



When To Test?

When to Submit a Urine Specimen
for Testing?



UTI Toolkit – Module 3

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



Wisconsin Partnership Program
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Objectives

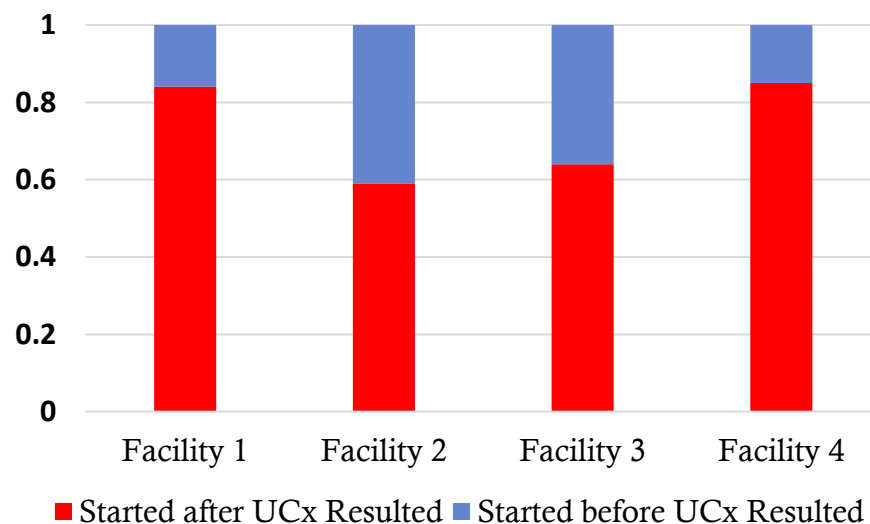
- Reinforce the benefits of reducing unnecessary urine testing
- Introduce the “UTI Stoplight Tool”
- Introduce the “When To Test-Nursing Tool”
- Briefly describe how to manage residents who have isolated, non-specific geriatric symptoms (low probability of UTI)



Urine Cultures Are a Common Trigger for Antibiotic Use in Nursing Homes

- It is hard for providers to ignore a positive urine culture, even when the resident does not exhibit specific UTI symptoms.
- Nearly 80% of antibiotic courses initiated for treatment of UTI are started after urine cultures are resulted (Figure 1).
- A majority of these residents had asymptomatic bacteriuria and did not exhibit any localizing signs or symptoms of UTI.

Figure 1: Timing of Urine Culture Results and Antibiotic Starts





Potential Harm Created by Sending Unnecessary Urine Tests

1 Miss Other Important Diagnoses

- Medication Side Effect
- Dehydration
- Uncontrolled Pain
- Constipation
- Sleep Deprivation
- Hypoglycemia
- Electrolyte Abnormality
- Low O2 / High CO2
- Stroke/Seizure

2 Overuse Antibiotics Which Can Cause a Variety of Resident Harms*

ADE

- 20% of all adverse drug events (ADEs) in nursing homes caused by antibiotics
- Antibiotic-associated ADEs are one of the most common reasons for transfer to ER

CDI

- *C. difficile* infection (CDI) is a life-threatening intestinal disease caused by antibiotics
- 12% of nursing home residents treated inappropriately for UTI develop CDI

ARO

- ~50% of nursing residents are colonized with Abx-resistant organisms (AROs)
- Antibiotic exposure is the single most important risk factor for ARO colonization

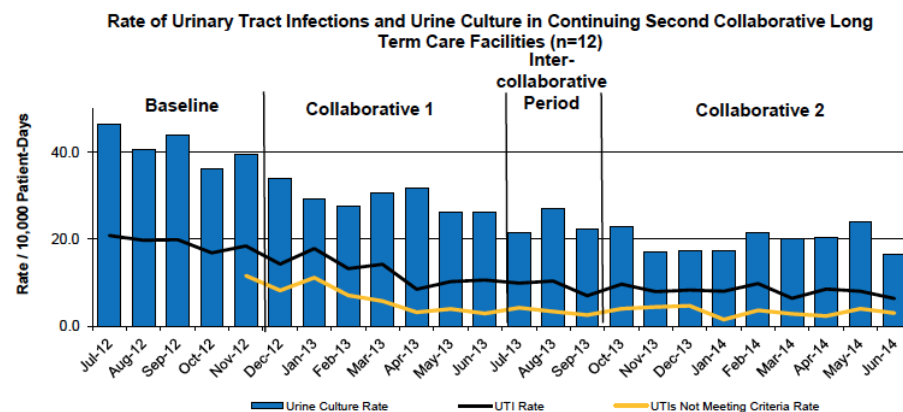
* See “Clinical Rationale” in **Module 1** for more detail.



