Diagnosis of urinary tract infections: quick reference tool for primary care

**Flowchart for men and women over 65 years with suspected UTI**

<table>
<thead>
<tr>
<th>Urinary signs/symptoms, abnormal temperature, non-specific signs of infection&lt;sup&gt;8A-, 26A-, 30A-, 48A-&lt;/sup&gt;</th>
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**Do not perform urine dipsticks**

Dipsticks become more unreliable with increasing age over 65 years. Up to half of older adults, and most with a urinary catheter, will have bacteria present in the bladder/urine without an infection. This "asymptomatic bacteriuria" is not harmful, and although it causes a positive urine dipstick, antibiotics are not beneficial and may cause harm.

**THINK SEPSIS - check for signs/symptoms using local or national tool**

Such as NICE, RCGP or NEWS2<sup>2</sup>

**CHECK for signs/symptoms of pyelonephritis**

- kidney pain/tenderness in back, under ribs<sup>13A-, 14C</sup>
- new/different myalgia, flu-like illness<sup>13A-, 14C</sup>
- nausea/vomiting<sup>3B-, 30A-, 14C</sup>
- shaking chills (rigors)<sup>3B-, 30A-, 14C</sup>
- OR temp over 37.9°C or 36°C or below

**CHECK ALL FOR NEW signs/symptoms of UTI**

- new onset dysuria alone<sup>3B-, 30A-, 16C</sup>
- OR two or more:
  - temperature 1.5°C above patient’s normal twice in the last 12 hours<sup>3B-, 30A-, 16C</sup>
  - new frequency or urgency<sup>3B-, 30A-, 16C</sup>
  - new incontinence<sup>3B-, 30A-, 20A-</sup>
  - new or worsening delirium/debility<sup>3B-, 30A-, 16C</sup>
  - new suprapubic pain<sup>3B-, 30A-, 16C</sup>
  - visible haematuria<sup>3B-, 30A-, 16C</sup>

If fever and delirium/debility only: consider other causes before treating for UTI (*see box below)<sup>20A-</sup>

If urinary catheter: also check for catheter blockage AND consider catheter removal or replacement<sup>3B-, 24A-</sup>

Consider Genitourinary Syndrome of Menopause (vulvovaginal atrophy), urethritis, sexually transmitted infections, and prostatitis<sup>3D, 25C</sup>

**CHECK for other causes of delirium if relevant (PINCH ME)**

- P: Pain
- I: other Infection
- N: poor Nutrition
- C: Constipation
- H: poor Hydration

**CHECK ALL for other localised symptoms/signs**

- Two or more symptoms or signs of:
  - respiratory tract infection
  - gastrointestinal tract infection
  - skin and soft tissue infection

Advise “watchful waiting” with further investigation for other causes

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**Consider sepsis OR pyelonephritis**

- if urinary catheter: consider changing or removing before starting antibiotics<sup>15C, 16C</sup>
- send urine for culture<sup>3A+, 17B, 16A+</sup>
- immediately start antibiotic/management for upper UTI/sepsis using NICE/PHE guideline on pyelonephritis: antimicrobial prescribing or local/national guidelines for sepsis, and considering resistance risk<sup>16A+</sup>
- refer if signs/symptoms of serious illness or condition<sup>16C, 11A+, 12C, 14C, 15A+</sup>

**UTI LIKELY**: share self-care and safety-netting advice using TARGET UTI leaflet<sup>22D, 23B+</sup>

- always send urine culture if feasible before starting antibiotics, as greater resistance in older adults<sup>3A+, 17B, 24A+, 26A+</sup>
- if mild symptoms consider back-up antibiotics in women without catheters and low risk of complications<sup>24A+, 26A+, 27B+</sup>
- offer immediate antibiotics using NICE/PHE guideline on lower UTI: antimicrobial prescribing<sup>16A+, 26A+</sup>
- review antibiotic choice and culture result

If indwelling urinary catheter for over 7 days

- consider changing (if possible remove) catheter as soon as possible (before giving antibiotic)<sup>15C, 16C, 24A+</sup> and send MSU or urine from new catheter for culture<sup>24A+</sup>

**Consider other local/national resources for delirium management**<sup>36C</sup>

Give safety-netting advice about consulting if:

- worsening symptoms<sup>24A+, 26A+</sup>
- signs of pyelonephritis<sup>24A+, 26A+</sup>
- any symptom/sign of sepsis<sup>24A+, 26A+</sup>

