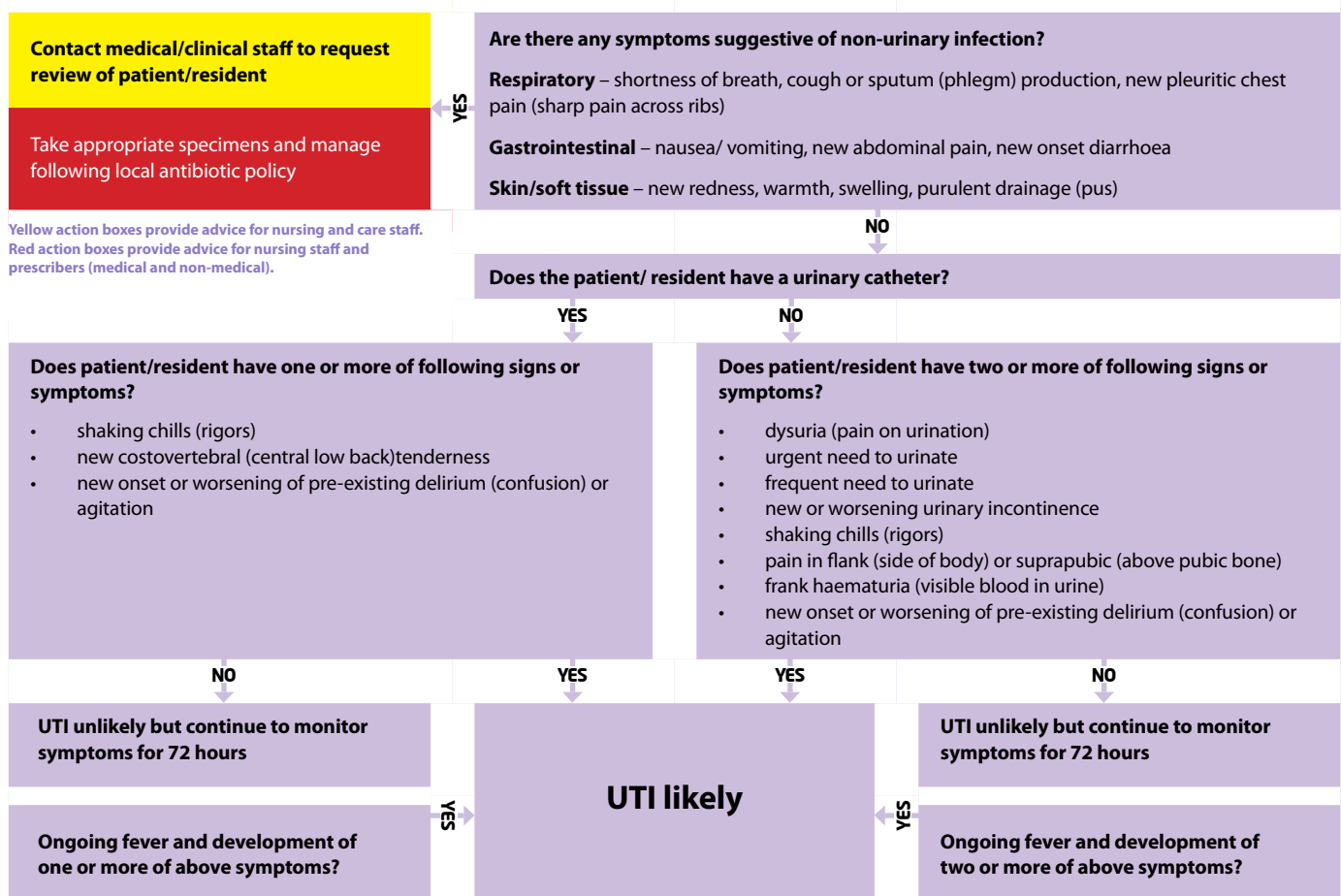


## Decision aid for diagnosis and management of suspected urinary tract infection (UTI) in older people

This flowchart has been designed to help nursing and care staff and prescribers manage patients/residents with urinary tract infection. If a patient/resident has a fever (defined as temperature > 37.9°C or 1.5°C increase above baseline occurring on at least 2 occasions in last 12 hours) this suggests they have an infection. Hypothermia (low temperature of <36°C) may also indicate infection,

especially in those with co-morbidities (heart or lung disease, diabetes). Some patients/residents may also have non-specific symptoms of infection such as abdominal pain, alteration of behaviour, delirium (confusion) or loss of diabetes control. The information overleaf provides good practice points and evidence sources for prescribers.



