



Dipstick urinalysis for Older Persons symptomatic and asymptomatic of urinary tract infections

Dr Eimear Brannigan, National Clinical Lead HSE-AMRIC

Marie Philbin, Chief Pharmacist HSE-AMRIC

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Antimicrobial Resistance &
Infection Control Programme



Background

- Until recently it has been an established practice to do dipstick urinalysis on new admissions, transfers & at regular intervals and when suspecting UTIs
- However our thinking and knowledge in this area has evolved.....
- Older persons more than likely will have bacteria in urine so dipstick urinalysis will be positive most of the time whether or not they have a UTI. Also true for persons of any age with urinary catheters.
- In older persons with no urinary symptoms these bacteria in the urine usually do no harm.
- Giving people who are well antibiotics just because they have a positive dipstick or a lab test showing bacteria in the urine often does harm and mostly does no good.



HSE point prevalence of antimicrobial use in Older Persons residential care facilities 2020/2021

Results

- 42% facilities performed dipstick urinalysis on every resident on admission or every few months regardless of signs or symptoms of UTI.
- 56% of facilities performed dipstick urinalysis when resident has signs and symptoms of infection.
- Two facilities in CHO 7 reported rare use of dipsticks.



HSE point prevalence of antimicrobial use in Older Persons residential care facilities 2020/2021

Key recommendation

- Practice of routine use of dipstick urinalysis for asymptomatic residents (every resident on admission and/or every few months) to support diagnosis of a urinary tract infection should stop.



Position statements on the use of urinary dipsticks

- Gives advice in relation to that key recommendation and also addresses other practices in relation to dipstick urinalysis.
- Developed by AMRIC team with wide consultation and consensus amongst HCPs across acute and community settings with clinical and infection expertise.



Position statements on the use of urinary dipsticks

In relation to the practice on admission, transfers, regular intervals.....

- **Absence of signs and symptoms of a UTI:** The use of dipstick urinalysis to assess for evidence of a UTI is not useful and **should be avoided in people of all ages.**



Use of dipstick urinalysis to assess for evidence of urinary tract infection in adults

Statements below are true of persons in the community, hospital and residential care facilities.
Statements below are true of dipstick urinalysis conducted by manual or automated means.

1. **Female (non-pregnant) patients under 65 years old:** Dipstick urinalysis may be useful as an aid to diagnosis when a UTI is suspected based on the presenting signs and symptoms (*Box A*). If dipstick is positive for nitrite OR leukocyte and red blood cells UTI is likely.
2. **Male patients under 65 years old:** The use of dipstick urinalysis is of limited value as an aid to diagnosis and is **not recommended**. Diagnosis should always be confirmed by urine culture. Dipstick urinalysis may be helpful in some clinical situations to decide if a working diagnosis of UTI should be made. Whilst they are poor at ruling out infection in males, positive nitrite makes UTI more likely.
3. **Pregnant females:** The use of dipstick urinalysis in assessing for evidence of a UTI is not a useful guide to management and is **not recommended**.
4. **All persons aged 65 years and older:** The use of dipstick urinalysis in assessing for evidence of a UTI is not a useful guide to management and is **not recommended**.
5. **All persons with an indwelling catheter:** The use of dipstick urinalysis in assessing for evidence of a UTI is not a useful guide to management and is **not recommended**.
6. **Response to treatment:** Dipstick urinalysis has no role in assessing response to treatment of a UTI.
7. **Absence of signs and symptoms of a UTI:** The use of dipstick urinalysis to assess for evidence of a UTI is not useful and **should be avoided in people of all ages**. This includes those instances which are commonly reported to trigger dipstick urinalysis such as:
 - Foul smelling, dark, concentrated and/or cloudy urine: In the absence of signs and symptoms of a UTI (*Box A*), this is suggestive of dehydration rather than of infection.
 - Altered mental status and behavioural changes (confusion, decreased appetite, decreased balance, falls, disorientation, wandering, and verbal aggression): In the absence of signs and symptoms of a UTI, these should not be readily attributed to a UTI. Consider other common causes (*Box B below*).

Box A: Signs and Symptoms of UTI

- ☐ Acute dysuria
- ☐ New/worsening frequency
- ☐ New/worsening urgency
- ☐ New onset incontinence
- ☐ Fever
- ☐ Suprapubic or costovertebral angle pain or tenderness
- ☐ Haematuria

If the patient is haemodynamically stable and does not have typical UTI signs and symptoms, a medication review and evaluation of potential triggers is recommended. A period of observation for 24 hours with adequate hydration and attention to other triggers is usually appropriate.

Box B: Potential causes of delirium/decline in function (PINCH ME)

P	Pain: Is the person in pain? Has urinary retention been excluded?
I	Infection: Is there a possible infection? Consider sepsis
C	Constipation: When was the last bowel movement?
H	Hydration/Nutrition: Is there major electrolyte imbalance? Has hypoxia, hypotension, hypoglycaemia been considered?
M	Medication: Omission of regular medication, addition of new medication or adverse effects of existing medication (see Box C)
E	Environment: change of environment, noise or activity levels impacting sleep/rest

Box C: Medications to consider reviewing

- ☐ Hypnotics including benzodiazepines
- ☐ Gabapentinoids
- ☐ Opioids including tramadol, and patches
- ☐ Anticholinergics such as Amitriptyline, Chlorpheniramine, Tolterodine, Oxybutynin, Paroxetine, Propylidone, Promethazine, Chlorpromazine.



