

The 3 "Ss" of the Antibiotic Time-out

Stop



If another explanation for resident change-in-condition identified
OR
If urine culture is negative

Spectrum

NO RESISTANCE ON CULTURE

RESISTANCE ON CULTURE

De-escalate to narrow spectrum alternative (e.g., Nitrofurantoin, Trimethoprim/Sulfamethoxazole)

Change to an antibiotic with activity against organism recovered

Shorten

UNCOMPLICATED UTI

COMPLICATED UTI

Females: 3-7 days
Males: 7 days

TMP/SMX: 7-10 days
Beta-lactams: 7-10 days
Fluoroquinolones: 5-7 days

Active Monitoring

WHAT IS ACTIVE MONITORING?

It is a temporary care plan during which nursing staff more closely monitor the resident for signs and/or symptoms suggestive of infection. This includes:

- Obtaining additional labs (not urine tests, though!)
- Promoting fluid intake (IV/PO) if there is concern for dehydration
- Measuring vital signs at least once per shift
- Monitoring for and documenting development and/or worsening of localizing and non-localizing signs and symptoms (see spotlight figure)
- Contacting the provider if the resident's clinical status changes in meaningful ways (e.g., development of warning signs or new/worsening localizing /non-localizing signs/symptoms)

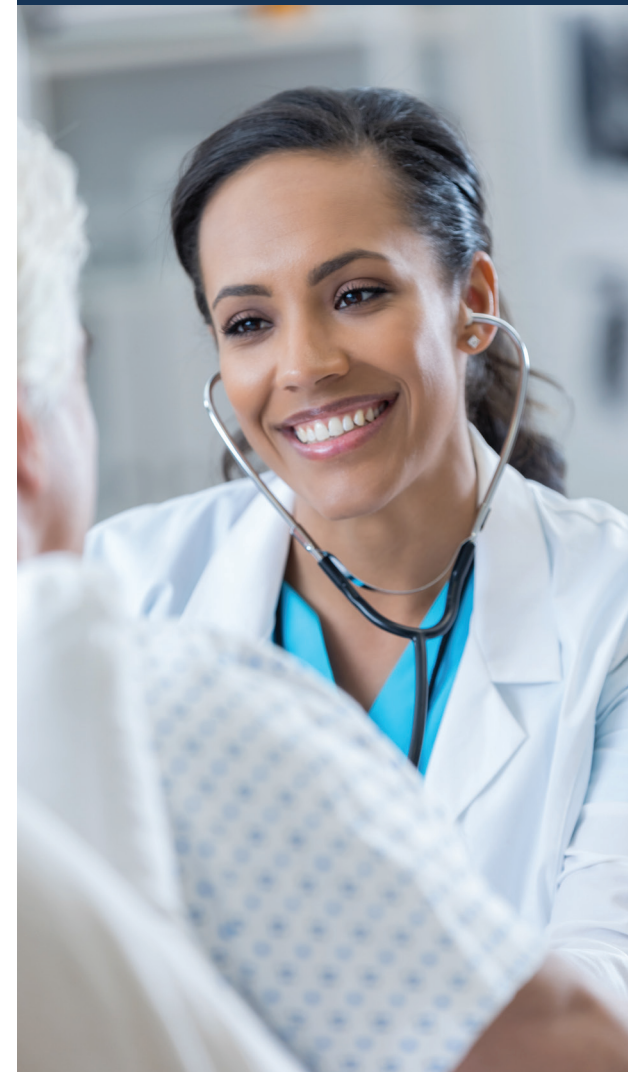
EXAMPLE OF A PHYSICIAN ORDER SET FOR ACTIVE MONITORING

- Obtain vital signs (BP, Pulse, Resp Rate, Temp, Pulse Ox) every ____ hours for ____ days.
- Record fluid intake each shift for ____ days.
- Notify physician if fluid intake is less than ____ cc daily.
- Offer resident ____ ounces of water / juice every ____ hours.
- Notify physician, NP, or PA if condition worsens, or if no improvement in ____ hours.
- Obtain the following blood work _____.
- Consult pharmacist to review medication regimen.
- Contact the physician, NP, PA with an update on the resident's condition on _____.

BENEFITS OF ACTIVE MONITORING

- Reduces unnecessary testing and antibiotics
- Allows rapid detection of any further deterioration that requires intensification of treatment plan
- Provides additional information that might help identify the cause of the original change in condition (e.g., dehydration)
- Helps reassure family that facility staff are keeping a close eye on their loved one

MANAGEMENT OF SUSPECTED UTI IN NURSING HOMES



When and When Not to Test

NO SYMPTOMS OF UTI

- Don't test or culture urine
- Don't treat with antibiotics if the resident doesn't have localizing signs/symptoms or warning signs
- Don't treat with antibiotics even if urine culture is positive

ISOLATED NON-LOCALIZING SIGNS/SYMPTOMS

- Initiate active monitoring
- Don't test or treat with antibiotics
- Consider testing and treatment with antibiotics if resident develops localizing urinary signs and symptoms

