Good Practice Guidance for GPs/Non-Medical Prescribers: Management of Urinary Tract Infections in older adults residing in care homes.

Diagnosis

Residents aged 65 years and over must have a full clinical assessment before a diagnosis of a urinary tract infection (UTIs) is made.
Refer to the Management of UTIs for resident's pathway (Appendix 1).
Check residents for:

- New onset dysuria ONLY
  Or TWO or MORE localised signs or symptoms of a UTI including:
  - New onset or worsening of pre-existing delirium/ confusion/agitation/drowsy
  - Temperature 1.5°C above resident's normal, twice in the last 12 hours
  - New onset urgency
  - New onset frequency
  - New onset incontinence
  - New onset flank or suprapubic pain
  - Haematuria

It is good practice for care home staff to complete Form U1: Management of UTIs for older adults residing in care homes (Appendix 2).

Do not use dipstick test in diagnosis of UTI in older people >65 years or in those with indwelling catheters.

Urine culture for men and women >65 years *without* catheter:

Only send urine for culture if resident has:

- New onset dysuria ONLY
  Or TWO or MORE localised signs or symptoms of a UTI including:
  - New onset or worsening of pre-existing delirium/ confusion/agitation/drowsy
  - Temperature 1.5°C above resident's normal, twice in the last 12 hours
  - New onset urgency
  - New onset frequency
  - New onset incontinence
  - New onset flank or suprapubic pain
  - Haematuria

OR resident has recurrent symptomatic UTIs.

Send urine culture if feasible *before* antibiotics are taken, as greater antibiotic resistance in older adults can occur.

- Do not treat asymptomatic bacteriuria in older adults
  - Treating asymptomatic bacteriuria does not reduce mortality or prevent symptomatic episodes but does increase side-effects and antibiotic resistance.
  - Encourage increased fluid intake.

Urine culture in women and men *with* catheters:

Only send urine for culture in catheterised residents if features of systemic infection are present.
Always send urine culture if feasible before antibiotics are taken, as greater antibiotic resistance in older adults can occur. However, always:

- Exclude other sources of infection.

- Check that the catheter drains correctly and is not blocked e.g. check bag positioning, assess resident's fluid chart to see if dehydrated, or assess if constipated.
- Consider need for continued catheterisation.
- If the catheter has been in place for more than seven days, consider changing it before/when starting antibiotic treatment (do not delay antibiotics)

- Do not give antibiotic prophylaxis for catheter changes unless history of symptomatic UTIs due to catheter change.
- Do not prescribe antibiotic prophylaxis to older adults with long-term indwelling catheters to prevent UTIs unless there is a history of recurrent or severe UTIs.

Signs and Symptoms of Catheter induced – UTI

Signs and symptoms of Catheter induced – UTI include:

- new onset or worsening of fever, rigors,
- altered mental status,
- malaise, or lethargy with no other identified cause,
- flank pain,
- costovertebral angle tenderness,
- acute haematuria,
- pelvic discomfort,
- and in those whose catheters have been removed, dysuria, urgent or frequent urination, or suprapubic pain or tenderness.

Prescribing Information

Broad spectrum antibiotics (e.g. co-amoxiclav, quinolones and cephalosporins) should be avoided as they increase the risk of Clostridium difficile infection, MRSA and resistant UTIs. Guidance from the UK Health Security Agency (UKHSA) suggests considering narrow spectrum antibiotics such as nitrofurantoin or trimethoprim as first line treatments.

Resistance is increasing to all the antibiotics used to treat UTIs and there is no clear first choice alternative to trimethoprim or nitrofurantoin. Infections due to multi-resistant organisms including extended spectrum beta-lactamase (ESBL) *E. coli* are increasing. Susceptibility results are essential to guide treatment.
A Patient Information Leaflet (PIL) is available from TARGET UTI Resource Suite.

Treatment Choices in Non-Catheterised Residents (Refer to SCAN Antimicrobial Guidance)

First Line: Non-Catheterised Residents	Second Line: Non-Catheterised Residents
Women **Nitrofurantoin** 100mg m/r po BD **for 3 days** (if eGFR 45mL/min/1.73m^2 or greater) **Or** **Trimethoprim** 200mg po BD **for 3 days** if culture results available and shows susceptible - not recommended for empirical treatment of UTI due to high level of resistance in urinary *E. coli.* Check any previous urine culture and susceptibility results and antibiotic prescribing and choose antibiotics accordingly.	**Women** **Fosfomycin** 3g sachet po as **a single dose** (if eGFR greater than 10 ml/min/1.73m^2) **Or** **Pivmecillinam** 400mg po STAT **then** 8 hours later 200mg TDS to complete the **3-day course**. (Supply of 10 tablets in total) (Can use in all stages of renal impairment)

