

# Diagnosis & Management of Urinary Tract Infection (UTI) in Residential Care

## KEY MESSAGES

- Diagnosis of UTI requires a combination of reliable clinical signs and symptoms AND a positive urine culture result.
- Do NOT send urine for culture or perform urine dipstick testing in patients who are asymptomatic.
- Asymptomatic bacteriuria (abnormal dipstick or urine culture without signs/symptoms of UTI) in the institutionalized elderly is common. Antibiotic therapy in these cases offers no benefit and increases harm (e.g. side effects from antibiotics, antibiotic resistance, *Clostridium difficile* infection).
- Empiric therapy for UTI can be considered if the patient has clinical signs and symptoms consistent with a UTI and appropriate urine specimens (midstream or in/out catheter) have been obtained and sent for urinalysis and culture.

## DIAGNOSIS

- Obtain urine for **urine culture**.
- Urine should be a mid-stream urine or obtained by in/out catheterization.
- Send urine promptly to the laboratory or store urine at 4°C until it can be sent



### Suspected UTI based on **signs and symptoms**

Dysuria, suprapubic tenderness, frequency, urgency, fever > 37.8°C, new onset incontinence, hematuria

\* Malodorous urine is NOT a sign/symptom of UTI and is not an indication for urine culture

\*\* Delirium or change in behavior is not specific and warrants investigation for an underlying cause. UTI should not be an automatic presumptive diagnosis. ↻

### Interpreting Laboratory Results

**Microscopy/Dipstick** is NOT generally indicated in the elderly because of poor diagnostic accuracy. We do NOT encourage the routine use of urine microscopy/dipstick in this population. If the urine dipstick is done for special circumstances, the parameters listed below should be interpreted with the clinical context:

#### **White blood cells (WBC)**

- Absence of WBC indicates no inflammation and culture is unlikely to indicate UTI
- Presence of WBC represents inflammation
- Often elevated in the presence of a catheter irrespective of infection

#### **Red blood cells (RBC)**

- RBC may be present in UTI

#### **Leukocyte esterase**

- Indicates WBC are present

#### **Nitrite**

- Measures nitrate reductase which is produced by many Gram negative uropathogens

**Urine Culture** (the following usually indicates UTI but this must be interpreted in the context of patient's symptoms)

Single uropathogen ≥ 100 million CFU/L  
**OR**

Mixed Growth with one predominant uropathogen ≥ 100 million CFU/L for specimens obtained from a foley catheter

**OR**

Two uropathogens each ≥ 100 million CFU/L for specimens obtained from a foley catheter

## MANAGEMENT

Empiric treatment may be considered for **SYMPTOMATIC** patients after sending urine for urinalysis and culture. MODIFY treatment according to urine culture results. ↻

### Uncomplicated cystitis

- **Nitrofurantoin 100 mg long acting PO BID x 5 days**
  - Contraindicated in those with CrCl below 40 mL/min
  - Should not be used if pyelonephritis is suspected (fever; flank pain)
  - Should not be used in those with a known history of infection with *Proteus* or *Pseudomonas spp.*
- **Cotrimoxazole DS tablet PO BID x 3 days**
  - Does not cover *Enterococcus spp.*
- **Amoxicillin-Clavulanate 875-125 mg PO BID x 5 days**

### Complicated UTI (those with Foley catheters or evidence of pyelonephritis)

- **Cotrimoxazole DS tablet PO BID x 7 days**
- **Amoxicillin-Clavulanate 875-125 mg PO BID x 7 days**

If symptoms do not resolve promptly (within 5 days), consider prolonging therapy to 10-14 days or consider transferring to acute care.

\*\* **Catheter should be removed or replaced if a catheter is needed.**

Patients with suspected urosepsis should be transferred to acute care.

Based on local epidemiology of UTI in residents of PHC facilities, **ciprofloxacin should NOT** be used for empiric treatment of UTI.