



## LOEB AND REVISED MCGEER CRITERIA

	Loeb Criteria	Revised McGeer Criteria
<b>Purpose</b>	Clinical criteria used to inform resident care decisions regarding initiation of antibiotics	Surveillance criteria used to count cases consistently
<b>Data needed to apply the criteria</b>	Clinical data (signs and symptoms of an infection) <i>See Appendix 1</i>	<ul style="list-style-type: none"> <li>Clinical data (signs and symptoms of an infection)</li> <li>Lab results (e.g., WBC count)</li> <li>Microbiology data (e.g., urine culture results)</li> <li>Imaging results (e.g., chest X-ray that is positive for an infiltrate)</li> </ul> <i>See Appendix 2</i>
<b>When do these criteria apply?</b>	During the initial clinical assessment of a resident with a suspected infection, even if infection has not been confirmed by diagnostic testing	Retrospective review of clinical data, which often are not available during the initial clinical assessment
<b>Clinical utility</b>	To inform clinical decision making on antibiotic initiation, often before diagnostic testing is available	To measure number of true infections and to estimate the incidence/prevalence of an infection
<b>Caveat</b>	Clinical criteria err on the side of caution and recommend empiric treatment for residents with a high likelihood of infection, not just confirmed infections. Therefore, these criteria are not appropriate for use retrospectively to count true infections.	Failure to meet surveillance definitions does not always mean there was no infection present and vice versa; a resident meeting the surveillance definition does not always mean that an antibiotic was indicated.





## APPENDIX 1

### LOEB CRITERIA FOR URINARY TRACT INFECTION

Syndrome	Loeb Criteria
<b>Suspected Urinary Tract Infection</b>	<p><u>No indwelling catheter:</u></p> <ul style="list-style-type: none"><li>• Acute dysuria alone</li></ul> <p><b>OR</b></p> <ul style="list-style-type: none"><li>• Fever (&gt;37.9°C [100°F] or a 1.5°C [2.4°F] increase above baseline temperature)</li></ul> <p><b>AND</b></p> <p>at least one of the following, new or worsening:</p> <ul style="list-style-type: none"><li>• Urgency</li><li>• Frequency</li><li>• Suprapubic pain</li><li>• Gross hematuria</li><li>• Costovertebral angle tenderness</li><li>• Urinary incontinence</li></ul>
	<p><u>With indwelling catheter (Foley or suprapubic):</u></p> <p>At least one of the following:</p> <ul style="list-style-type: none"><li>• Fever (&gt;37.9°C [100 °F] or a 1.5°C [2.4°F] increase above baseline temperature)</li><li>• New costovertebral tenderness</li><li>• Rigors with or without identified cause</li><li>• New onset delirium</li></ul>





## APPENDIX 2

### REVISED MCGEER CRITERIA FOR URINARY TRACT INFECTION

Constitutional Criteria for Infection			
Fever	Leukocytosis	Acute Mental Status Change	Acute Functional Decline
Single oral temp >37.8°C (100 °F) <b>OR</b> Repeated oral temp >37.2°C (99°F) <b>OR</b> Repeated rectal temp >37.5°C (99.5°F) <b>OR</b> Single temp >1.1°C (2°F) from baseline from any site	>14,000 WBC/mm <sup>3</sup> <b>OR</b> >6% band or ≥1,500 bands/mm <sup>3</sup>	Acute onset <b>AND</b> Fluctuating course <b>AND</b> Inattention <b>AND</b> Either disorganized thinking or altered level of consciousness	3-point increase in baseline ADL score according to the following items: <ol style="list-style-type: none"><li>1. Bed mobility</li><li>2. Transfer</li><li>3. Locomotion within LTCF</li><li>4. Dressing</li><li>5. Toilet use</li><li>6. Personal hygiene</li><li>7. Eating</li></ol> [Each scored from 0 (independent) to 4 (total dependence)]





## APPENDIX 2 CONTINUED

### REVISED MCGEER CRITERIA FOR URINARY TRACT INFECTION

Surveillance Definitions		
Syndrome	Criteria	Selected Comments
UTI without indwelling catheter	<p>Must fulfill both 1 AND 2:</p> <ol style="list-style-type: none"> <li>1. At least one of the following signs or symptoms:               <ul style="list-style-type: none"> <li>• Acute dysuria or pain, swelling, or tenderness of testes, epididymis, or prostate</li> <li>• Fever or leukocytosis, and <math>\geq 1</math> of the following:                   <ul style="list-style-type: none"> <li><input type="checkbox"/> Acute costovertebral angle pain or tenderness</li> <li><input type="checkbox"/> Suprapubic pain</li> <li><input type="checkbox"/> Gross hematuria</li> <li><input type="checkbox"/> New or marked increase in incontinence</li> <li><input type="checkbox"/> New or marked increase in urgency</li> <li><input type="checkbox"/> New or marked increase in frequency</li> </ul> </li> <li>• If no fever or leukocytosis, then <math>\geq 2</math> of the following:                   <ul style="list-style-type: none"> <li><input type="checkbox"/> Suprapubic pain</li> <li><input type="checkbox"/> Gross hematuria</li> <li><input type="checkbox"/> New or marked increase in incontinence</li> <li><input type="checkbox"/> New or marked increase in urgency</li> <li><input type="checkbox"/> New or marked increase in frequency</li> </ul> </li> </ul> </li> <li>2. At least one of the following microbiologic criteria:               <ul style="list-style-type: none"> <li><input type="checkbox"/> <math>\geq 10^5</math> cfu/mL of no more than 2 species of organisms in a voided urine sample</li> <li><input type="checkbox"/> <math>\geq 10^2</math> cfu/mL of any organism(s) in a specimen collected by an in-and-out catheter</li> </ul> </li> </ol>	<ul style="list-style-type: none"> <li>• Urine specimens for culture should be processed as soon as possible</li> <li>• If urine specimens cannot be processed within 30 minutes of collection, they should be refrigerated and cultured within 24 hours</li> </ul>



## APPENDIX 2 CONTINUED

### REVISED MCGEER CRITERIA FOR URINARY TRACT INFECTION

Surveillance Definitions		
Syndrome	Criteria	Selected Comments
UTI with indwelling catheter	<p>Must fulfill both 1 AND 2:</p> <ol style="list-style-type: none"><li>At least one of the following signs or symptoms:<ul style="list-style-type: none"><li><input type="checkbox"/> Fever, rigors, or new onset hypotension, with no alternate site of infection</li><li><input type="checkbox"/> Either acute change in mental status or acute functional decline, with no alternate diagnosis and leukocytosis</li><li><input type="checkbox"/> New-onset suprapubic pain or costovertebral angle pain or tenderness</li><li><input type="checkbox"/> Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate</li></ul></li><li>Urinary catheter specimen culture with <math>\geq 10^5</math> cfu/mL of any organism(s)</li></ol>	<ul style="list-style-type: none"><li>Recent catheter trauma, catheter obstruction, or new onset hematuria are useful localizing signs that are consistent with UTI but are not necessary for diagnosis</li><li>Urinary catheter specimens for culture should be collected after replacement of the catheter if it has been in place &gt;14 days</li></ul>

#### References

- 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 Feb;22(2):120-4.
- Stone ND, Ashraf MS, Calder J, et al; Society for Healthcare Epidemiology Long-Term Care Special Interest Group. Surveillance definitions of infections in long-term care facilities: revisiting the McGeer criteria. *Infect Control Hosp Epidemiol.* 2012 Oct;33(10):965-77.

