



To Dip or Not to Dip User Guide to the Clinical Pathway for older people in aged care homes:

Suspected Urinary Tract Infections

Version 3.0 June 2025



Australian Government
Aged Care Quality and Safety Commission



**Better use
of antibiotics**

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Version 3.0 – What’s new

Antibiotic recommendations for treatment of UTI in aged-care facility residents

- This section has been revised to align with updates in the eTherapeutic Guidelines in March 2025 and Australian Medicines Handbook in April 2025.

When to use the Clinical Pathway

In conjunction with To Dip or Not to Dip education, the clinical pathway is used to guide decisions about care when a resident has had a clinical change and a UTI is suspected. Using a person-centred approach, the resident should have a thorough assessment to consider all possible causes of clinical change, including looking for evidence of:

- infections
- non-infective illnesses
- medication-related issues
- environmental issues
- pain
- change or deterioration in cognition.

After a thorough assessment has been performed, use the clinical pathway to help determine whether a UTI is likely, possible, or unlikely, and next best steps. The clinical pathway is applicable to persons with suspected lower urinary tract infections such as cystitis, prostatitis, and catheter-associated UTI. **The clinical pathway should not be used for residents with suspected sepsis, including urosepsis, or pyelonephritis.** These are medical emergencies that require urgent escalation.

The clinical pathway has been developed for use by nursing staff for residents in aged care facilities. It takes into consideration that residents can present with localising urinary tract symptoms that are clearly suggestive of UTI (e.g. dysuria), or localising urinary tract symptoms that may be due to other reasons (e.g. new urinary frequency) or systemic symptoms that suggest that they are unwell, where UTI is one of the many possible diagnoses (e.g. new or worse confusion). This pathway can be applied to residents with cognitive impairment, although it may be more difficult to rely on their responses to questions (symptoms) or responses to examination (signs).

Asymptomatic Bacteriuria (ASB) is often evident in older people. This condition refers to the presence of bacteria in the urine which makes up the normal flora of the bladder and urinary tract. Where the person has no acute symptoms such as fever or pain, the presence of bacteria in urine is not considered pathological and requires no treatment. Residents with ASB may have no symptoms or signs of concern or are well but have offensive smelling and/or cloudy urine, or have symptoms of signs of concern but related to other causes.

How to use the Clinical Pathway

The Clinical Pathway is based on the 'Therapeutic Guidelines: Assessment and treatment of Aged Care Facility residents with suspected UTI'. There are two pathways depending on whether or not the resident has a catheter.

The clinical pathway has three sections:

- **Initial Assessment section** — vital observations: blood pressure, pulse, temperature, respiratory rate and symptoms and signs
- **Assessment section** — interpretation of observations, symptoms and signs
- **Further actions**

Who fills in the form?

The clinical pathway can be initiated by the nurse (or personal carer under direction of a nurse) who starts completing the initial assessment section. The other sections are completed by the nurse. The assessment section is completed on the day that the clinical pathway is initiated. The 'further actions' section is updated as information comes to hand e.g. the plan may be to wait for urine culture results prior to initiating antibiotic treatment.



Practical tips on using the clinical pathway when assessing a resident living with cognitive impairment and dementia

Many residents living with dementia are highly susceptible to developing delirium which can be brought on by various infections, and non-infectious conditions such as medications, metabolic disturbance, pain or constipation.

For residents with changed behaviour, it is important to assess, identify and exclude other potential causes, including unmet needs, rather than immediately attributing it to a UTI. [Dementia Support Australia](#) (DSA) has a range of resources to support clinicians in the assessment and management of delirium in persons with dementia.

Consideration should be given to interpreting results of vital signs and symptoms. Small changes such as an increase in temperature (e.g. 1.5°C) from baseline (the resident's usual temperature range) may be indicative of infection. Hypothermia in an older adult can also indicate sepsis.

Consider whether the person:

- Is able to provide reliable responses to verbal questions
- Demonstrates behaviours that can help make an assessment.

Tips when assessing the person:

- Ask questions in a way the person understands, and that does not suggest or influence the answer. This requires knowledge of the person and good communication skills.
- Use an open-ended question such as "How does it feel when you pass water/ do a wee?"
- Don't use a close-ended question such as "Does it burn when you pass urine?" which is more likely to lead to an automatic yes or no from those unable to provide reliable responses.
- Look for behaviours that may suggest urinary symptoms. Are they grimacing when they use the toilet? Are they going to the toilet more often? Are they touching their abdomen or groin frequently? Are they rushing to the toilet and not reaching it in time, and this is new for them?