Follow local diagnostic and treatment guidance

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Key:

- Suspected sepsis alert
- UTI symptom
- Action advised
- Other advice

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## Table summary of flowchart for those over 65 years with suspected UTI

### Men and women over 65 years may present with:
- Localised signs or symptoms of a UTI including new onset dysuria; incontinence; urgency 
  - □ temperature: 38°C or above; 36°C or below; 1.5°C above normal twice in the last 12 hours 
  - □ non-specific signs of infection: for example delirium; loss of diabetic control
- Do not perform urine dipstick as they become more unreliable with increasing age over 65 years
  - □ up to half of older adults in long term care facilities, and most of those who have had a urinary catheter for over 30 days, will have bacteria present in the bladder/urine without an infection
  - □ this so called asymptomatic bacteriuria is not harmful, and although it causes a positive urine dipstick, antibiotics are not beneficial
  - □ this so called asymptomatic bacteriuria is not harmful, and although it causes a positive urine dipstick, antibiotics are not beneficial

### Use symptoms and signs to determine the most appropriate management

#### First think sepsis: check for signs using local or national tool such as NICE, RCGP or NEWS2

#### Exclude pyelonephritis checking for any 1 sign:
- □ kidney pain/tenderness in back, under ribs
- □ new/different myalgia, or flu-like symptoms
- □ nausea/vomiting
- □ shaking chills (rigors) or temp over 37.9°C or 36°C or below

### If signs of sepsis or pyelonephritis

(If no kidney pain rule out other localised infection *see symptoms of other infection box below*):
- □ if urinary catheter for more than 7 days: consider changing or removing as soon as possible and before starting antibiotics
- □ send urine for culture
- □ assess antibiotic resistance risk and immediately start antibiotic for upper UTI/sepsis using NICE/PHE guideline on pyelonephritis: antimicrobial prescribing or local/national guidelines for sepsis
- □ refer if signs or symptoms of serious illness or condition

### Then check all for NEW URINARY symptoms/signs

- □ NEW onset dysuria alone
- □ OR 2 or more new:
  - □ temperature: 1.5°C above normal twice in the last 12 hours
  - □ new frequency or urgency
  - □ new incontinence
  - □ new or worsening delirium/debility
  - □ new suprapubic pain
  - □ visible haematuria
  - □ If fever and delirium/debility only: consider other infections before treating for UTI

### If urinary symptoms suggest UTI:

- □ always send urine culture if feasible, as greater resistance in women without catheters and low risk of complications
- □ consider immediate antibiotics for lower UTI
- □ for antibiotic choice use NICE/PHE guideline on lower UTI: antimicrobial prescribing, and consider antibiotic resistance risk using patient history

### If indwelling URINARY CATHETER for over 7 days:

- □ check for catheter blockage AND consider catheter removal
- □ if treating for a UTI consider changing or removal as soon as possible and before giving antibiotics
- □ send sample from mid-stream urine or urine from new catheter

#### Consider:
Genitourinary Syndrome of Menopause (vulvovaginal atrophy) as can present with dysuria. Also consider risk of urethritis, prostatitis or STI

#### Check all for 2 or more signs or symptoms suggesting other infection

- □ respiratory tract infection: shortness of breath; cough or sputum production; new pleuritic chest pain
- □ gastrointestinal tract infection: nausea/vomiting; new abdominal pain; new onset diarrhoea
- □ skin and soft tissue infection: new redness; warmth

Follow diagnostic and treatment guidance if infection suspected

### Check all for other causes of DELIRIUM (PINCH ME) and manage as needed

- □ P: Pain
- □ I: other Infection
- □ N: poor Nutrition
- □ C: Constipation
- □ H: poor Hydration
- □ M: other Medication change
- □ E: Environment change

- □ using PINCH ME can help identify other potential underlying causes of delirium superimposed on dementia. It can be used in different clinical settings
- □ consider other local/national resources for delirium management
- □ Advise watchful waiting, with further investigation if needed

Share self-care and safety-netting advice using TARGET UTI leaflet for older adults

#### Safety-netting advice

- □ drink enough fluids to avoid feeling thirsty and to keep urine pale
- □ taking paracetamol regularly up to 4 times daily for relief of pain or fever
- □ ways of preventing further episodes of UTI

#### Pleas refer to the information and reference tables in joint NICE/PHE guidance: NICE guidelines on UTI (lower): antimicrobial prescribing or NICE guidelines on pyelonephritis (acute): antimicrobial prescribing