When and How to Treat UTI

Section 1: When to Treat
UTI Toolkit – Module 4a

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Content developed in partnership with the Wisconsin Healthcare-Associated Infections in Long-Term Care Coalition

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There are Five Moments of Antibiotic Decision-Making

1. • Should I Test?
2. • Should I Treat?
3. • How do I Treat?
4. • Should I Change/Modify?
5. • How Long do I Treat?
There are Five Moments of Antibiotic Decision-Making

1. • Should I Test?
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There are Five Moments of Antibiotic Decision-Making

1. • Should I Test?
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5. • How Long do I Treat?

See Module 3
There are Five Moments of Antibiotic Decision-Making

1. Should I Test?
2. Should I Treat?
3. How do I Treat?
4. Should I Change/Modify?
5. How Long do I Treat?
When to test?

It’s the same clinical decision

When to Treat?
NO SYMPTOMS OF UTI
- Don’t test or culture the urine
- Don’t treat with antibiotics
- Don’t treat even if urine tests are abnormal

ISOLATED NON-LOCALIZING SIGNS/SYMPOTOMS
- Initiate active monitoring temporary care plan*
- Don’t test the urine and don’t treat with antibiotics initially
- Consider testing and treatment with antibiotics if symptoms not improving or localizing signs/symptoms develop

LOCALIZING SIGNS/SYMPOTOMS
- Test if symptoms are severe or not resolving during monitoring
- Evaluate need for immediate antibiotic therapy and/or transfer to higher level of care if warning signs are present

NON-LOCALIZING SIGNS/SYMPOTOMS
- Behavior changes
- Functional decline
- Mental status change
- Falls
- Restlessness
- Fatigue
- “Not being her-himself”

LOCALIZING URINARY SIGNS/SYMPOTOMS
- Acute dysuria
- New or worsening urgency
- New or worsening incontinence
- Gross hematuria
- Suprapubic pain
- Costovertebral angle pain
- New scrotal/prostate pain
- Urethral purulence

WARNING SIGNS
- Fever
- Clear-cut delirium (altered level of consciousness, disorganized thinking, psychomotor retardation)
- Rigors (shaking chills)
- Hemodynamic instability (hypotension)
- Tachycardia

* See slide #20 for an example of an active monitoring temporary care plan.
Wisconsin Healthcare-Associated Infections in LTC Coalition

1. Resident Change in Condition
   - Localizing Urinary Signs/Symptoms?
     - Yes: Obtain UA & UCx
     - No: Non-Urinary Signs/Symptoms?
       - Yes: Work-up/Treat Other Cause
       - No: Warning Signs?
         - Yes: Empiric Therapy for UTI
         - No: Obtain UA & UCx

2. Non-Urinary Signs/Symptoms?
   - Yes: Work-up/Treat Other Cause
   - No: Warning Signs?
     - Yes: Empiric Therapy for UTI
     - No: Obtain UA & UCx

3. Warning Signs?
   - Yes: Empiric Therapy for UTI
   - No: Obtain UA & UCx

4. Resident Status after 48h of Observation?
   - Improved
     - No Antibiotic Necessary
   - No Change / Worse
     - Non-Urinary Signs/Symptoms?
       - Yes: Work-up/Treat Other Cause
       - No: Obtain UA & UCx
         - Consider Empiric Rx of UTI
         - Target Therapy Based on Cx

No – consider withholding treatment until UCx results back

1 Crnich and Drinka. Ann Long Term Care 2014
Resident Change in Condition

1. Localizing Urinary Signs/Symptoms?
   - Yes: Obtain UA & UCx → Warning Signs?
   - No: Non-Urinary Signs/Symptoms?

2. Non-Urinary Signs/Symptoms?
   - Yes: Work-up/Treat Other Cause
   - No: Warning Signs?

3. Warning Signs?
   - Yes: Obtain UA & UCx → Empiric Therapy for UTI → Target Therapy Based on UCx
   - No: Non-Urinary Signs/Symptoms?

