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TABLE 1. Considerations for Inclusion of Infections in Long-Term Care Facilities (LTCFs) into Facility Infection Surveillance Programs

Points to consider	Infections	Comments
A. Infections that should be included in routine surveillance		
1. Evidence of transmissibility in a healthcare setting	Viral respiratory tract infections, viral gastroenteritis, and viral conjunctivitis	Associated with outbreaks among residents and healthcare personnel in LTCFs.
2. Processes available to prevent acquisition of infection		
3. Clinically significant cause of morbidity or mortality	Pneumonia, urinary tract infection, gastrointestinal tract infections including *Clostridium difficile*, and skin and soft tissue infections	Associated with hospitalization and functional decline in LTCF residents.
4. Specific pathogens causing serious outbreaks	Any invasive group A *Streptococcus* infection, acute viral hepatitis, norovirus, scabies, influenza	A single laboratory-confirmed case should prompt further investigation.
B. Infections that could be considered in surveillance		
1. Infections with limited transmissibility in a healthcare setting	Ear and sinus infections, fungal oral and skin infections, and herpetic skin infections	Associated with underlying comorbid conditions and reactivation of endogenous infection.
2. Infections with limited preventability		
C. Infections for which other accepted definitions should be applied in LTCF surveillance (may apply to only specific at-risk residents)	Surgical site infections, central-line-associated bloodstream infections, and ventilator-associated pneumonia	LTCF-specific definitions were not developed. Refer to the National Healthcare Safety Network's criteria (http://www.cdc.gov/nhsn/TOC_PSCManual.html).

TABLE 2. Definitions for Constitutional Criteria in Residents of Long-Term Care Facilities (LTCFs)

A. Fever
1. Single oral temperature >37.8°C (>100°F)
OR
2. Repeated oral temperatures >37.2°C (99°F) or rectal temperatures >37.5°C (99.5°F)
OR
3. Single temperature >1.1°C (2°F) over baseline from any site (oral, tympanic, axillary)

B. Leukocytosis
1. Neutrophilia (>14,000 leukocytes/mm^3)
OR
2. Left shift (>6% bands or ≥1,500 bands/mm^3)

C. Acute change in mental status from baseline (all criteria must be present; see Table 3)
1. Acute onset
2. Fluctuating course
3. Inattention
AND
4. Either disorganized thinking or altered level of consciousness

D. Acute functional decline
1. A new 3-point increase in total activities of daily living (ADL) score (range, 0–28) from baseline, based on the following 7 ADL items, each scored from 0 (independent) to 4 (total dependence)[14]
a. Bed mobility
b. Transfer
c. Locomotion within LTCF
d. Dressing
e. Toilet use
f. Personal hygiene
g. Eating

TABLE 3. Confusion Assessment Method Criteria

Acute onset	Evidence of acute change in resident's mental status from baseline
Fluctuating	Behavior fluctuating (eg, coming and going or changing in severity during the assessment)
Inattention	Resident has difficulty focusing attention (eg, unable to keep track of discussion or easily distracted)
Disorganized thinking	Resident's thinking is incoherent (eg, 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 (eg, hyperalert, sleepy, drowsy, difficult to arouse, nonresponsive)

NOTE. Criteria are adapted from a study by Lim and MacFarlane.[13]

TABLE 4. Surveillance Definitions for Respiratory Tract Infections (RTIs)