Benefits of Reducing Unnecessary Urine Culture Testing

- 12 Massachusetts nursing homes participated in a QI project to reduce urine testing in residents who presented with non-specific geriatrics symptoms (e.g., behavior change) and did not have other specific symptoms.
- Urine culture and UTI treatment rates dropped significantly (Figure & Table).
- Rates of *Clostridium difficile* improved but not to statistically significant degree (Table).

Figure: Impact of Reducing Urine Culture Testing



Measure	IRR (95% CI)
Urine Culture Rate	0.47 (0.42 – 0.52)
UTI Rate	0.42 (0.35 – 0.50)
<i>C. difficile</i> Rate	0.85 (0.45 – 1.68)



UTI Stoplight Tool

- Intended to help nursing staff determine if a resident experiencing a change-in-condition has a high probability of UTI (green light) or a lower probability of UTI (red and yellow light).
- The tool has been incorporated into educational pamphlets as well as posters in order to make it readily available to staff and providers.
- Nursing staff should be encouraged to specify their determination of the resident's UTI probability during their initial communication with providers about a new resident change-in-condition.



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/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

LOCALIZING SIGNS/SYMPTOMS

- 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/SYMPTOMS

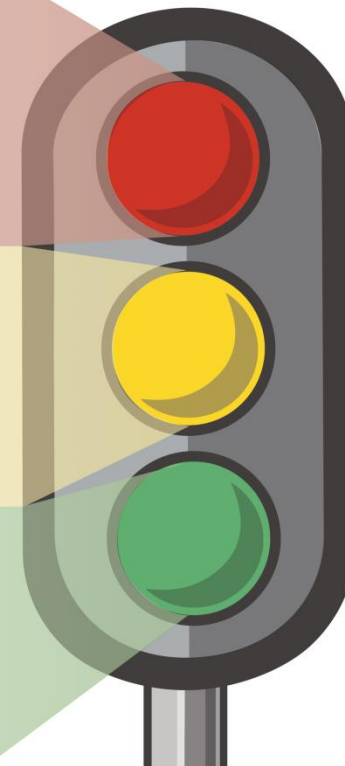
- Behavior changes
- Functional decline
- Mental status change
- Falls
- Restlessness
- Fatigue
- "Not being her-himself"

