Loeb Minimum Criteria for the Initiation of Antibiotics in Long-Term Care Residents

Quick Reference Chart

Loeb, et al. developed minimum criteria for the initiation of antibiotic of Long-Term Care (LTC) residents in 2001. These criteria were developed to provide prescribers with clinical guidance on when a LTC resident should have antibiotics initiated for 4 suspected infectious disease syndromes: urinary tract infections, skin and soft tissue infections, lower respiratory tract infections, and fever with an unknown source. The criteria are summarized below and provided as a quick reference guide.

Loeb Minimum Criteria for the Initiation of Antibiotics in Long-Term Care Residents	
Suspected Infectious Disease Syndrome	**Criteria to Meet**
Skin and Soft-Tissue Infection (SSTI)	**One of the following:** New or increasing purulent drainage **OR** Two or more of the following: Fever (Temp >37.9°C/100°F or ≥1.5°C/2.4°F above baseline) Redness (erythema) of the affected site Tenderness of the affected site Warmth of the affected site New or increased swelling of the affected site
Notes - The above criteria does NOT apply to residents with burns - Timely surgical consultation or hospitalization are required for select SSTIs (e.g. necrotizing fasciitis, gas gangrene, etc.)	

Suspected Infectious Disease Syndrome	Criteria to Meet
Lower Respiratory Tract Infection (LRTI)	
With temp >38.9°C (>102°F)	**One or more of the following:** Productive cough Respiratory rate >25 breaths per minute
With temp >37.9°C (>100°F) or ≥1.5°C (≥2.4°F) above baseline	**Both of the following:** Cough **AND** One or more of the following: Pulse rate >100 beats per minute Respiratory rate >25 breaths per minute Rigors New onset delirium

	Afebrile with COPD and >65 Years old	**Both of the following:** New or increased cough **AND** Purulent sputum production
	Afebrile without COPD	**All of the following:** New onset cough **AND** Purulent sputum production **AND** One or more of the following: Respiratory rate >25 breaths per minute New onset delirium
	With new infiltrate on chest x-ray consistent with pneumonia	**One or more of the following:** Productive cough Fever (Temp >37.9°C/100°F or ≥1.5°C/2.4°F above baseline) Respiratory rate >25 breaths per minute

Notes:
- Consider ordering a chest x-ray and complete blood count with differential for residents with cough, fever, and any of the following: heart rate >100 beats per minute, worsening mental status, or rigors
- Consider delaying antibiotic for up to 24 hours after large-volume aspiration in residents without COPD, but with a temp ≤38.9°C (102°F) and a non-productive cough. Chemical pneumonitis is most common with large volume aspirations and antibiotics are not recommended for treatment unless symptoms persist >48 hours.
- Altered mental status does not automatically constitute delirium. (See delirium criteria below)

Suspected Infectious Disease Syndrome		Criteria to Meet
Urinary Tract Infection (UTI)		
	Without indwelling urinary catheter	**One of the Following:** Acute dysuria **OR** Fever (Temp >37.9°C/100°F or ≥1.5°C/2.4°F above baseline) **PLUS** One or more of the following: Urinary urgency Suprapubic pain Urinary incontinence Urinary frequency Gross hematuria Costovertebral angle tenderness

With indwelling urinary catheter	**One or more of the following:** Fever (Temp >37.9°C/100°F or ≥1.5°C/2.4°F above baseline) Rigors New onset delirium New costovertebral angle tenderness

Notes:
- Residents with a condom catheter or undergoing intermittent catheterization should be considered as being without indwelling urinary catheter.
- Cloudy and/or foul smelling urine are not valid criteria for initiating antibiotics for urinary tract infections
- A urine analysis with urine culture should be obtained prior to initiating antibiotics, if criteria for UTI are met.
- A positive urine analysis and/or urine culture WITHOUT demonstrated symptoms constitutes asymptomatic bacteriuria, and residents should not generally be treated with antibiotics.
- Altered mental status does not automatically constitute delirium (See delirium criteria below).

Suspected Infectious Disease Syndrome	Criteria to Meet
Fever where the focus of infection is unknown	**Both of the following:** Fever (Temp >37.9°C/100°F or ≥1.5°C/2.4°F above baseline) **AND** One or more of the following: Rigors New onset delirium

Notes:
- Consider delaying antibiotics in residents with fever and altered mental status that does not meet delirium criteria.

Delirium Criteria

A Disturbance in attention and awareness
- Reduced ability to direct, focus, sustain, and/or shift attention
- Reduced orientation to the environment

B Disturbance that develops of a short period of time and represents an acute change from baseline attention and awareness, and tends to fluctuate in severity during the course of the day
- Develops in hours to a few days

C Disturbance in cognition
- Memory deficit, disorientation, language, visuospatial ability, or perception

D Disturbances in Criteria A and C that are not better explained by a pre-existing, established, or evolving neurocognitive disorders and do not occur in the context of a severely reduced level of arousal, such as coma.

E Disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal, exposure to a toxin, or is due to multiple etiologies
- Intoxication or withdrawal due to a drug of abuse or to a medication
- Evidence of disturbance is from history, physical examination, and/or laboratory findings

References:
1. Loeb M, Bentley DW, Bradley S, et al. Development of minimum criteria for the initiation of antibiotics in residents of long-term-care facilities: results of a consensus conference. *Infect Control Hosp Epidemiol*. 2001;22(2):120-124. https://doi.org/10.1086/501875
2. American Psychiatric Association Diagnostic and statistical manual of mental disorders: DSM-5. 5th ed2013; Arlington, VA: American Psychiatric Association