Criteria	Comments
A. Common cold syndrome or pharyngitis (at least 2 criteria must be present)	Fever may or may not be present. Symptoms must be new and not attributable to allergies.
1. Runny nose or sneezing	
2. Stuffy nose (ie, congestion)	
3. Sore throat or hoarseness or difficulty in swallowing	
4. Dry cough	
5. Swollen or tender glands in the neck (cervical lymphadenopathy)	
B. Influenza-like illness (both criteria 1 and 2 must be present)	If criteria for influenza-like illness and another upper or lower RTI are met at the same time, only the diagnosis of influenza-like illness should be recorded. Because of increasing uncertainty surrounding the timing of the start of influenza season, the peak of influenza activity, and the length of the season, "seasonality" is no longer a criterion to define influenza-like illness.
1. Fever	
2. At least 3 of the following influenza-like illness subcriteria	
a. Chills	
b. New headache or eye pain	
c. Myalgias or body aches	
d. Malaise or loss of appetite	
e. Sore throat	
f. New or increased dry cough	
C. Pneumonia (all 3 criteria must be present)	For both pneumonia and lower RTI, the presence of underlying conditions that could mimic the presentation of a RTI (eg, congestive heart failure or interstitial lung diseases) should be excluded by a review of clinical records and an assessment of presenting symptoms and signs.
1. Interpretation of a chest radiograph as demonstrating pneumonia or the presence of a new infiltrate	
2. At least 1 of the following respiratory subcriteria	
a. New or increased cough	
b. New or increased sputum production	
c. O_2 saturation <94% on room air or a reduction in O_2 saturation of >3% from baseline	
d. New or changed lung examination abnormalities	
e. Pleuritic chest pain	
f. Respiratory rate of ≥25 breaths/min	
3. At least 1 of the constitutional criteria (see Table 2)	
D. Lower respiratory tract (bronchitis or tracheobronchitis; all 3 criteria must be present)	(See comment for section C above.)
1. Chest radiograph not performed or negative results for pneumonia or new infiltrate	
2. At least 2 of the respiratory subcriteria (a–f) listed in section C above	
3. At least 1 of the constitutional criteria (see Table 2)	

TABLE 5. Surveillance Definitions for Urinary Tract Infections (UTIs)

Criteria	Comments
A. For residents without an indwelling catheter (both criteria 1 and 2 must be present)	UTI should be diagnosed when there are localizing genitourinary signs and symptoms and a positive urine culture result. A diagnosis of UTI can be made without localizing symptoms if a blood culture isolate is the same as the organism isolated from the urine and there is no alternate site of infection. In the absence of a clear alternate source of infection, fever or rigors with a positive urine culture result in the noncatheterized resident or acute confusion in the catheterized resident will often be treated as UTI. However, evidence suggests that most of these episodes are likely not due to infection of a urinary source.
1. At least 1 of the following sign or symptom subcriteria	
a. Acute dysuria or acute pain, swelling, or tenderness of the testes, epididymis, or prostate	
b. Fever or leukocytosis (see Table 2) and at least 1 of the following localizing urinary tract subcriteria	
i. Acute costovertebral angle pain or tenderness	
ii. Suprapubic pain	
iii. Gross hematuria	
iv. New or marked increase in incontinence	
v. New or marked increase in urgency	
vi. New or marked increase in frequency	
c. In the absence of fever or leukocytosis, then 2 or more of the following localizing urinary tract subcriteria	
i. Suprapubic pain	
ii. Gross hematuria	
iii. New or marked increase in incontinence	
iv. New or marked increase in urgency	
v. New or marked increase in frequency	
2. One of the following microbiologic subcriteria	Urine specimens for culture should be processed as soon as possible, preferably within 1–2 h. If urine specimens cannot be processed within 30 min of collection, they should be refrigerated. Refrigerated specimens should be cultured within 24 h.
a. At least 10^5 cfu/mL of no more than 2 species of microorganisms in a voided urine sample	
b. At least 10^2 cfu/mL of any number of organisms in a specimen collected by in-and-out catheter	
B. For residents with an indwelling catheter (both criteria 1 and 2 must be present)	Recent catheter trauma, catheter obstruction, or new-onset hematuria are useful localizing signs that are consistent with UTI but are not necessary for diagnosis.
1. At least 1 of the following sign or symptom subcriteria	
a. Fever, rigors, or new-onset hypotension, with no alternate site of infection	
b. Either acute change in mental status or acute functional decline, with no alternate diagnosis and leukocytosis	
c. New-onset suprapubic pain or costovertebral angle pain or tenderness	
d. Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate	
2. Urinary catheter specimen culture with at least 10^5 cfu/mL of any organism(s)	Urinary catheter specimens for culture should be collected following replacement of the catheter (if current catheter has been in place for >14 d).

NOTE. Pyuria does not differentiate symptomatic UTI from asymptomatic bacteriuria. Absence of pyuria in diagnostic tests excludes symptomatic UTI in residents of long-term care facilities. cfu, colony-forming units.