Men **Nitrofurantoin** 100mg m/r po BD **for 7 days** (if eGFR 45ml/min/1.73m^2 or greater) **Or** **Trimethoprim** 200mg po BD for 7 days if culture results available and shows susceptible. Not recommended for empirical treatment of UTI due to high level of resistance in urinary *E. coli* Check any previous urine culture and susceptibility results and antibiotic prescribing and choose antibiotics accordingly	**Men** **Fosfomycin** 3g sachet po STAT dose and repeated 72 hours later (if eGFR greater than 10 ml/min/1.73m^2) - this represents a '7-day course' **Or** **Pivmecillinam** 400mg po STAT **then** 200mg TDS for **7 days.** (Supply of 22 tablets in total) (Can use in all stages of renal impairment)

Treatment Choices in Catheterised Residents

First Line: Catheterised Residents	Second Line: Catheterised Residents
Men and Women **Nitrofurantoin** 100mg m/r po BD **for 7 days** (if eGFR 45mL/min/1.73m^2 or greater) **Or** **Trimethoprim** 200mg po BD **for 7 days** (if culture results available and shows susceptible) - not recommended for empirical treatment of UTI due to high level of resistance in urinary *E. coli* **Or** **Amoxicillin** 500mg po TDS **for 7 days** (if culture results available and shows susceptible)	**Men and Women** **Second choice (first choices all unsuitable):** **Pivmecillinam** 400mg po STAT then 8 hours later 200 mg TDS **for 7 days** (supply of 22 tablets in total)

Cautions:

- Do not recommend cranberry products or urine alkalinising agents (the activity of nitrofurantoin is reduced with increasing pH; avoid alkalinising agents e.g. potassium citrate)
- Adults with a urinary tract infection that do not respond to initial antibiotic treatment should have an MSU test to see if other antibiotics should be tried.
- Men who have symptoms of an upper urinary tract infection should be referred for urological investigation.

Nitrofurantoin

Healthcare professionals prescribing nitrofurantoin should be aware of the risks of pulmonary and hepatic adverse drug reactions and advise residents and care staff to be vigilant for the signs and symptoms in need of further investigation.

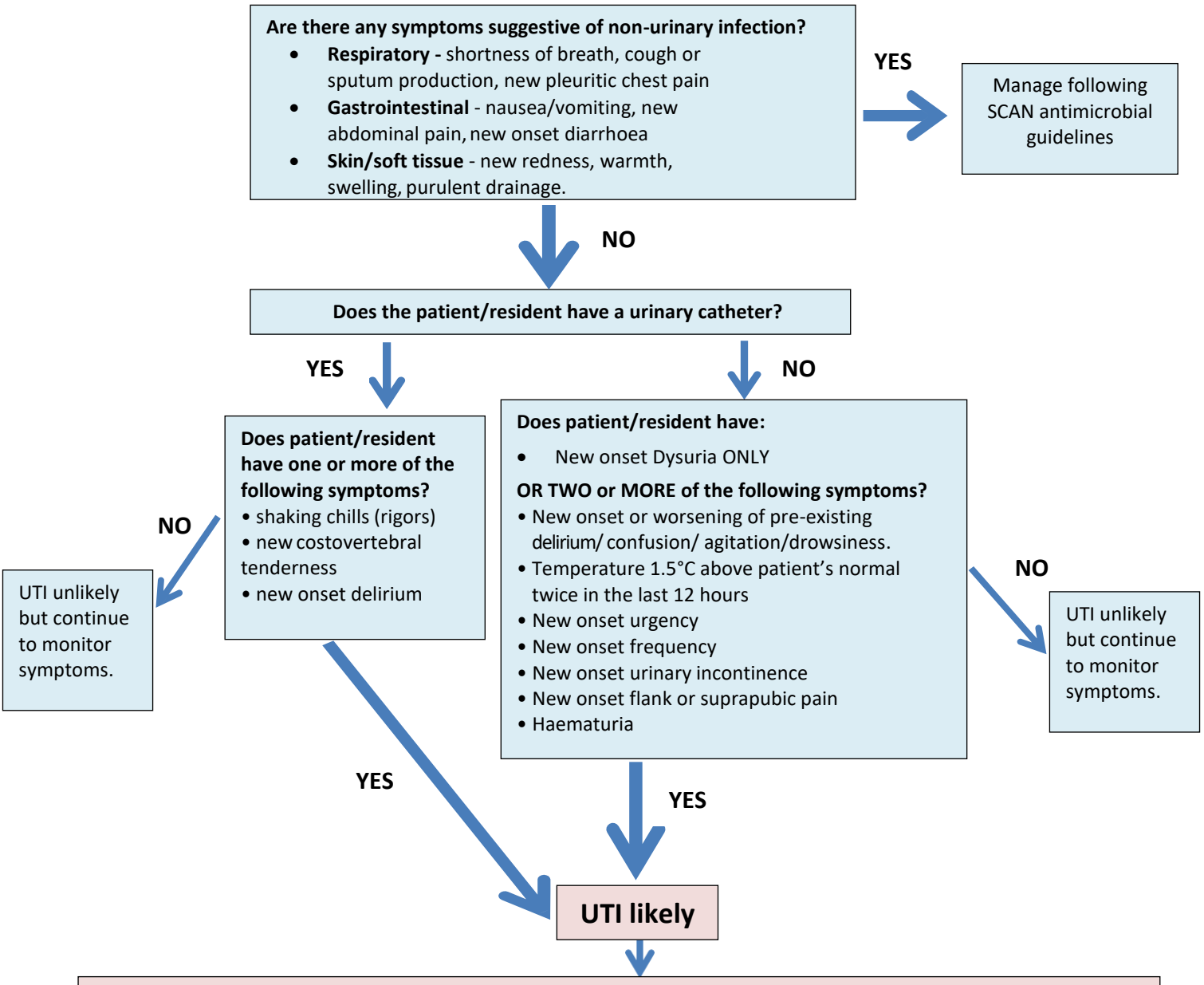
Advice for healthcare professionals:

