

Wisconsin Healthcare-Associated Infections in LTC Coalition



When To Test?

When to Submit a Urine Specimen for Testing?

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When to Test

“Test the urine when there is a reasonable chance of a urinary tract infection being present based on the presence of signs and symptoms localizing to the urinary tract.”

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What is a UTI?

- There is no gold standard definition of UTI, but several consensus definitions have been suggested and revised over time
- These definitions differ slightly, but all require the presence of **signs** and **symptoms** localizing to the urinary tract

Nace, et.al. JAMDA 15 (2014) 133-139 3

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Urinary Tract Signs and Symptoms Include*

- Dysuria
- New onset
 - Frequency
 - Urgency, or
 - Incontinence
- Flank pain or tenderness
- Suprapubic pain
- Gross hematuria
- Focal tenderness or swelling of testis, epididymis or prostate
- Recent catheter trauma, obstruction, or purulent drainage around the catheter

*Nace, et. al. 4

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What about Non-Communicative Residents?

- Residents frequently have non-specific geriatric symptoms and are unable to tell us what is bothering them
- Non-specific symptoms are:
 - Fever
 - Functional decline
 - Aggressive behaviors
 - Mental status changes
- Unfortunately, these symptoms are just that: **non-specific**

Nace, et.al. JAMDA 15 (2014) 133-139 5

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What about Non-Communicative Residents?

- For residents who cannot reliably self-report symptoms, the presence of; fever, leukocytosis, or hemodynamic instability alone (without signs of infection in a site other than the urinary system) may be adequate to justify initiation of antimicrobial therapy, and therefore testing
- AMDA Choosing Wisely Campaign (See Item 3) (https://www.amda.com/tools/ChoosingWisely_5Things.pdf)

Nace, et. al. JAMDA 15 (2014) 133 - 139 6

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Is a Change in Mental Status, Fatigue, or a Fall a Symptom of a UTI?

- Sometimes, but most commonly NOT
- UTI is less likely without specific urinary symptoms
- Non-specific Geriatric Symptoms, such as change in mental status, fatigue, or a fall may be due to a variety of non-infectious causes including:
 - Constipation, Dehydration
 - Depression, Medication Side Effects
 - Pain, Poor Sleep

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Non-specific Geriatric Symptoms May Accompany a UTI but...

Without another localizing urinary symptom or fever or leukocytosis and no other identified source of infection, these non-specific symptoms are unlikely a sign of UTI

AND

A urine specimen should NOT be sent



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Non-Specific Symptoms in Absence of Urinary Symptoms

- Should be evaluated to determine the correct cause of the symptom or behavior. So, update care plan...
 - Monitor vital signs and symptoms for several days
 - Review meds, bowel pattern, social milieu
 - Encourage fluids if appropriate
 - Perform ongoing assessments
 - Watch closely for progression of symptoms or change in clinical status
 - Consider blood work
- Wait and watch and re-evaluate... Notify provider as indicated

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Non-Specific Symptoms in Absence of Urinary Symptoms

It is important to consider a range of possible causes for non-specific geriatric symptoms to prevent missing the real diagnosis because....

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... Under Normal Condition

- The skin surface is not sterile...
- The mouth is not sterile...
- The colon is not sterile...
- ***And in many residents the bladder is not sterile***
- ***Up to 50% of LTC residents have bacteria in their urine but no infection is present***

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Asymptomatic Bacteriuria ≠ UTI

- Asymptomatic bacteriuria is frequently mistaken for a UTI. It is important to understand this to avoid unnecessary testing and the error of inappropriate treatment with antibiotics

Drinka, JAMDA 2009 (2) 516-519 12

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Urine Characteristics

- Dark concentrated and / or strong smelling urine are **NOT** specific urinary symptoms suggesting UTI
- Without specific urinary tract signs and symptoms, concentrated urine or strong smelling urine **DOES NOT** require urine testing

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When Symptoms are Absent:

- “Positive” urine dip is meaningless
- “Positive” urinalysis is meaningless
- “Positive” urine culture is just Asymptomatic Bacteriuria

Regardless of symptoms:

- Poor urine collection technique causes false-positive urinalysis
- See unit on proper urine collection technique

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In other words...

Don't think urine first in a resident with a change in condition and no localizing urinary tract signs and symptoms

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How Do We Improve?

Sometimes there are systemic triggers to inappropriate urinalysis testing within systems and policies of the nursing home to include but not limited to **standing orders**

It is recommended that all such systemic triggers for inappropriate or automatic urine collection and testing be considered and eliminated

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How Do We Improve?