What is the role of urine dipstick testing in UTI assessment?

Dipstick testing is unnecessary in residents with no symptoms or signs of concern. In this group, a positive dipstick test result will only detect ASB.

Dipstick testing is unhelpful when used to diagnose (rule in) a UTI in persons with symptoms and signs that could be related to a large number of causes. Common examples of inappropriate dipstick testing are in residents presenting with smelly urine, cloudy urine, dark urine, falls, behavioural change, and loss of appetite. A positive dipstick test result does not differentiate between ASB or UTI in this situation.

Dipstick testing can occasionally be used in specific situations to rule out UTI where a resident has suspected infection **and** the results of thorough assessment **and** source of infection remain unclear.

Older people with bacteria present in their urine

40%
men



50%
women



100%

People with indwelling urinary catheters



Reasons not to perform dipstick testing

- Urine dipstick testing and urine culture results do not diagnose UTIs as they do not distinguish between UTI and ASB
- Fever or new confusion can be caused by many reasons. A thorough clinical assessment is required to determine most likely causes. A positive dipstick test does not distinguish between UTI and ASB.
- Smelly, dark or cloudy urine without any other symptoms or signs is not a urine symptom suggestive of UTI. More common causes are dehydration, certain food or medications.
- Surveillance dipstick testing in residents with no symptoms or signs e.g. on admission to the facility is likely to identify ASB which does not require treatment.
- Dipstick testing in residents with no symptoms or signs after antibiotic treatment for UTI is likely to identify ASB which does not require treatment.



When to perform urine culture and other considerations

Urine cultures

- Cannot confirm a diagnosis of UTI without symptoms and signs. A positive urine culture in a resident with no symptoms and signs confirms ASB.
- In residents with suspected UTI, are helpful in confirming the diagnosis of UTI and best antibiotics to use
- In residents with persistent symptoms after starting antibiotics for UTI, are helpful in excluding a multidrug-resistant organism

Urine cultures and when to perform

- GPs should routinely request urine culture as part of work-up for suspected UTI; this is important in making sure the diagnosis is confirmed, the organism identified, and the correct antibiotic is used
- GPs may occasionally request a urine sample after antibiotics for UTI if the person is slow to improve or has persistent symptoms
- GPs may occasionally request a urine sample after completion of UTI treatment for complicated UTI e.g., relapsed UTI, or where a urinary stent is in place.

Urine culture: other considerations

- Best results are from samples collected before starting antibiotics, however if the resident is unwell do not delay antibiotics.
- Urine cultures should be collected and stored in a way to minimise contamination. This is by collecting it in a way to minimise contamination with bacteria on skin or faeces. It should be stored at 4-10°C until ready for transport.
- Urine culture results (microscopy, culture, and antibiotic sensitivities for any significant organisms grown) usually take 2-3 days to come back from the laboratory.
- Urine culture results are useful in working out whether the antibiotic that the resident has already been started on is the best choice in targeting the causative organism. In residents who are slow to improve, results can guide whether the antibiotic is effective, or the resident has a resistant infection. If the latter is the case, treatment should be reviewed by the doctor.
- The National Centre of Antimicrobial Stewardship has a [guide to interpretation of urine culture results](#)
- Urine cultures or urine dipstick testing after completing antibiotic treatment as a proof of cure are not recommended; usually the best assessment of cure is based on improvement or resolution of symptoms and signs.

Collecting a sample of urine for microscopy and culture

Understanding how to best collect an uncontaminated specimen of urine is important as contaminated urine samples will yield inaccurate culture results. The most common samples of urine collected are mid-stream urine (MSU) or if the resident has a urinary catheter in place, a catheter-specimen urine (CSU).

