Assessment and Management of the Resident With a Suspected Urinary Tract Infection | Agency for Healthcare Research and Quality (ahrq.gov)

Assessment of the Resident iwth Suspected UTI in LTC

Treatment if UTI in LTC

Asymptomatic Bacteriuria One Pager (ahrq.gov)

Antibiotic Side Effects (ahrq.gov)

Talking With Residents and Family Members About Urinary Tract Infections (UTIs) (ahrq.gov)

Four Moments of Antibiotic Decision Making Form (ahrq.gov)

one-pager-UTI.docx (live.com)

Develop and Improve Your Stewardship Program | Agency for Healthcare Research and Quality (ahrq.gov)

Toolkit To Improve Antibiotic Use in Long-Term Care | Agency for Healthcare Research and Quality (ahrq.gov)

CDPHE — Antimicrobial Stewardship in Colorado | Department of Public Health & Environment

Case 3: Shirley

- Shirley fell while getting up to go to the bathroom
- Sent to the emergency department (ED) for evaluation and x rays
  - X rays were normal
- The ED sent a urinalysis (UA)
  - UA returned positive with >100 WBCs/hpf, positive nitrites, and positive leukocyte esterase
- ED sent her back to the facility with a prescription for a 7-day course of ciprofloxacin

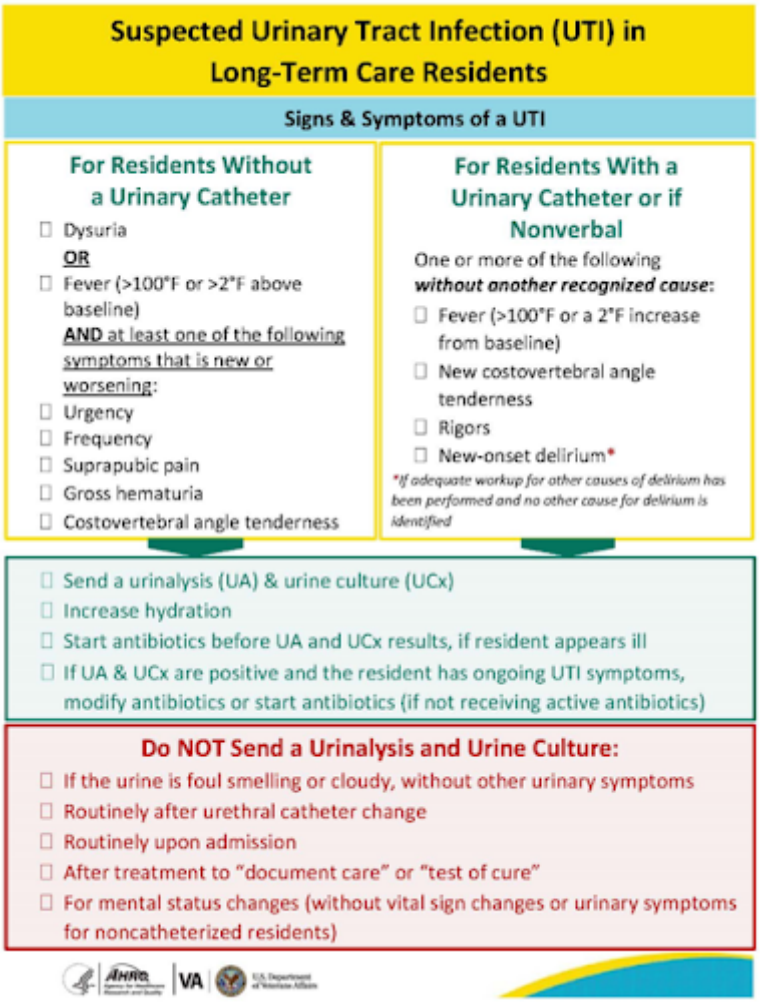
- Had not complained of any urinary symptoms the day before her fall
- Still reports no urinary symptoms
- Says that she got up to go to the bathroom and tripped over her call button
- Does not report fatigue, fever, chills, or any other issues

Together, Shirley and her health care team agree to stop the antibiotic.

Important To Understand

- Changing the plan does not reflect poorly on the prescribing clinician.
- All antibiotic prescriptions that come from the hospital should be re-evaluated when the resident transfers to long-term care.

