria 2: At least one of the following:
- Respiratory rate of equal to or greater than 25 breaths per minute taken manually for a full minute
- Pleuritic chest pain
- New or changed lung examination abnormalities
- New or increased sputum production
- New or increased wet cough
- Oxygen saturation <94% on room air or a reduction in oxygen saturation of >3% from baseline

Criteria 3: At least one of the following:
- Fever*
- Leukocytosis* or left shift
- Acute change in mental status from baseline*
- Acute functional decline*

Note:
- Underlying conditions such as congestive heart failure of interstitial lung disease could mimic the presentation of pneumonia and LRTI and should be excluded by a review of clinical records and an assessment of presenting signs and symptoms.

C. Gastrointestinal infection

1. *Clostridium difficile (C. difficile*) infection—CDI

Criteria 1 and 2 must be present.

Criteria 1: One of the following:
- A stool sample positive for *C. difficile* toxin A or B
- A toxin-producing *C. difficile* organism identified from stool culture or by molecular testing
- Pseudomembranous colitis identified through endoscopic examination, surgery or biopsy

Criteria 2: One of the following:
- Diarrhea in the absence of vomiting
- A positive radiologic test for toxic megacolon

Note:
- Primary CDI occurs without any previous history of CDI or more than eight weeks after the onset of a previous episode of CDI.
- Recurrent CDI occurs eight weeks or sooner after the onset of a previous episode, provided that the symptoms from the previous episode have resolved.
- Residents previously infected with C. difficile may continue to remain colonized even after symptoms resolve.
- In the setting of an outbreak of GI infection, individuals could have positive test results for presence of *C. difficile* toxin because of ongoing colonization and also be co-infected with another pathogen.

2. Norovirus—NV

Criteria 1:
- Diarrhea and/or vomiting and negative *C. difficile* results
  and
- A stool sample positive for norovirus

Criteria 2:
- Diarrhea and/or vomiting and negative *C. difficile* results
- and Presence of all four Kaplan criteria* in the absence of laboratory confirmation

Note:
- An outbreak (two or more cases of acute gastroenteritis) may be assumed to be present if all the Kaplan criteria* are present.
- Diarrhea: 3 or more liquid or watery stools above what is normal for the resident within a 24 hour period
- Vomiting: 2 or more episodes within a 24 hour period

3. Bacterial gastroenteritis—GI

Criteria 1 and 2 must be present.

Criteria 1:
- Diarrhea and/or vomiting and negative *C. difficile* results

Criteria 2:
- Stool sample positive for a bacteriologic pathogen

- And at least one of the following:
  - Nausea
  - Vomiting
  - Abdominal pain or tenderness
  - Diarrhea

Note:
- Exclude noninfectious causes of symptoms such as new medications, dietary allergies, or enteral feeding process.

D. Skin and soft-tissue infection (SSTI)

1. Cellulitis, soft-tissue, or wound infection—SSTI

The following must be present:

- Pus present at a wound, skin, or soft-tissue site

  Or
- New or increasing presence of at least four of the following:
  - Heat at the affected site
  - Redness at the affected site
  - Swelling at the affected site
  - Tenderness or pain at the affected site
  - Serious drainage at the affected site
  - One of the following: fever,* leukocytosis,* left shift, acute change in mental status,* or acute functional decline*

Note:

- Organisms cultured from a superficial surface swab sample are not sufficient evidence that a wound is infected.
- Wound infections related to surgical procedures that meet the CDC National Healthcare Safety Network (NHSN) surgical site Infection criteria should be reported back to the institution where the procedure was performed.

2. Conjunctivitis—CONJ

At least one of the following must be present:

- Pus appearing from one or both eyes, present for at least 24 hours
- New or increased conjunctival erythema, with or without itching
- New or increased conjunctival pain, persistent for at least 24 hours

Note:

- Rule out allergic reactions or trauma

3. Scabies—SCABIES

Both criteria 1 and 2 must be present.

Criteria 1.

- A maculopapular and/or itching rash

Criteria 2. At least one of the following:

- Physician diagnosis
- Laboratory confirmation by means of scraping or biopsy
- Epidemiologic linkage to a case of scabies with laboratory confirmation

Note:

- Rule out rashes due to skin irritation, allergic reactions, eczema, psoriasis, and other noninfectious skin conditions.
- Consider an epidemiologic linkage to a case if there is evidence of a common source of exposure.

E. Device-related bloodstream infection

1. **Dialysis-catheter-related BSI** (any tunneled, nontunneled, implanted or Nonimplanted centrally placed catheter used for hemodialysis)—**CLABSI-HD**
   One of the following criteria must be met:

   Criteria 1.
   - Patient 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.

   Criteria 2. Patient has at least one of the following:
   - Fever*
   - Chills
   - Hypotension
     and
   - Organism cultured from blood is not related to an infection at another site.
     and
   - A common commensal is cultured from two or more blood cultures drawn on separate occasions.

2. **Central-line-associated BSI temporary** (a centrally placed nontunneled or implanted catheter)—**CLABSI-T**
   One of the following criteria must be met:

   Criteria 1:
   - Patient 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.

   Criteria 2: Patient has at least one of the following:
   - Fever*
   - Chills
   - Hypotension
     and
   - Organism cultured from blood is not related to an infection at another site.
     and
   - A common commensal is cultured from two or more blood cultures drawn on separate occasions.

3. **Central-line-associated BSI permanent** (a centrally placed tunneled catheter or implanted catheter, including accessed ports)—**CLABSI-P**
   One of the following criteria must be met:

   Criteria 1.
   - Patient 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.

   Criteria 2. Patient has at least one of the following:
   - Fever*
   - Chills
   - Hypotension
     and
   - Organism cultured from blood is not related to an infection at another site.

and

- A common commensal is cultured from two or more blood cultures drawn on separate occasions.

Note:

- A central line is an intravascular catheter that terminates at or close to the heart or in one of the great vessels that is used for infusion, withdrawal of blood, or hemodynamic monitoring.
- A bloodstream infection occurring together with an infection at another site is considered a *secondary* bloodstream infection and must not be reported. Only the primary infection (UTI or LRTI) must be reported.
- The following are considered great vessels for the purpose of reporting central-line BSI and counting central-line-days:
    - Aorta
    - Pulmonary artery
    - Superior vena cava
    - Inferior vena cava
    - Brachiocephalic veins
    - Internal jugular veins
    - Subclavian veins
    - External iliac veins
    - Common iliac veins
    - Femoral veins