MSU

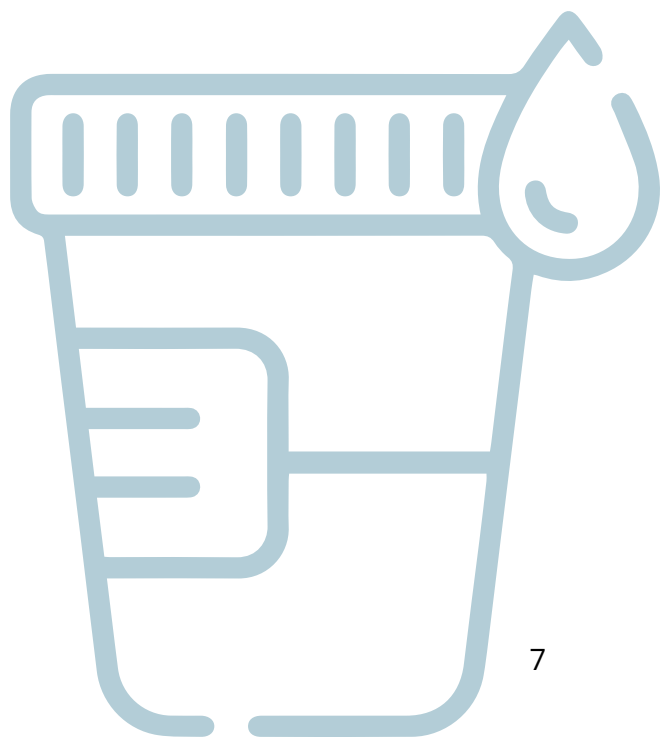
Can be self-directed by the resident or assisted by staff. If assisting a resident to collect the sample:

- Wash hands and don gloves
- Make a clean wipe of the head of penis (males) or vaginal area (females).
- Allow a small amount of urine to fall into toilet first, then collect the middle of the urine stream into the container. Allow the resident to finish voiding in the toilet.
- If the sample cannot be sent to laboratory within 1 hour, store in fridge. Do not keep in fridge for >24 hours.

CSU

If a resident has suspected catheter-associated UTI, one of the first steps is to review whether they still need the catheter or if it can be removed. If removal is not possible then the next question is whether the catheter should be changed. These considerations are important when working out how to best collect a fresh uncontaminated sample of urine for CSU.

- If the catheter is going to be changed in a timely fashion, it is best to collect a sample from the new system.
- If the catheter is not going to be changed in a timely fashion, it is important to collect the urine from the sampling port using an aseptic, non-touch technique. Samples should not be collected from the drainage bag as that urine is likely contaminated.





Practical tips for collecting urine samples in residents living with cognitive impairment and/or chronic urinary incontinence

Obtaining a urine sample from someone living with dementia can be difficult, especially if they are experiencing changed behaviors such as agitation, confusion or if they are incontinent. Dementia Support Australia (DSA) provide fact sheets and [information to support continence and toileting](#) for a person living with dementia, which may be useful when there is a need to collect a urine sample.

Some principles remain the same as for general urine culture collection but can require more time to explain, ask, and offer support to the resident when collecting the sample

- Monitor when the resident usually goes to the toilet to be able to assist with collecting the urine sample
- Accompany the resident to the toilet explaining the procedure and offering reassurance and positive encouragement
- Ensure there is privacy and minimise the number of staff present
- Turn on the tap allowing the resident to hear running water

- When collecting a MSU is not possible, alternative techniques can be used (the last two apply for residents with urinary incontinence)

- 7 Clean catch technique into urine container (i.e. catch urine stream even if it is not mid-stream)
- 7 Take a sample during personal care using a bedpan, commode or for males, bottle (taking care to ensure urine is not contaminated e.g. with faecal matter)
- 7 Sterisets/Newcastle urine collection pads (incontinence pads with insert pad, syringe can be used to aspirate urine from insert pad into urine container)

Use positive encouragement, not negative comments. If someone with dementia cannot provide a sample, then just let it go. If you suspect a UTI and cannot get a sample, explain that to the doctor. They should be able to provide best care even without the help of urine culture results noting that contaminated urine culture results are as unhelpful as not having urine culture results.

Initial management of resident with suspected UTI

Initial decisions around care, antibiotics, regular observations, hydration and pain relief are determined by how unwell the resident is, not by a dipstick test result.

The antibiotic approach depends on the resident's clinical status.

1. if unwell — don't delay antibiotics.
 - For residents with suspected sepsis, apply your local deteriorating resident pathway. Intravenous (and intramuscular) antibiotics may be considered if the resident's goals of care are in keeping with escalation of treatment
 - Oral antibiotics are often used for residents with UTI when preferred care is delivered in the facility, or with cystitis.
 - Commence antibiotics and when urine culture returns in >48 hours, this will confirm whether antibiotic treatment for UTI should be ceased because it wasn't a UTI, or it confirms that it was a UTI and informs us of the organism and best antibiotic to use
2. if not unwell, and the clinical pathway suggests that the resident has "UTI possible" or "Consider other causes as well as UTI", send off a urine culture.
 - If the urine culture returns (usually >48 hours) and confirms UTI and resident still symptomatic, then culture guides you on best antibiotic to use.