LOCALIZING URINARY SIGNS/SYMPTOMS

- 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





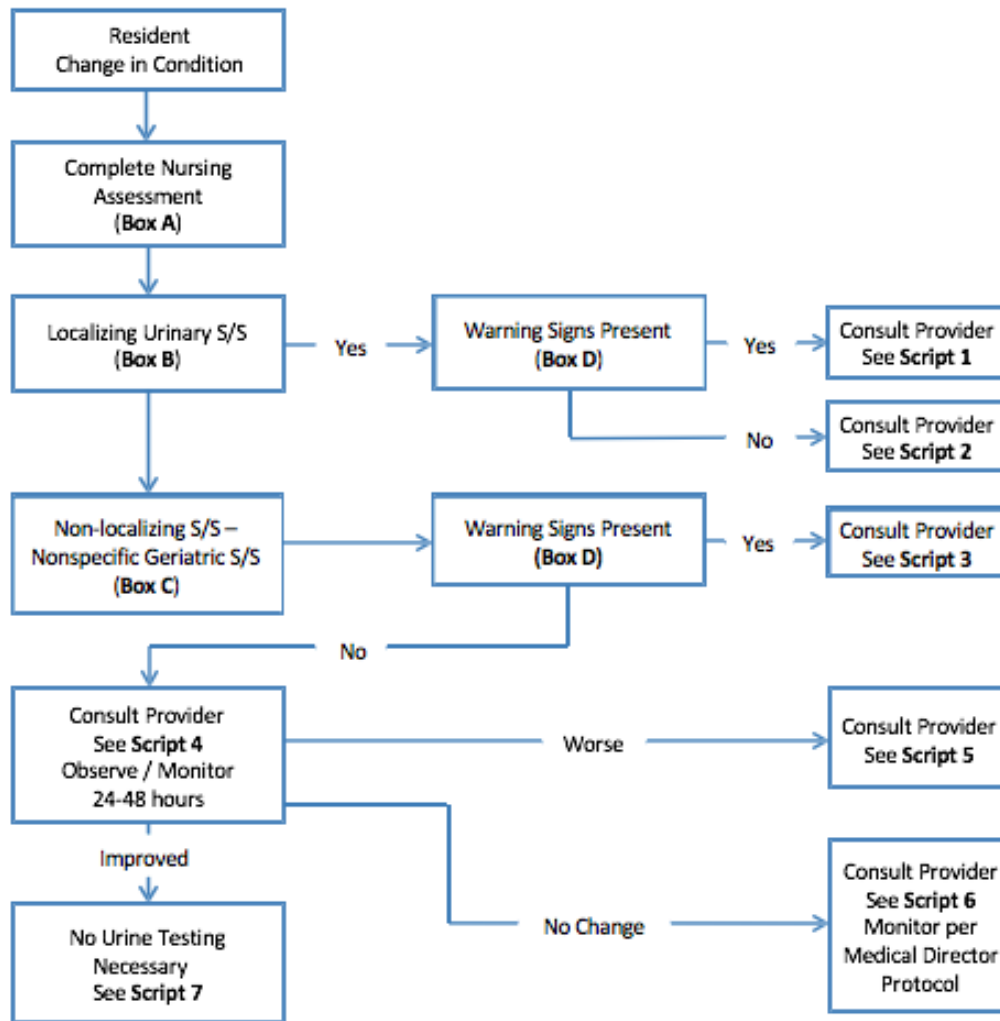
When To Test-Nursing Tool

- The tool can be used to train nursing staff on how to assess their residents, what parts of the assessment to pay attention to and when they need to contact the provider*
- The tool is intended to be used in conjunction with communication scripts that have been developed for different types of resident change in condition*
- The tool may also be incorporated into handouts and poster reminders for nursing work spaces

*See Nursing Tool: Application to Case Studies and Development of Provider Communication Scripts in **Module 3**.