Know the signs and symptoms of a UTI

Educate the Line Nursing Staff about the signs and symptoms of UTI

Develop minimum criteria to collect and test urine

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How Do We Improve?

- Consider use of surveillance criteria* to guide the decision to test urine
- Alternatively, create your own consensus-based criteria** to guide decision to test
- Incorporate your criteria into a QAPI project to improve your rate of appropriate urine testing within your facility

**Revisiting the McGeer Criteria” ICHE 2012;33(10):965-977
**Loeb, et al, ICHE 2001;22(2):120-124
**Nace, et al JAMDA 2014;15: 134-138

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For example, working criteria for sending a sample for urinalysis might consist of something like...

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Revised McGeer: Without Indwelling Catheter

(A) Clinical (At least one of the following must be met)	+	(B) Lab (At least one of the following must be met)
<ol style="list-style-type: none"> Either of the following: <ul style="list-style-type: none"> <input type="checkbox"/> Acute dysuria or <input type="checkbox"/> Acute pain, swelling or tenderness of testes, epididymis or prostate If either FEVER or LEUKOCYTOSIS present need to include ONE or more of the following: <ul style="list-style-type: none"> <input type="checkbox"/> Acute costovertebral angle pain or tenderness <input type="checkbox"/> Suprapubic pain <input type="checkbox"/> Gross hematuria <input type="checkbox"/> New or marked increase in incontinence <input type="checkbox"/> New or marked increase in urgency <input type="checkbox"/> New or marked increase frequency If neither FEVER or LEUKOCYTOSIS present INCLUDE TWO or more of the ABOVE (Box #2). 		<ol style="list-style-type: none"> VOIDED SPECIMEN: POSITIVE URINE CULTURE ($\geq 10^5$ cfu/mL) NO MORE THAN 2 ORGANISMS STRAIGHT CATH SPECIMEN: POSITIVE URINE CULTURE ($\geq 10^3$ cfu/mL) ANY NUMBER OF ORGANISMS

Stone et al. *Infect Control Hosp Epidemiol* 2012; 33:965-977

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Revised McGeer Resident With Indwelling Catheter

(A) Clinical (At least one of the following must be met with no alt. explanation)	+	(B) Lab (Must be met)
<ul style="list-style-type: none"> <input type="checkbox"/> Fever <input type="checkbox"/> Rigors <input type="checkbox"/> New onset hypotension <input type="checkbox"/> Either acute change in mental status or acute functional decline, with no alternate diagnosis AND leukocytosis <input type="checkbox"/> New onset costovertebral angle pain or tenderness <input type="checkbox"/> New onset suprapubic pain <input type="checkbox"/> Acute pain, swelling or tenderness of the testes, epididymis or prostate <input type="checkbox"/> Purulent drainage from around the catheter 		<ul style="list-style-type: none"> <input type="checkbox"/> Positive urine culture ($\geq 10^5$ cfu/mL) of ANY ORGANISM(S)

Stone et al. *Infect Control Hosp Epidemiol* 2012; 33:965-977

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Loeb Minimum Criteria

Note: Culture Results Not Part of Decision-Making Without Indwelling Catheter

- Acute dysuria alone OR
- Fever* plus 1 or more of the symptoms below (**new or increased**) OR
- If no fever, at least 2 of the symptoms below (**new or increased**)

<input type="checkbox"/> Costovertebral angle tenderness	<input type="checkbox"/> Suprapubic Pain
<input type="checkbox"/> Gross Hematuria	<input type="checkbox"/> Urinary Incontinence
<input type="checkbox"/> Urgency	<input type="checkbox"/> Frequency

*Fever > 100° or 2.4° F above baseline

Loeb et al. *Infect Control Hosp Epidemiol* 2001; 22:120-124 25

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Loeb Minimum Criteria

Note: Culture Results Not Part of Decision Making With Indwelling Catheter

At least one or more of the symptoms below (new or increased)

- Fever > 100° or 2.4° F above baseline
- Costovertebral angle tenderness
- Rigors (shaking chills)
- New onset delirium

Loeb et al. *Infect Control Hosp Epidemiol* 2001; 22:120-124 26

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Summary – When to Test

- Establish facility criteria for testing urine
- Test the urine only when there are specific urinary tract signs or symptoms
- Perform assessment of facility rate of appropriate testing
- Improve appropriate testing rate to lower the avoidable harm of inappropriate treatment

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