Antibiotic recommendations for treatment of UTI in aged- care facility residents (current June 2025)^{1,2,3}

Acute cystitis

Nitrofurantoin 100mg orally, 6-hourly for 5 days (7 days for men)

Fosfomycin 3g orally, as a single dose (women only, currently not available on Pharmaceutical Benefits Scheme)

Trimethoprim 300mg orally, daily for 3 days (7 days for men)

If nitrofurantoin, fosfomycin or trimethoprim cannot be used for empirical therapy, or contraindication, use:

Cefalexin 500mg orally, 12-hourly for 5 days (7 days for men)

Contraindications include:

- Allergy
- Trimethoprim: Use of trimethoprim or documented trimethoprim-resistant E.coli in previous 3 months
- Nitrofurantoin: eGFR < 30mL/min:
Do not use — may be ineffective due to low urinary concentrations and increased risk of adverse effects.

Other considerations:

- Nitrofurantoin: see Box.

If urine culture identifies a resistant pathogen but the resident is improving, there is no need to modify therapy. If urine culture identifies a resistant pathogen and resident is not improving, change antibiotic to narrowest spectrum based on susceptibility.

1 Therapeutic Guidelines: Antibiotics March 2025 online edition [accessed May 2025]

2 Australian Medicines Handbook [accessed June 2025]

3 Australian Don't Rush to Crush Handbook (4th edition)



Nitrofurantoin what to know

- Safe and effective for short-term treatment (5-7 days) if eGFR 30 mL/min or more.
- Nitrofurantoin can cause darker urine.
- Available in liquid form, or capsule contents can be mixed with water to form a suspension, or mixed with spoonful of yoghurt or apple puree. Refer to Don't Rush to Crush handbook for more information.
- Give with food or milk to increase absorption and reduce gastrointestinal side-effects.
- Do not use urinary alkalinizing agents with nitrofurantoin as this significantly reduces its antimicrobial effect.
- Do not administer antacids within 2 hours of nitrofurantoin, this reduces absorption.

Acute prostatitis

Ciprofloxacin 500mg orally, 12-hourly for 14 days

Trimethoprim 300mg orally, daily for 14 days

Trimethoprim + Sulfamethoxazole 160mg + 800mg orally, 12-hourly for 14 days

Modify antibiotics according to urine culture results using most narrow spectrum antibiotic; treatment course for acute prostatitis is 2 weeks.

Acute pyelonephritis

For severe pyelonephritis

For patients who do not have sepsis or septic shock, initial oral antibiotic therapy can usually be used if the patient is able to tolerate and absorb oral therapy. For patients who cannot tolerate or absorb oral therapy, use initial intravenous antibiotic therapy.

Refer to Therapeutic Guidelines: Antibiotics for recommendations.

For non-severe pyelonephritis

Amoxicillin + clavulanate 875 +125 mg orally, 8-hourly for 10 days

If contraindication (e.g., allergy) or reason that precludes use of above antibiotic, use:

Ciprofloxacin 500mg orally, 12-hourly for 7 days

Modify antibiotics according to urine culture results using most narrow spectrum antibiotic.

Catheter-associated UTI

- Use the same antibiotic approach as for UTIs without catheters.
- Antibiotic therapy for catheter-associated UTI is often not effective if the catheter is not removed or replaced, because most antibiotics penetrate poorly into catheter biofilm.
- Use the results of urine microscopy, culture and susceptibility testing to guide the choice of antimicrobial therapy for catheter-associated UTI.
- If clinical improvement is delayed, up to 14 days of treatment may be required. Seek expert advice.

Other treatments

Cranberry tablets are not effective for UTI prophylaxis.

Methenamine Hippurate (Hiprex™)

- is not effective in preventing UTIs in people with structural urinary tract abnormalities (e.g. neurogenic bladder)
- has no proven efficacy in preventing UTIs in men >65 years with recurrent UTIs
- is not effective in treating UTIs
- should not be used in people with severe renal impairment or dehydration who are at higher risk of developing crystals in urine which results in kidney stones
- should not be taken at the same time as Ural™ as this reduces the effectiveness of the treatments (Hiprex° lowers the pH of urine, Ural° increases the pH of urine).

Acknowledgments: Therapeutic Guidelines: Antibiotics guidelines on “Management of suspected UTI in residents in RACFs” on which the Clinical Pathway was developed. Dementia Support Australia for their expertise in content on residents living with cognitive impairment or dementia.



The Aged Care Quality and Safety Commission acknowledges the traditional owners of country throughout Australia, and their continuing connection to land, sea and community. We pay our respects to them and their cultures, and to elders both past and present.

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