4. Resident Status after 48h of Observation?
   - Improved: No Antibiotic Necessary
   - No Change/Worse: Non-Urinary Signs/Symptoms?
     - Yes: Work-up/Treat Other Cause
     - No: Obtain UA & UCx → Consider Empiric Rx of UTI → Target Therapy Based on Cx

Empiric Therapy for UTI
dashed line to Target Therapy Based on UCx

No – consider withholding treatment until UCx results back
Wisconsin Healthcare-Associated Infections in LTC Coalition

1. Resident Change in Condition
   - Localizing Urinary Signs/Symptoms?
     - Yes: Obtain UA & UCx
     - No: Warning Signs?
       - Yes: Warning Signs
       - No: Non-Urinary Signs/Symptoms?
         - Yes: Work-up/Treat Other Cause
         - No: Obtaining UA & UCx

2. Non-Urinary Signs/Symptoms?
   - Yes: Work-up/Treat Other Cause
   - No: Warning Signs?
     - Yes: Warning Signs
     - No: Obtain UA & UCx

3. Warning Signs?
   - Yes: Obtain UA & UCx
   - No: Warning Signs

4. Resident Status after 48h of Observation?
   - No Change/Worse: Non-Urinary Signs/Symptoms?
     - Yes: Work-up/Treat Other Cause
     - No: Obtain UA & UCx
   - Improved: No Antibiotic Necessary

Empiric Therapy for UTI
Target Therapy Based on UCx
Target Therapy Based on Cx

Warning: No – consider withholding treatment until UCx results back

1 Crnich and Drinka. Ann Long Term Care 2014
If a resident has:
- Localizing urinary symptoms AND
- Warning signs*

**START ANTIBIOTICS IMMEDIATELY**
(change antibiotics based on results of urine culture when available)

*Warning Signs*
- Fever
- Clear-cut delirium (altered level of consciousness, disorganized thinking, psychomotor retardation)
- Rigors (shaking chills)
- Hemodynamic instability (hypotension)
- Tachycardia
Resident Change in Condition

1. Localizing Urinary Signs/Symptoms?
   - Yes: Obtain UA & UCx, Warning Signs?
   - No: Non-Urinary Signs/Symptoms?
     - Yes: Work-up/Treat Other Cause
     - No: Warning Signs?
       - Yes: Obtain UA & UCx, Empiric Therapy for UTI
       - No: Obtain UA & UCx

2. Non-Urinary Signs/Symptoms?
   - Yes: Work-up/Treat Other Cause
   - No: Warning Signs?
     - Yes: Obtain UA & UCx, Empiric Therapy for UTI
     - No: Obtain UA & UCx

3. Warning Signs?
   - Yes: Obtain UA & UCx, Empiric Therapy for UTI
   - No: Obtain UA & UCx

4. Resident Status after 48h of Observation?
   - Improved: No Antibiotic Necessary
   - No Change/Worse: Non-Urinary Signs/Symptoms?
     - Yes: Work-up/Treat Other Cause
     - No: Obtain UA & UCx, Consider Empiric Rx of UTI

1 Crnich and Drinka. *Ann Long Term Care* 2014
Wisconsin Healthcare-Associated Infections in LTC Coalition

If a resident has:
- Localizing urinary symptoms **ONLY**
- **No** Warning signs

**CONSIDER WAITING FOR CULTURE RESULTS BEFORE STARTING ANTIBIOTICS**

**Benefits of Waiting**
- Generally safe
- Avoids treatment with ineffective antibiotics (when resistance present)
- Allows use of narrow spectrum antibiotics (because you know what you are treating)

1. Resident Change in Condition
   - Yes
   - Localizing Urinary Signs/Symptoms?
     - Yes
     - Obtain UA & UCx
     - Warning Signs?
       - Yes
       - Empiric Therapy for UTI
       - Target Therapy Based on UCx
       - No – consider withholding treatment until UCx results back
     - No
     - Non-Urinary Signs/Symptoms?
       - Yes
       - Work-up/Treat Other Cause
       - Consider Empiric Rx of UTI
     - No
     - Work-up/Treat Other Cause
   - No
   - Non-Urinary Signs/Symptoms?
     - Yes
     - Work-up/Treat Other Cause
     - No
     - Work-up/Treat Other Cause

2. Resident Status after 48h of Observation?
   - Yes
   - Obtain UA & UCx
   - Consider Empiric Rx of UTI
   - Target Therapy Based on Cx
   - No
   - Work-up/Treat Other Cause

