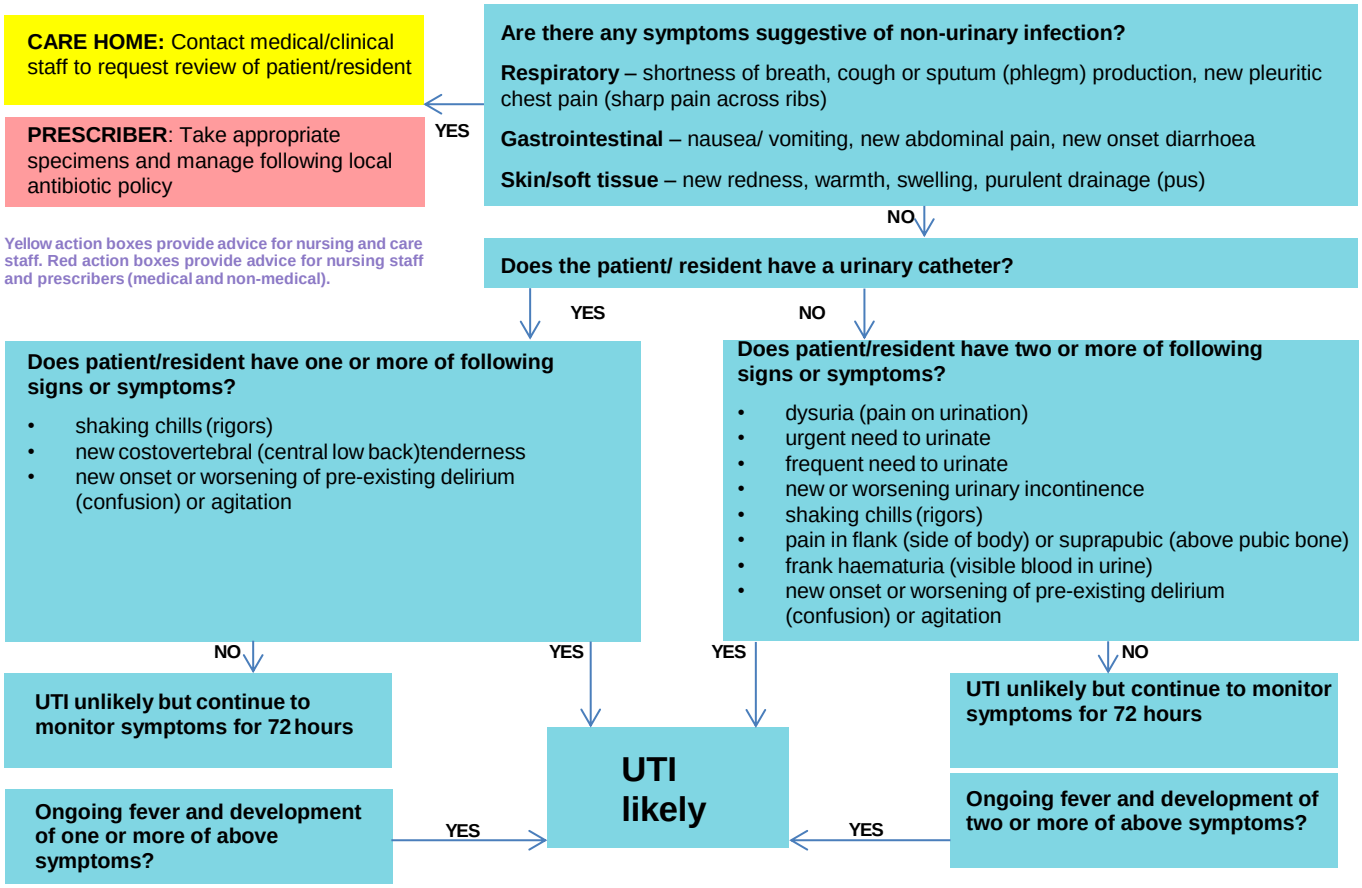
HSC Public Health Agency

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 the last 12 hours) this suggests they have an infection.

Hypothermia (low temperature of <36°C) may also indicate infection, especially in those with long-term health conditions (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. **The checklist will help care home staff collect information for discussion with clinical staff.**



CARE HOME: Contact medical/clinical staff to request review of patient/resident

PRESCRIBER:

- **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**

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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

- If antibiotics are required, prescribers should refer to the most recent version of the Northern Ireland Management of Infection Guidelines for Primary Care, available online here.
- Older people are vulnerable to *Clostridium difficile* infection, therefore use of broad spectrum antibiotics such as ciprofloxacin, co-amoxiclav and cephalosporins should be avoided if possible.
- 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.

Acknowledgement: This decision aid was adapted with permission from the Scottish Antimicrobial Prescribing Group's document, which is available online at: https://www.scottishmedicines.org.uk/SAPG/Urinary_Tract_Infections

References

1. Lohfeld L, Loeb M, Brazil K, Evidence-based clinical pathways to manage urinary tract infections in long-term care facilities: a qualitative case study describing administrator and nursing staff views. J Am Med Dir Assoc 2007; 8: 477–484
2. Loeb M, Brazil K, Lohfeld L, McGeer A, Simor A, Stevenson K, et al. Effect of a multifaceted intervention on number of antimicrobial prescriptions for suspected urinary tract infections in residents of nursing homes: cluster randomised controlled trial. BMJ 2005;331(7518):669.
3. Scottish Intercollegiate Guideline Network, Guideline 88 Management of Bacterial Urinary Tract Infection http://www.sign.ac.uk/pdf/sign88.pdf
4. Health Protection Agency, Diagnosis of UTI – Quick Reference Guide for Primary Care http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1194947404720
5. Health Protection Agency, Management of Infection Guidance for Primary Care, http://www.hpa.org.uk/webc/HPAwebFile/HPAweb_C/1279888711402

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Decision aid for diagnosis and management of suspected urinary tract infection (UTI) in older people: checklist to be used alongside flow chart

Resident's name		**Date of birth**
Completed by		**Date completed**
Temperature >37.9°C or <36°C on two occasions in 12 hour period	1. Temperature _____ Date _____ Time _____ 2. Temperature _____ Date _____ Time _____	
If there is any likely cause of infection other than urinary tract, request clinical/medical review		
If the person has a catheter does he/she have any one of:	Shaking chills (rigors) ☐ New central low back (costrovertebral) tenderness ☐ New or worsening of pre-existing confusion or agitation ☐	
If the person does not have a catheter does he/she have at least two of:	Pain on urination (dysuria) ☐ Urgent need to urinate ☐ Frequent need to urinate ☐ New or worsening urinary incontinence ☐ Shaking chills (rigors) ☐ Pain in side of body (flank) or above pubic bone (suprapubic) ☐ Visible blood in urine (frank haematuria) ☐ New onset or worsening of pre-existing confusion or agitation ☐	
If NO	UTI unlikely but continue to monitor symptoms for 72 hours. Do **not** use a urinary dipstick and do **not** send a sample for culture.	
If YES	Request clinical/medical review ☐ Collect a urine sample for culture ☐ Do **not** use a urinary dipstick	
Clinician:	If you judge that antibiotic treatment is required before culture and sensitivity results are available, prescribe according to the recently updated NI Management of Infection Guidelines for primary care: http://cms.horizonsp.co.uk/viewer/nipha	