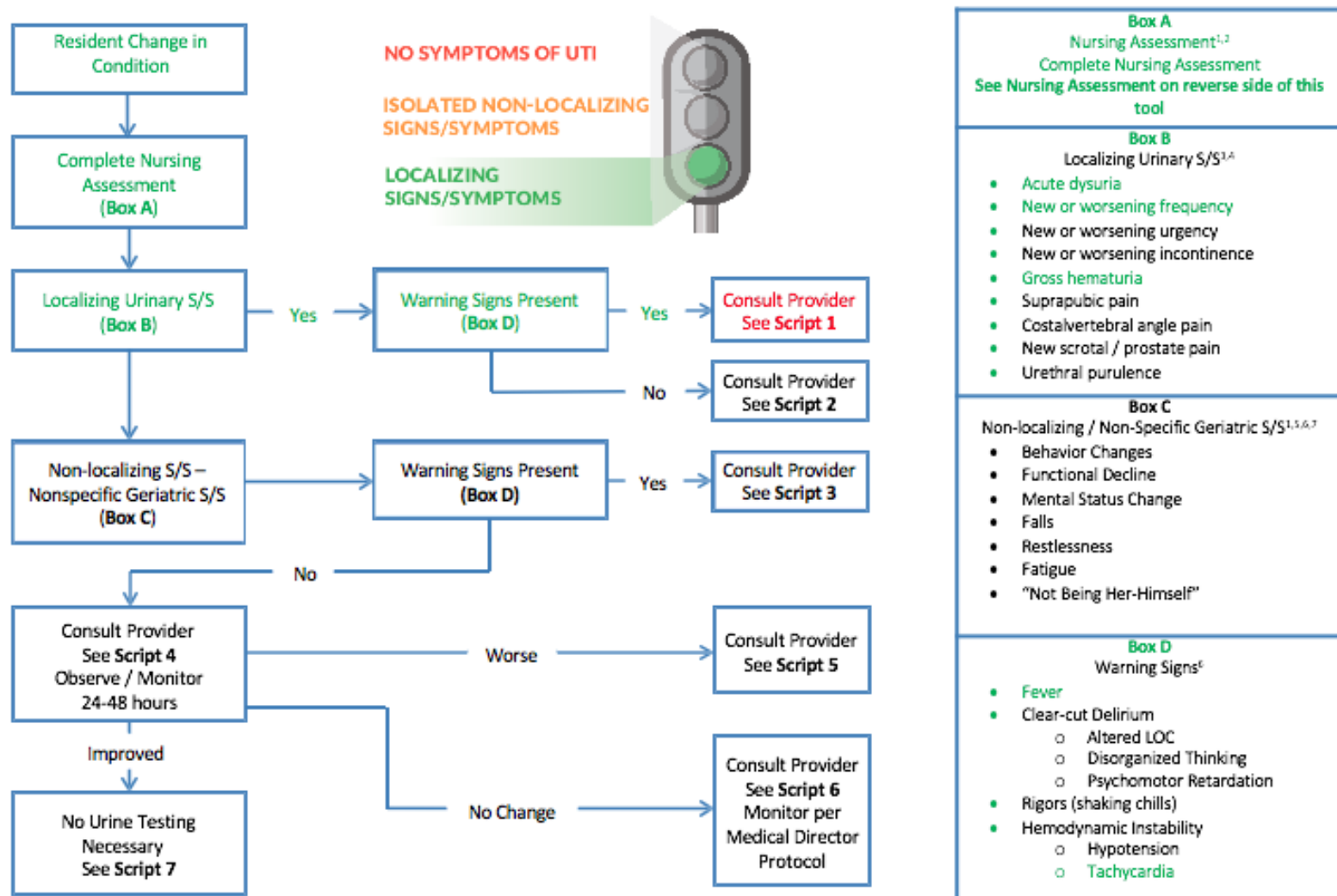
When To Test – Nursing Tool



<p>Box A Nursing Assessment^{1,2} Complete Nursing Assessment See Nursing Assessment on reverse side of this tool</p>
<p>Box B Localizing Urinary S/S^{3,4}</p> <ul style="list-style-type: none"> • Acute dysuria • New or worsening frequency • New or worsening urgency • New or worsening incontinence • Gross hematuria • Suprapubic pain • Costalvertebral angle pain • New scrotal / prostate pain • Urethral purulence
<p>Box C Non-localizing / Non-Specific Geriatric S/S^{1,5,6,7}</p> <ul style="list-style-type: none"> • Behavior Changes • Functional Decline • Mental Status Change • Falls • Restlessness • Fatigue • "Not Being Her-Himself"
<p>Box D Warning Signs⁸</p> <ul style="list-style-type: none"> • Fever (defined?) • Clear-cut Delirium <ul style="list-style-type: none"> ○ Altered LOC ○ Disorganized Thinking ○ Psychomotor Retardation • Rigors (shaking chills) • Hemodynamic Instability <ul style="list-style-type: none"> ○ Hypotension ○ Tachycardia