TABLE 6. Surveillance Definitions for Skin, Soft Tissue, and Mucosal Infections

Criteria	Comments
A. Cellulitis, soft tissue, or wound infection (at least 1 of the following criteria must be present)	
1. Pus present at a wound, skin, or soft tissue site	Presence of organisms cultured from the surface (eg, superficial swab sample) of a wound is not sufficient evidence that the wound is infected. More than 1 resident with streptococcal skin infection from the same serogroup (eg, A, B, C, G) in a long-term care facility (LTCF) may indicate an outbreak.
2. New or increasing presence of at least 4 of the following sign or symptom subcriteria	
a. Heat at the affected site	
b. Redness at the affected site	
c. Swelling at the affected site	
d. Tenderness or pain at the affected site	
e. Serous drainage at the affected site	
f. One constitutional criterion (see Table 2)	
B. Scabies (both criteria 1 and 2 must be present)	An epidemiologic linkage to a case can be considered if there is evidence of geographic proximity in the facility, temporal relationship to the onset of symptoms, or evidence of common source of exposure (ie, shared caregiver). Care must be taken to rule out rashes due to skin irritation, allergic reactions, eczema, and other noninfectious skin conditions
1. A maculopapular and/or itching rash	
2. At least 1 of the following scabies subcriteria	
a. Physician diagnosis	
b. Laboratory confirmation (scraping or biopsy)	
c. Epidemiologic linkage to a case of scabies with laboratory confirmation	
C. Fungal oral or perioral and skin infections	
1. Oral candidiasis (both criteria a and b must be present)	Mucocutaneous *Candida* infections are usually due to underlying clinical conditions such as poorly controlled diabetes or severe immunosuppression. Although they are not transmissible infections in the healthcare setting, they can be a marker for increased antibiotic exposure.
a. Presence of raised white patches on inflamed mucosa or plaques on oral mucosa	
b. Diagnosis by a medical or dental provider	
2. Fungal skin infection (both criteria a and b must be present)	Dermatophytes have been known to cause occasional infections and rare outbreaks in the LTCF setting.
a. Characteristic rash or lesions	
b. Either a diagnosis by a medical provider or a laboratory-confirmed fungal pathogen from a scraping or a medical biopsy	
D. Herpesvirus skin infections	Reactivation of herpes simplex ("cold sores") or herpes zoster ("shingles") is not considered a healthcare-associated infection. Primary herpesvirus skin infections are very uncommon in a LTCF except in pediatric populations, where it should be considered healthcare associated.
1. Herpes simplex infection (both criteria a and b must be present)	
a. A vesicular rash	
b. Either physician diagnosis or laboratory confirmation	
2. Herpes zoster infection (both criteria a and b must be present)	
a. A vesicular rash	
b. Either physician diagnosis or laboratory confirmation	
E. Conjunctivitis (at least 1 of the following criteria must be present)	Conjunctivitis symptoms ("pink eye") should not be due to allergic reaction or trauma.
1. Pus appearing from 1 or both eyes, present for at least 24 h	
2. New or increased conjunctival erythema, with or without itching	
3. New or increased conjunctival pain, present for at least 24 h	

NOTE. For wound infections related to surgical procedures, LTCFs should use the Centers for Disease Control and Prevention's National Healthcare Safety Network Surgical Site Infection criteria and report these infections back to the institution where the original surgery was performed.