LOCALIZING SIGNS/SYMPTOMS

- Test if symptoms are severe or not resolving during observation
- Consider need for immediate antibiotic therapy and/or transfer to higher level of care if warning signs are present

LOCALIZING URINARY SIGNS/SYMPTOMS

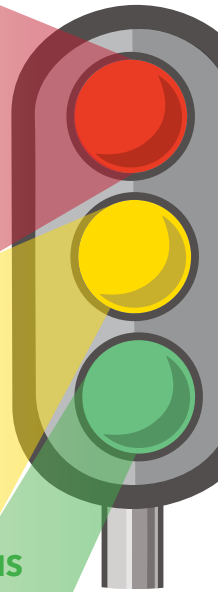
- Acute dysuria
- New or worsening urgency
- New or worsening incontinence
- Gross hematuria
- Suprapubic pain
- Costovertebral angle pain
- New scrotal/prostate pain
- Urethral purulence

NON-LOCALIZING SIGNS/SYMPTOMS

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

WARNING SIGNS

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



Uncomplicated Urinary Tract Infection (Cystitis)

- Urethral symptoms (dysuria, frequency) are predominant
- Signs of complication* are absent
- Can often wait for culture results before starting treatment
- Females can often be treated for less than 7 days depending on the agent used

* SIGNS OF COMPLICATION

- Fever
- Flank pain
- Rigor/chills
- Urinary catheter
- Hypotension/Tachycardia
- Elevated WBC

EMPIRIC TREATMENT OF UNCOMPLICATED CYSTITIS

Preference	Estimated Creatinine Clearance (eCrCl)		
	>30	15 - 30	<15
FEMALES			
First	Nitrofurantoin 100mg BID (5 days) OR TMP/SMX 160/800 BID (3 days)	TMP/SMX 80/400 BID (3 days)	Ciprofloxacin 250mg BID (3 days)
Second	Fosfomycin 3gm (Once) Re-dose on day 3 to extend treatment >3 days	Fosfomycin 3gm (Once) Re-dose on day 3 to extend treatment >3 days	Fosfomycin 3gm (Once) Re-dose on day 3 to extend treatment >3 days
Third	Ciprofloxacin 250mg BID (3 days)	Ciprofloxacin 250mg BID (3 days)	—

MALES

First	Nitrofurantoin 100mg BID (7 days) OR TMP/SMX 160/800 BID (7 days)	TMP/SMX 80/400 BID (7 days)	Ciprofloxacin 250mg BID (7 days)
Second	Fosfomycin 3gm (Dose on days 1, 3, 5)	Fosfomycin 3gm (Dose on days 1, 3, 5)	Fosfomycin 3gm (Dose on days 1, 3, 5)
Third	Ciprofloxacin 250mg BID (7 days)	Ciprofloxacin 250mg BID (7 days)	—

Complicated Cystitis or Pyelonephritis

- Signs of complication (see middle panel) are present
- Don't wait for culture results if resident has high fever, rigors or hypotension/tachycardia
- Use agents that provide high blood and urine levels (IV agents, TMP/SMX, and fluoroquinolones)

May need to extend therapy beyond 7 days if symptoms severe at onset or if resident is not back to baseline after 72 hours of effective therapy. See online module for more information.

EMPIRIC TREATMENT OF COMPLICATED CYSTITIS

RESIDENT HEMODYNAMICALLY STABLE & LOW CONCERN FOR RESISTANCE			
Preference	Estimated Creatinine Clearance (eCrCl)		
	>30	15 - 30	<15
First	TMP/SMX 160/800 BID (7-10 days)	TMP/SMX 80/400 BID (7-10 days)	Ciprofloxacin 250mg BID (5-7 days)
Second	Cefpodoxime 200mg PO BID (7-10 days) OR Cefuroxime 500mg PO BID (7-10 days)	Cefpodoxime 200mg PO QD (7-10 days) OR Cefuroxime 500mg PO QD (7-10 days)	Cefpodoxime 200mg PO QD (7-10 days) OR Cefuroxime 500mg PO Q48 ^o (days 1, 3, 5, & 7)
Third	Ciprofloxacin 500mg BID (5-7 days)	Ciprofloxacin 250mg BID (5-7 days)	—

RESIDENT ILL (BUT NOT ENOUGH TO HOSPITALIZE) AND/OR CONCERN FOR TMP/SMX AND/OR CIPROFLOXACIN RESISTANCE

Culture Results Unknown

First-Line: Ceftriaxone 1gm q24
 Second-Line: Gentamicin 5 mg/kg q24
 +/- Vancomycin 1gm q12

Culture Results & Susceptibilities Known

Culture Result	1st Line	2nd Line	3rd Line
Non-Pseudomonal Gram-Negative (e.g. <i>E. coli</i>)	TMP/SMX	Cefpodoxime/ Cefuroxime	Ciprofloxacin
<i>Pseudomonas</i> sp.	Ciprofloxacin	Levofloxacin	—
<i>Staphylococcus</i> sp.	TMP/SMX (MSSA or MRSA)	Cephalexin (MSSA only)	—
<i>Enterococcus</i> sp.	Amoxicillin	Doxycycline	—