- Avoid nitrofurantoin if eGFR<45ml/min - may be used with caution if eGFR 30–44 mL/ Min as a short-course only (3 to 7 days), to treat uncomplicated lower urinary-tract infection caused by suspected or proven multidrug resistant bacteria and only if potential benefit outweighs risk.
- Advise residents and caregivers to be vigilant for new or worsening respiratory symptoms while taking nitrofurantoin and promptly investigate any symptoms that may indicate a pulmonary adverse reaction.
- Pulmonary reactions may occur with short- or long-term use of nitrofurantoin, and increased vigilance for acute pulmonary reactions is required in the first week of treatment.
- Residents receiving long term therapy e.g. for recurrent UTIs, should be closely monitored for new or worsening respiratory symptoms.
- Immediately discontinue nitrofurantoin if new or worsening symptoms of pulmonary damage occur.
- Be vigilant for symptoms and signs of liver dysfunction in residents taking nitrofurantoin for any duration, but particularly with long-term use, and monitor patients periodically for signs of hepatitis and for changes in biochemical tests that would indicate hepatitis or liver injury.
- Use caution when prescribing nitrofurantoin in residents with pulmonary disease or hepatic dysfunction, which may mask the signs and symptoms of adverse reactions.
- Advise residents and care staff to read carefully the advice in the Patient Information Leaflet about symptoms of possible pulmonary and hepatic reactions and to seek medical advice if they experience these symptoms.
- Report suspected adverse drug reactions (ADRs) to the Yellow Card scheme.

References

1. TARGET Diagnosis of urinary tract infections: quick reference tool for primary care, Flowchart for suspected UTI in catheterised adults or those over 65 years Last review: Nov 2018. Next review: Nov 2021. Last update: October 2020. Version: 3.0 Visual summary UTI_diagnostic_flowchart_NICE-October_2020 Gateway approved_O65 TARGET (002).pdf
2. GOV.UK Urinary tract infection: diagnostic tools for primary care. https://www.gov.uk/government/publications/urinary-tract-infection-diagnosis (Accessed Jan 2024)
3. SIGN 160: Management of suspected bacterial lower urinary tract infection in adult women Updated 09/20. LINK (Accessed Jan 2024)
4. SIGN 160 UTI Sept 2020 LINK (Accessed Jan 2024)
5. NICE Guideline (NG113) Urinary tract infection (catheter-associated): antimicrobial prescribing. LINK (Accessed Jan 2024)
6. NICE NG109 2018 Urinary tract infection (lower): antimicrobial prescribing. LINK (Accessed Jan 2024)
7. BNF (Accessed Jan 2024) [https://bnf.nice.org.uk/]
8. Clinical Knowledge Summaries – management of UTI in men (Accessed Jan 2024)[https://cks.nice.org.uk/urinary-tract-infection-lower-men]
9. Clinical Knowledge Summaries – management of UTI in women (Accessed Jan 2024)[https://cks.nice.org.uk/urinary-tract- infection-lower-women]
10. SCAN guidelines Uncomplicated UTI in Non-Pregnant Women (microguide.global)(Accessed Jan 2024)
11. SCAN guidelines Lower UTI in Men (microguide.global) (Accessed Jan 2024)
12. SCAN Guidelines Catheter-associated UTI (microguide.global) (Accessed Jan 2024)
13. https://www.gov.uk/drug-safety-update/nitrofurantoin-reminder-of-the-risks-of-pulmonary-and-hepatic-adverse-drug-reactions