TABLE 7. Surveillance Definitions for Gastrointestinal (GI) Tract Infections

Criteria	Comments
A. Gastroenteritis (at least 1 of the following criteria must be present) 1. Diarrhea: 3 or more liquid or watery stools above what is normal for the resident within a 24-h period 2. Vomiting: 2 or more episodes in a 24-h period 3. Both of the following sign or symptom subcriteria a. A stool specimen testing positive for a pathogen (eg, *Salmonella, Shigella, Escherichia coli* O157 : H7, *Campylobacter* species, rotavirus) b. At least 1 of the following GI subcriteria i. Nausea ii. Vomiting iii. Abdominal pain or tenderness iv. Diarrhea	Care must be taken to exclude noninfectious causes of symptoms. For instance, new medications may cause diarrhea, nausea, or vomiting; initiation of new enteral feeding may be associated with diarrhea; and nausea or vomiting may be associated with gallbladder disease. Presence of new GI symptoms in a single resident may prompt enhanced surveillance for additional cases. In the presence of an outbreak, stool specimens should be sent to confirm the presence of norovirus or other pathogens (eg, rotavirus or *E. coli* O157 : H7).
B. Norovirus gastroenteritis (both criteria 1 and 2 must be present) 1. At least 1 of the following GI subcriteria a. Diarrhea: 3 or more liquid or watery stools above what is normal for the resident within a 24-h period b. Vomiting: 2 or more episodes of in a 24-h period 2. A stool specimen for which norovirus is positively detected by electron microscopy, enzyme immunoassay, or molecular diagnostic testing such as polymerase chain reaction (PCR)	In the absence of laboratory confirmation, an outbreak (2 or more cases occurring in a long-term care facility [LTCF]) of acute gastroenteritis due to norovirus infection may be assumed to be present if all of the following criteria are present ("Kaplan Criteria"): (a) vomiting in more than half of affected persons; (b) a mean (or median) incubation period of 24–48 h; (c) a mean (or median) duration of illness of 12–60 h; and (d) no bacterial pathogen is identified in stool culture.
C. *Clostridium difficile* infection (both criteria 1 and 2 must be present) 1. One of the following GI subcriteria a. Diarrhea: 3 or more liquid or watery stools above what is normal for the resident within a 24-h period b. Presence of toxic megacolon (abnormal dilatation of the large bowel, documented radiologically) 2. One of the following diagnostic subcriteria a. A stool sample yields a positive laboratory test result for *C. difficile* toxin A or B, or a toxin-producing *C. difficile* organism is identified from a stool sample culture or by a molecular diagnostic test such as PCR b. Pseudomembranous colitis is identified during endoscopic examination or surgery or in histopathologic examination of a biopsy specimen	A "primary episode" of *C. difficile* infection is defined as one that has occurred without any previous history of *C. difficile* infection or that has occurred >8 wk after the onset of a previous episode of *C. difficile* infection. A "recurrent episode" of *C. difficile* infection is defined as an episode of *C. difficile* infection that occurs 8 wk or sooner after the onset of a previous episode, provided that the symptoms from the earlier (previous) episode have resolved. Individuals 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 coinfected with another pathogen. It is important that other surveillance criteria be used to differentiate infections in this situation.

TABLE 1. *Clostridium Difficile* Infection (CDI) Surveillance Definitions[22,23]

Case type	Definition
Healthcare facility–onset, healthcare facility–associated CDI	CDI symptom onset more than 3 days after admission to a healthcare facility, with day of admission being day 1
Community-onset, healthcare facility–associated CDI	CDI symptom onset in the community or less than or equal to 3 days from admission, provided symptom onset was less than 4 weeks after the last discharge from a healthcare facility
Community-associated CDI	CDI symptom onset in the community or less than or equal to 3 days after admission to a healthcare facility, provided that symptom onset was more than 12 weeks after the last discharge from a healthcare facility
Indeterminate onset CDI	CDI case patient who does not fit any of the above criteria for an exposure setting (eg, onset in the community greater than 4 weeks but less than 12 weeks after the last discharge from a healthcare facility)
Unknown	Exposure setting cannot be determined because of lack of available data
Recurrent CDI	An episode of CDI that occurs less than or equal to 8 weeks after the onset of a previous episode, provided that CDI symptoms from the earlier episode resolved

NOTE. When utilizing laboratory-based reporting symptoms, date and time of stool specimen collection can be used as a surrogate for symptom onset. If data on the time a patient was admitted (in addition to date) and/or the time stool was collected for testing are not available, CDI can be considered healthcare facility onset if stool is positive for toxigenic *C. difficile* or toxin after the third calendar day from hospital admission, where the first day is the day of admission (ie, a patient admitted on Monday with stool first positive for *C. difficile* toxin on Thursday or later is considered to have healthcare facility–onset CDI).