

## URINARY TRACT INFECTIONS

### Acute Pyelonephritis in Adults / Upper UTI

- Define as:
  - ✓ Patients with pyelonephritis usually have
    - **flank/ loin pain**
    - **vomiting**
    - **rigors or fever of  $\geq 38^{\circ}\text{C}$  or  $<36^{\circ}\text{C}$**
    - **kidney tenderness**
  - ✓ Patients with lower urinary tract symptoms and signs of systemic infection.
  - ✓ Patients with known or possible structural or functional abnormalities of the urinary tract and signs of systemic infection.
- Send a pre-treatment MSU sample and review empirical treatment with the result. ([See Diagnosis of UTI in Adults - Quick Reference](#)).
- Advise patients to represent for admission if they have no response to treatment within 24 hours or their condition deteriorates.
- If multi-resistant infection with no suitable oral options and are systemically well, consider referral for IV antibiotics as an outpatient (OPAT).
- If signs and symptoms are limited to dysuria, new nocturia, and/or cloudy urine, then see [Lower UTI/Cystitis Guideline](#).

#### Antibiotic Treatment:

Drug	Dose	Duration of Treatment
<b>First line:</b> Cefalexin (not suitable in severe penicillin allergy)	1g three times a day	7-10 days
<b>Second line:</b> Trimethoprim ( <i>only if lab report shows sensitive strain</i> )	200mg BD twice a day	14 days
<b>Third line (if severe penicillin allergy):</b> <a href="#">Ciprofloxacin</a> <sup>^</sup>	500mg twice a day	7 days
<sup>^</sup> <b>Note:</b> Fluoroquinolones should only be used when other antibiotics are inappropriate. If a penicillin allergy is recorded, the exact nature of the reaction should be clarified including whether other beta lactams (e.g., cephalosporins) have been previously tolerated. Fluoroquinolones can cause long-lasting (up to months or years) disabling, and potentially irreversible side effects, sometimes affecting multiple systems, organ classes, and senses. Please refer <a href="#">here</a> for further information on MHRA alerts.		

- For pregnant patients, see [UTI in Pregnancy](#).
- For children, see [UTI in Children](#).
- For information on complicated UTIs, see [Complicated UTIs](#).
- The [TARGET antibiotics toolkit hub](#) includes leaflets to discuss with patients, [diagnostic tools](#), and other UTI resources.