### Diagnosis
- Symptoms (see “Typical symptoms of UTI” box)
- Diagnostic tools (see “Diagnostic tools” box)
- Previous response to treatment for episodes of acute UTI

You can consider diagnosis of UTI if patient has a strong symptom profile, even in the absence of culture-positive urine or dipstick confirmation.

### Typical symptoms of UTI
- Dysuria
- Frequency
- Suprapubic tenderness
- Urgency
- Polyuria
- Haematuria

Note: elderly patients may not be able to provide a history of acute urinary symptoms due to delirium or dementia and may present with confusion alone.

### Diagnostic tools
- Dipstick (do not use for catheterised patients or asymptomatic patients)
- Midstream urine culture (add clinical details to request form)
- Urine microscopy
- Consider urinary tract ultrasound (including post-void residual volume) in Proteus infections and non-responders
- Cystoscopy

### Patient with recurrent UTI (confirmed by clinical history, diagnostic tools, two UTIs in past 6 months or three UTIs in past 12 months)

#### Uncomplicated recurrent UTI
- No structural or functional abnormality of the urinary tract
- Non-pregnant women
- Typical causative pathogen(s)

#### Complicated recurrent UTI
- Pregnant women
- Men
- Structural or functional abnormality of the urinary tract
- Atypical infections (e.g. tuberculosis or schistosomiasis)
- Resistant bacteria

### Lifestyle modifications
- Increase fluid intake in patients with inadequate fluid intake
- Treat constipation/diarrhoea
- Advise post-coital voiding
- Optimise diabetic control

### Complications or red flag
- Persistent haematuria

### Referral for suspected cancer

### Consider specialist referral according to local pathways

### Symptoms persist

### Treatment options (all options may be used in combination other than multiple antibiotics)

#### Antibiotics (refer to NICE/BNF for dosing and consider local antimicrobial guidelines)

**First line**
- Trimethoprim
- Nitrofurantoin

**Second line**
- Amoxicillin
- Cefalexin

#### Non-antibiotic treatments
- Vaginal oestrogens, via cream, ring, or pessary
- Methenamine hippurate (1 g twice daily)
- Vaccines, where available

#### Non-pharmacological treatments
- Cranberry (optimum dose and preparation not established)
- D-mannose (2 g in divided doses)

#### Continuous prophylaxis
- Trimethoprim: 100 mg at night
- Nitrofurantoin: 50–100 mg at night (optimum dose not established)
- Amoxicillin 250 mg at night
- Cefalexin: 125–250 mg at night

#### Single-dose (post-coital) prophylaxis
- Trimethoprim: 100 mg
- Nitrofurantoin: 50–100 mg (optimum dose not established)
- Amoxicillin 250 mg
- Cefalexin: 125 mg

#### Self-start antibiotics (3–5 day course)
- Trimethoprim: 200 mg twice daily
- Nitrofurantoin: 50–100 mg four times daily
- Amoxicillin 250–500 mg three times daily
- Cefalexin: 500 mg three times daily

### Follow up
- Review response to treatment by 6 months or sooner

#### Symptoms persist
- Check adherence to therapy
- Check for antibiotic resistance

#### Consider referral for specialist review
- Patient preference
- New symptoms, including new red flags

#### Possible treatment options
- Intravesical glycosaminoglycan layer therapies
- Intravesical antibiotics
- Surgery

#### Infection free by 3–6 months based on symptoms and/or microbiology
- Consider withdrawal of treatment, especially antibiotics

#### Symptoms recur
- Review response to treatment by 6 months or sooner