1 Crnich and Drinka. *Ann Long Term Care* 2014
Wisconsin Healthcare-Associated Infections in LTC Coalition

1. **Resident Change in Condition**
   - **Localizing Urinary Signs/Symptoms?**
     - Yes: **Obtain UA & UCx** → **Warning Signs?**
     - No: **Non-Urinary Signs/Symptoms?**
       - Yes: **Work-up/Treat Other Cause**
       - No: **Warning Signs?**

2. **Warning Signs?**
   - Yes: **Obtain UA & UCx** → **Empiric Therapy for UTI** → **Target Therapy Based on UCx**
   - No: **Obtain UA & UCx** → **Consider Empiric Rx of UTI** → **Target Therapy Based on Cx**

3. **Resident Status after 48h of Observation?**
   - Improved: **No Antibiotic Necessary**
   - No Change / Worse: **Non-Urinary Signs/Symptoms?**
     - Yes: **Work-up/Treat Other Cause**
     - No: **Obtain UA & UcX** → **Consider Empiric Rx of UTI** → **Target Therapy Based on Cx**

1 Crnich and Drinka. *Ann Long Term Care* 2014
Wisconsin Healthcare-Associated Infections in LTC Coalition

If a resident has:
- No localizing urinary symptoms AND
- No evidence of infection elsewhere AND
- Warning signs*

CULTURE/TREAT WITH ANTIBIOTICS

* Warning Signs
- Fever
- Clear-cut delirium
- Rigors
- Hemodynamic instability (hypotension)
- Tachycardia

1 Crnich and Drinka. *Ann Long Term Care* 2014
Isolated Non-Localizing Signs/Symptoms = Active Monitoring

**NON-LOCALIZING SIGNS/SYMPTOMS**
- Behavior Changes
- Functional Decline
- Mental Status Changes
- Falls
- Restlessness
- Fatigue
- “Not being her-himself”

**ISOLATED NON-LOCALIZING SIGNS/SYMPTOMS**
- Initiate active monitoring temporary care plan*
- Don’t test the urine and don’t treat with antibiotics initially
- Consider testing and treatment with antibiotics if symptoms not improving or localizing signs/symptoms develop

* See slide #20 for an example of an active monitoring temporary care plan.
What is an Active Monitoring Temporary Care Plan*

<table>
<thead>
<tr>
<th>Active Monitoring Tracking Form</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resident Name</strong></td>
</tr>
<tr>
<td><strong>Facility</strong></td>
</tr>
</tbody>
</table>

### A. Warning Signs

<table>
<thead>
<tr>
<th>Symptoms or Signs</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever (single temperature 100°F or greater or multiple recurrent temperatures of 99 or greater [MAY SUBSTITUTE FACILITY CRITERIA IF THEY EXIST])</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Dehydration</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Hypertension</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Hypotension</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Tachycardia (elevated heart rate)</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Leukocytosis (WBC &gt; 14,000 cells/mm³ or &gt; 6% bands)</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
</tbody>
</table>

### B. Localizing Signs/Symptoms

<table>
<thead>
<tr>
<th>Symptoms or Signs</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute dysuria – burning / pain on urination</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Gross hematuria</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Suprapubic pain = either reported or noted when pressing on abdomen</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>New urinary frequency or urgency</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
</tbody>
</table>

### C. Non-Localizing Signs/Symptoms

<table>
<thead>
<tr>
<th>Symptoms or Signs</th>
<th>Date</th>
<th>Date</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in behavior</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Functional decline (requires more assistance)</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Mental status change</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>New fall</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Restlessness</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Fatigue/less interactive</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Not her/himself</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Other (specify):</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Other (specify):</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
<tr>
<td>Other (specify):</td>
<td>D</td>
<td>E</td>
<td>N</td>
</tr>
</tbody>
</table>

Evaluate resident for symptoms/signs above each shift. Check appropriate box if present.


2 Nace et al. *J Am Med Dir Assoc* 2014
If a resident has:

- No localizing urinary symptoms AND
- No warning signs (see later) AND
- No evidence of infection elsewhere AND
- Improves after 48 hours of observation THEN

**DON’T PRESCRIBE ANY ANTIBIOTICS**
If a resident has:
- No localizing urinary symptoms AND
- No warning signs (see later) AND
- No evidence of infection elsewhere AND
- Does not improve after 48 hours of observation

THEN

Look for other causes again.
If no other causes found then consider treatment for UTI.