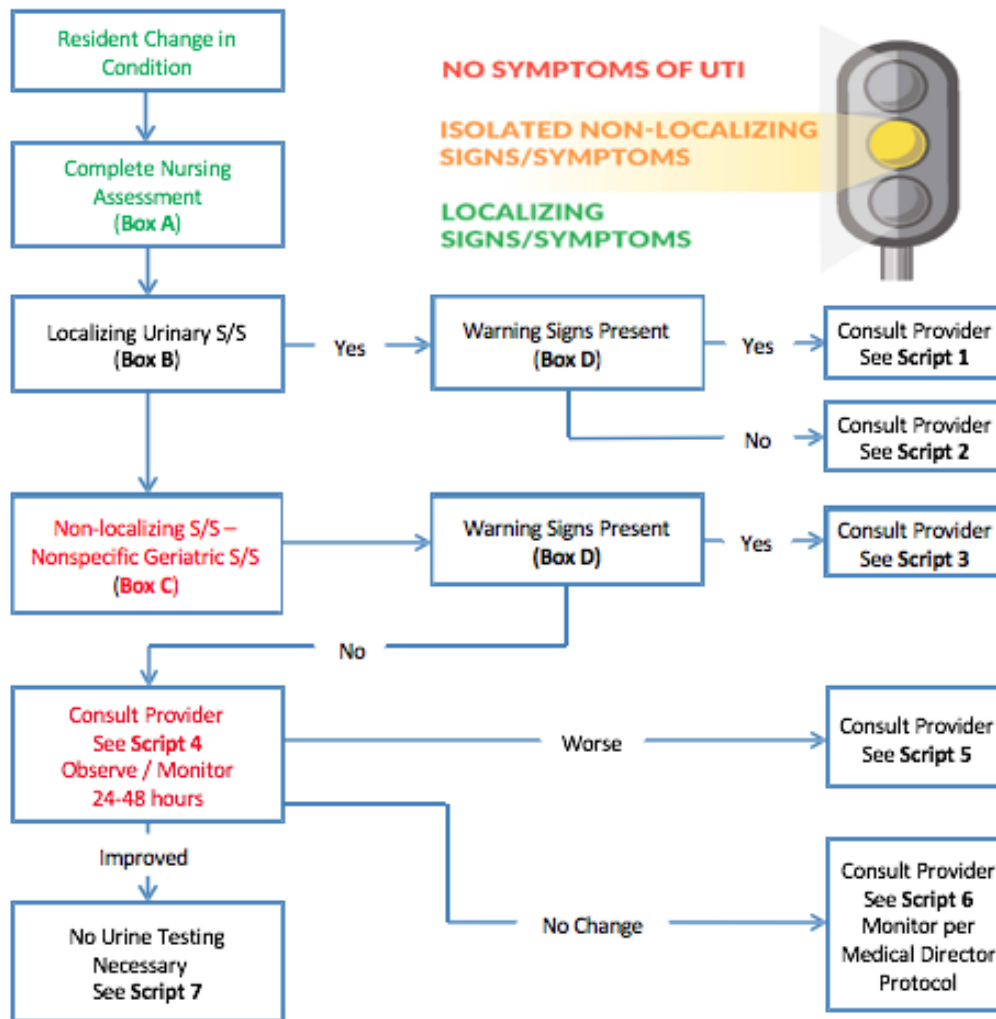


When To Test – Nursing Tool





When To Test – Nursing Tool



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What is Active Monitoring?

1. Re-examining and measuring vital signs more frequently
2. Reviewing medications, bowel/bladder patterns, sleep patterns and social milieu to identify potential triggers
3. Promoting fluid intake (IV/PO) if there is concern for dehydration
4. Contacting provider at as needed and with development of localizing signs/symptoms or warning signs
5. Obtaining additional labs (not urine tests though!)

Example: Temporary Care Plan Order set

R2. Monitoring and Supportive Care Orders
<input type="checkbox"/> Monitor vital signs every ____ hours
<input type="checkbox"/> Oral fluids for hydration: ____ cc ____ hr.
<input type="checkbox"/> IV fluids for hydration ____ cc ____ hr.
<input type="checkbox"/> Monitor fluid intake/urine output every ____ hours
<input type="checkbox"/> Notify provider if symptoms worsen or if unresolved in ____ hours / days
<input type="checkbox"/> Other orders: _____