- If you are worried about a urinalysis or urine culture result, visit the resident and determine if he/she has symptoms.
- If the resident is asymptomatic, a positive urine culture indicates asymptomatic bacteriuria rather than infection.
- Treating a resident for asymptomatic bacteriuria can lead to harmful side effects.
- Urinalysis and urine culture should only be sent if the resident is symptomatic, NOT if urine appears cloudy, dark, or smelly.
- We treat people, not laboratory results!



Common Antibiotics Used To Treat UTIs[2,3]

Antibiotic	Route	Information About Antibiotic	Most Common Adverse Events/Notes
TMP-SMX (Bactrim)	Oral	Concentrates in urinary tract	Hyperkalemia, rash, warfarin interaction
Nitrofurantoin (Macrobid)	Oral	Urinary tract only; few short-term systemic effects	Only use for 5 days to avoid side effects
Cefazolin/ Cephalexin	IV/oral	Less data for use in UTIs; excreted by kidneys into the urinary tract system	Rash
Ampicillin/ Amoxicillin	IV/oral	Less data for use in UTIs; excreted by kidneys into the urinary tract system	Rash
Fosfomycin	Oral	Concentrates in bladder, associated with diarrhea	Most Gram-negative organisms besides *E. coli* are resistant to fosfomycin; expensive
Ciprofloxacin	Oral	Broad-spectrum; fairly high level of resistance	Tendonitis, confusion, QTc prolongation; strong association with *C. difficile* infection; warfarin interaction

- Uncomplicated cystitis
  - Female, no catheter, no stones
  - A 3- to 5-day course is sufficient
- Complicated UTI
  - Male, catheter, possible stones, urological abnormalities
  - Prescribe a 7- to 14-day course

Follow up initial urine culture results and adjust therapy based on antibiotic sensitivities

- Urine culture results: organism is resistant to every antibiotic tested except meropenem
- Melba still has dysuria and some incontinence
  - No fevers
  - Vital signs otherwise normal
  - Eating well
- Consider fosfomycin

- For resistant and uncomplicated infections, consider fosfomycin
  - One 3-gram dose is sufficient to treat uncomplicated cystitis
  - Fosfomycin can be considered for *E. coli,* but since most Gram-negative organisms are resistant to fosfomycin, it may not be effective for other Gram-negative organisms including *Klebsiella* species and *Pseudomonas aeruginosa*
  - Can cause diarrhea

Key Points

- Choose the most narrow-spectrum antibiotic based on cultures to treat UTIs
- Fluoroquinolones should be avoided as an empiric choice due to resistance and side effects
- Antibiotics should be continued for 3–5 days for uncomplicated cystitis and 7–14 days for complicated UTI depending on response
- Follow up culture results (even from the hospital) and narrow or stop treatment accordingly

Asymptomatic Bacteriuria

Diagnosis

- Asymptomatic bacteriuria (ASB) is a positive urine culture from a person with NO symptoms of a urinary tract infection (UTI) such as dysuria, frequency, urgency, fever, or flank pain.
- ASB is common and often associated with pyuria (urine containing ≥10 white blood cells per high-powered field).

Population	Prevalence of ASB	Prevalence of Pyuria in Persons With ASB
Female long-term care residents	25–50%	90%
Male long-term care residents	15–35%	90%
Women > 90 years old	22–43%	
Women 65–90 years old	6–16%	
Healthy premenopausal women	< 5%	32%
Women with diabetes	9–27%	70%
Men with diabetes	1–11%	
People receiving hemodialysis	28%	90%
Presence of indwelling urinary catheter	>90%	50–100%

Treatment

- The majority of people with ASB and/or asymptomatic pyuria SHOULD NOT be treated with antibiotics.
- Treatment of ASB does not prevent future UTIs.
- Treatment of ASB is associated with adverse events related to antibiotic use and can increase the likelihood of developing future UTIs that are antibiotic resistant.
- Exception relevant to long-term care
  - Individuals with ASB about to undergo urologic procedures in which mucosal bleeding is expected (not including urinary catheter placement)
    - A short treatment course (<3 days) may prevent urosepsis.

Frequently Asked Questions

- How can I prevent unnecessary treatment of asymptomatic bacteriuria?
  - Do not order urine cultures unless a resident has signs and symptoms of a UTI.
    - This includes residents undergoing preoperative evaluations or residents with urinary catheters.
- What should I do for residents with dark or foul-smelling urine?
  - Dark, foul-smelling, or cloudy urine most likely indicates dehydration; therefore, encourage hydration.
- What should I do for residents with a change in mental status?
  - There are many reasons for a change in mental status that are not related to UTIs. Assess for dehydration, pain, change in medications, poor sleep, constipation, and mood disorders.