Yellow action boxes provide advice for nursing and care staff. Red action boxes provide advice for nursing staff and prescribers (medical and non-medical).

### Contact medical/clinical staff to request review of patient/resident

- Assess if retention or sub-acute retention of urine is likely – blocked catheter or distended bladder
- DO NOT use dipstick test in diagnosis of UTI in older people
- Obtain a sample for urine culture and send to Microbiology
- Start antibiotic therapy following local policy or as advised by Microbiology
- If patient has a urinary catheter, remove and replace it. Consider the ongoing need for a long term catheter in consultation with specialists.
- Consider use of analgesia (paracetamol or ibuprofen) to relieve pain
- Consider admission to hospital if patient has fever with chills or new onset hypotension (low blood pressure)
- Review response to treatment daily and if no improvement of symptoms or deterioration, consider admission to hospital or an increased level of care
- Ensure urine culture results are reviewed when available in order to streamline antibiotic therapy

## Good practice points

### Urine culture

- Older people often have asymptomatic bacteriuria (no symptoms but bacteria in urine) which does not indicate infection.
- Do not send catheter specimens of urine (CSU) unless patient has signs and symptoms of infection as CSU samples will almost always have bacteriuria (bacteria in urine).
- Review urine culture results to check organism is sensitive to antibiotic prescribed and change to an alternative antibiotic if necessary.
- Interpretation of the urine culture results – high epithelial cell count or heavy mixed growth may indicate contamination. Ensure correct sampling process is followed and take repeat urine sample if clinically indicated.
- Be alert to UTI due to resistant organisms such as Extended Spectrum Beta-Lactamase *E. coli*. Microbiology will provide advice on treatment options. In patients with a previous ESBL UTI discuss with Microbiology the potential treatment options should the patient become symptomatic again.
- Do not send urine samples for post-antibiotic checks or clearance of infection.

### Antibiotic therapy

- Older people are vulnerable to infection, particularly *Clostridium difficile* infection, therefore use of broad spectrum antibiotics such as ciprofloxacin, co-amoxiclav and cephalosporins should be avoided if possible.
- First choice antibiotics for uncomplicated lower UTI in non-catheterised patients are trimethoprim 200mg twice daily or nitrofurantoin 50mg four times daily (or nitrofurantoin MR 100mg twice daily). Recommended course duration is three days for women and seven days for men.
- BNF suggests avoid nitrofurantoin if eGFR < 45ml/min/1.73m<sup>3</sup> but can be used with caution if GFR 30-44ml/min/1.73m<sup>3</sup> as a short course only (3-7 days).
- In men, if there is clinical suspicion of acute prostatitis (suggested by fever and pain at the base of the penis, around the anus, just above the pubic bone and/or in the lower back), a 28 day course of ciprofloxacin or ofloxacin is recommended. Trimethoprim may be used if the organism is sensitive.
- In catheterised patients with symptoms of UTI, a seven day course of antibiotics, following local antibiotic guidelines is recommended in both men and women. The catheter should be removed then replaced if necessary.
- Second choice antibiotics should always be guided by urine culture and history of antibiotic use.

### Prophylaxis of UTI

- The evidence base supporting antibiotic use for prophylaxis of UTI is **not strong**; all studies were conducted pre-2000 and none evaluated patients beyond one year.
- Female patients who do not have a catheter and have more than three UTIs within a 12 month period **may** be considered for a trial of nightly antibiotic prophylaxis with trimethoprim or nitrofurantoin. The risk of adverse effects versus the potential benefit needs to be considered carefully.
- Long term antibiotics prescribed for UTI prophylaxis do promote resistance and there is no evidence to support their use beyond 6-12 months. Therefore ongoing clinical need should be reviewed after 6 months.
- Cranberry products may be considered as an alternative but evidence of their efficacy is lacking.
- In post-menopausal women consider the possibility of recurrent symptoms being associated with vaginal atrophy.

### References

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