Appendix 1- Management of UTIs in Care Homes Pathway



- Assess if urinary retention or sub-acute retention of urine is likely (e.g. blocked catheter or distended bladder)
- DO NOT use dipstick test in diagnosis of UTI in older people >65 years or in those with indwelling catheters.
    - Obtain a sample for urine culture and send to Microbiology.
    - Start antibiotic therapy following SCAN or as advised by Microbiology.
    - Review the choice of antibiotic when microbiological results are available.
    - Change the antibiotic according to susceptibility results if the bacteria are resistant.
- 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) 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.

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Appendix 2 – Form U1

FORM U1- Management of Urinary Tract Infections (UTI) for older adults residing in care homes.

URGENT – FOR ATTENTION OF GP/CLINICAN TODAY

Resident Name		**Date of Birth**	
ALLERGIES		**Room No**	
Care Home Name		**GP Practice**	

CARE HOME STAFF to complete sections 1-3

DO NOT DIP STICK UNLESS REQUESTED BY GP/CLINICIAN. Dip stick test is not recommended for people >65 years old.

Email completed form to GP practice and follow up with phone call.

GP/Clinician may request Mid-stream Urine Specimen (MSU). **Not urine from pads.**

Complete sections 4 and 5 after GP/Clinician has decided how to manage the UTI.

File completed form in the resident's care plan /notes

Staff member completing form:		**Date form completed:**	

1. Are there any symptoms suggestive of non-urinary infection? Please circle symptoms which apply:

Women aged above 65 years, in long-term care facilities, may not display the usual symptoms and signs of UTI that are seen in younger women. Functional deterioration and/or changes to performance of daily activities may be indicators of infection in frailty.

Respiratory	shortness of breath	cough or sputum production	new chest pain
Gastrointestinal	nausea/vomiting	new abdominal pain	new onset diarrhoea
Skin/soft tissue	new redness	warmth/swelling	appearance of pus

2. Resident symptoms	**Tick relevant boxes**
• **Is the resident experiencing new onset Dysuria ONLY** - (painful or difficult urination)	
Or 2 or MORE of the following	
• **New onset or worsening of pre-existing delirium/confusion /agitation/drowsy** **(if fever and delirium/weakness only: consider other causes before treating for UTI)**	
• **Temperature 1.5°C above resident's normal, twice in the last 12 hours**	
• **New onset urgency** - (needing to go to the toilet quickly)	
• **New onset frequency** - (needing to go to urinate more often than normal)	
• **New onset urinary incontinence** – (unintentional loss of urine)	
• **New onset flank or suprapubic pain** – (pain in the side of the body, back or above the groin area)	
• **Haematuria** (blood in the urine)	

3. Catheter

Is there a catheter in place? *Circle appropriate.* **YES** **NO**

If **YES,** reason for catheter:		Date catheter last changed:	

4. UTI Management as instructed by GP/Clinician	**Tick relevant boxes**
• **Wait and review in 24 hours**	
• **Mid-stream Urine Specimen (MSU) needed If the resident is experiencing:** - **New onset Dysuria ONLY** - **OR 2 or MORE of the signs/symptoms in Q2** - **OR failed treatment**	
• **UTI diagnosed**	
• **Start antibiotic therapy following SCAN Antimicrobial guidelines or as advised by Microbiology and review the choice of antibiotic when microbiological results are available. Change the antibiotic according to susceptibility results if the bacteria are resistant.**	
• **If patient has a urinary catheter, remove and replace it**	
• **Consider use of paracetamol, if clinically appropriate to relieve pain**	

5. Antibiotics: CROSS CHECK ALLERGY STATUS (Patient Information Leaflet available from TARGET UTI Resource Suite)

Antibiotic prescribed by GP/Clinician: *Circle appropriate.* **YES** **NO**							
Dose		**Frequency:**		**Duration:**		**Start Date:**	
Additional Comments:							