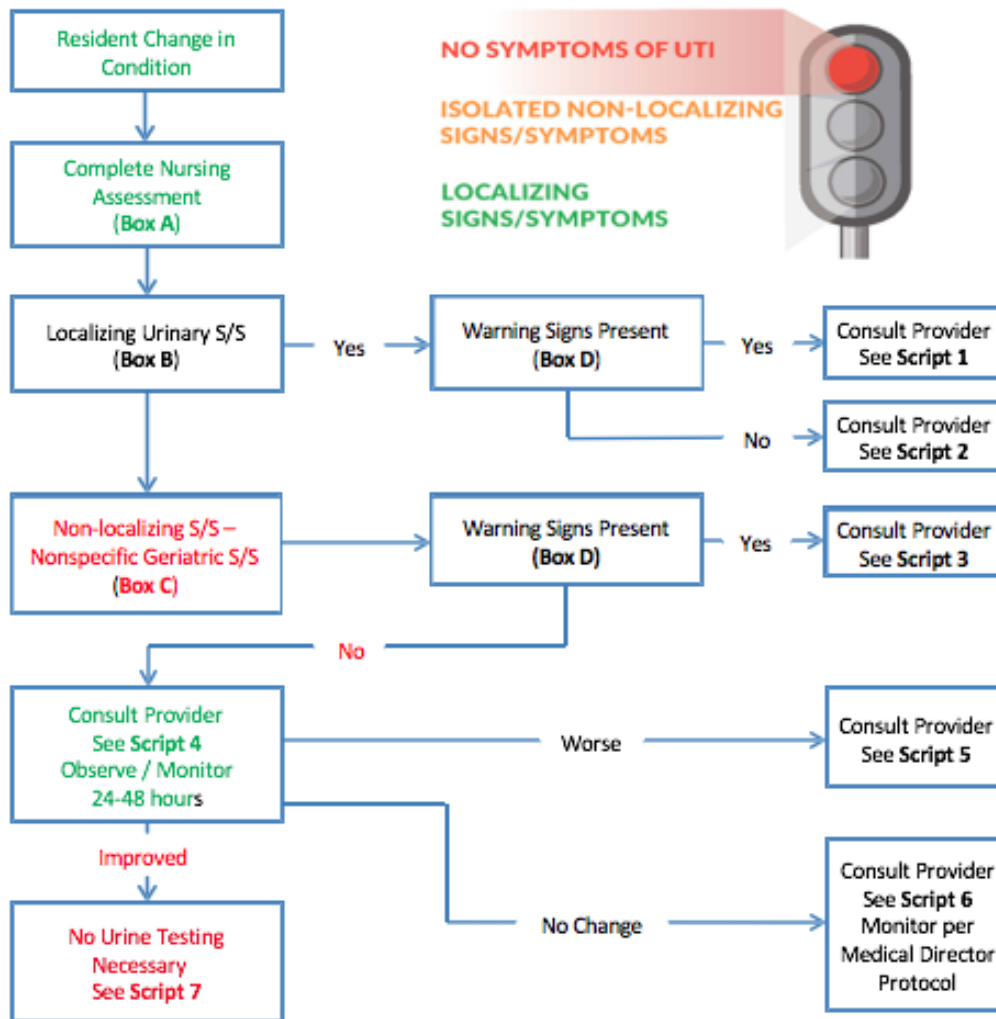


Why Active Monitoring?

- Rapidly detect any further deterioration that would require repeat conversation with provider and more aggressive intervention
- Provide additional information that might help identify the cause of change in condition (e.g., constipation, inadequately managed pain, etc.)
- Initiation of fluids may help correct dehydration which may be triggering the change in the first place
- Provides a talking point for conversations with family that reassures them that staff are keeping a very close eye on their loved one



When To Test – Nursing Tool



NO SYMPTOMS OF UTI

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LOCALIZING SIGNS/SYMPTOMS



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Summary – When to Test

- The WI UTI Toolkit can be employed to create a shared understanding of when to perform testing on urine samples
- Test the urine only when there are specific urinary tract signs or symptoms
- Develop/adopt an active monitoring temporary care plan to help nursing staff structure the management of residents who have a less concerning change in condition