Position statements on the use of urinary dipsticks

If a person is suspected of having a UTI because they have signs & symptoms...

- **All persons aged 65 years and older:** The use of dipstick urinalysis in assessing for evidence of a UTI is not a useful guide to management and is **not recommended**
- **All persons with an indwelling catheter:** The use of dipstick urinalysis in assessing for evidence of a UTI is not a useful guide to management and is **not recommended**.



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If the patient is haemodynamically stable and does not have typical UTI signs and symptoms, a medication review and evaluation of potential triggers is recommended. A period of observation for 24 hours with adequate hydration and attention to other triggers is usually appropriate.

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Position statements on the use of urinary dipsticks

Person has completed an antibiotic course for a UTI.....

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Positive change is happening

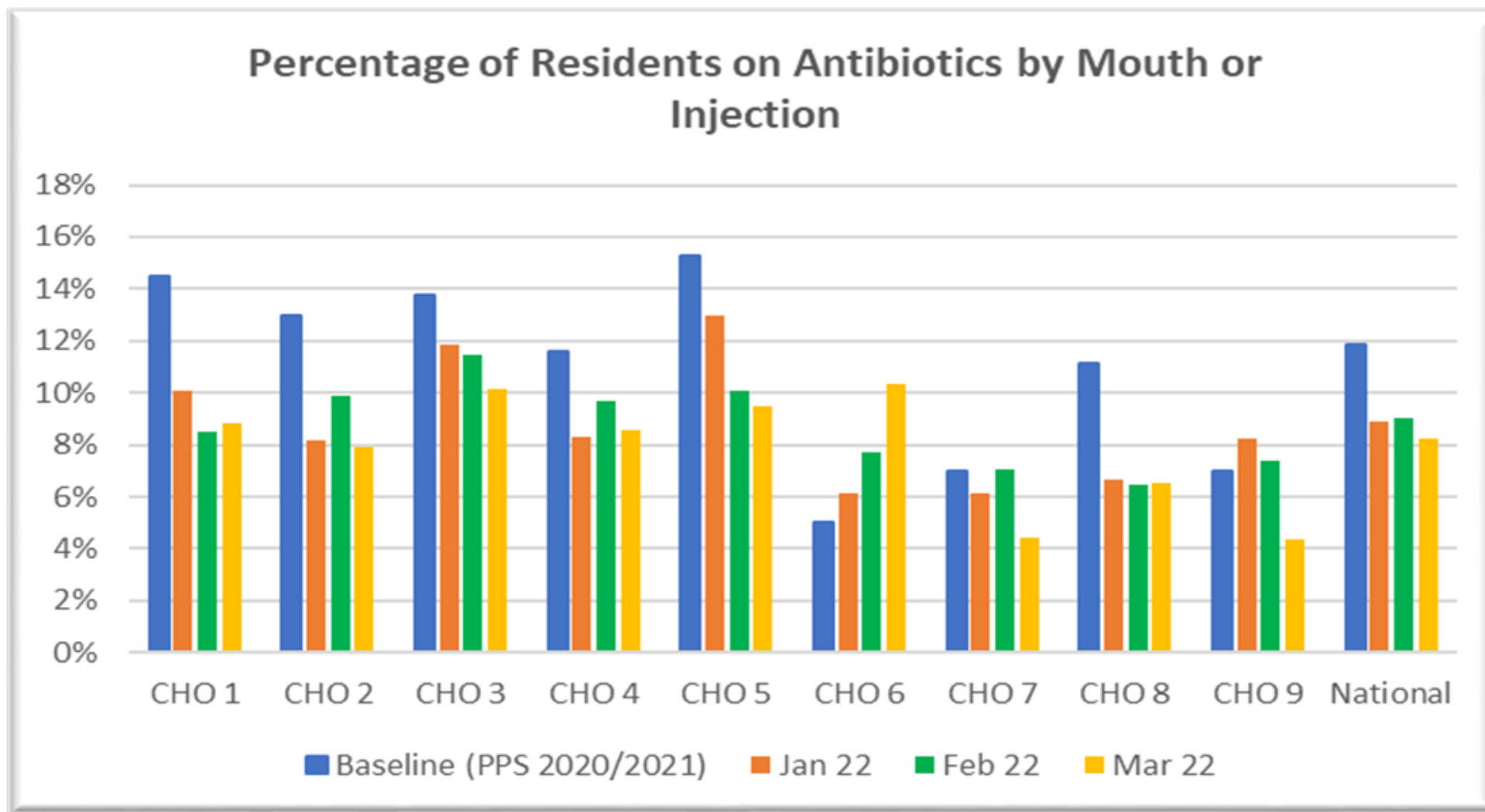
Routine use of dipstick urinalysis in all residents on admission / at regular intervals in patients not symptomatic of UTI has reduced from 69 % (HALT 2016) to 42% (PPS 2020).

Since the publication of the HSE PPS 2020/2021 report & recommendations...

- CHO Antimicrobial Pharmacists have provided feedback and education to the individual Older Persons facilities regarding dipstick use.
- The number of Older Persons facilities using urinary dipsticks routinely in all residents is continually reducing.
- More than likely if there is less dipstick use there are less residents started on antibiotics when they don't need one (see next slide for monthly HSE community operations dataset)



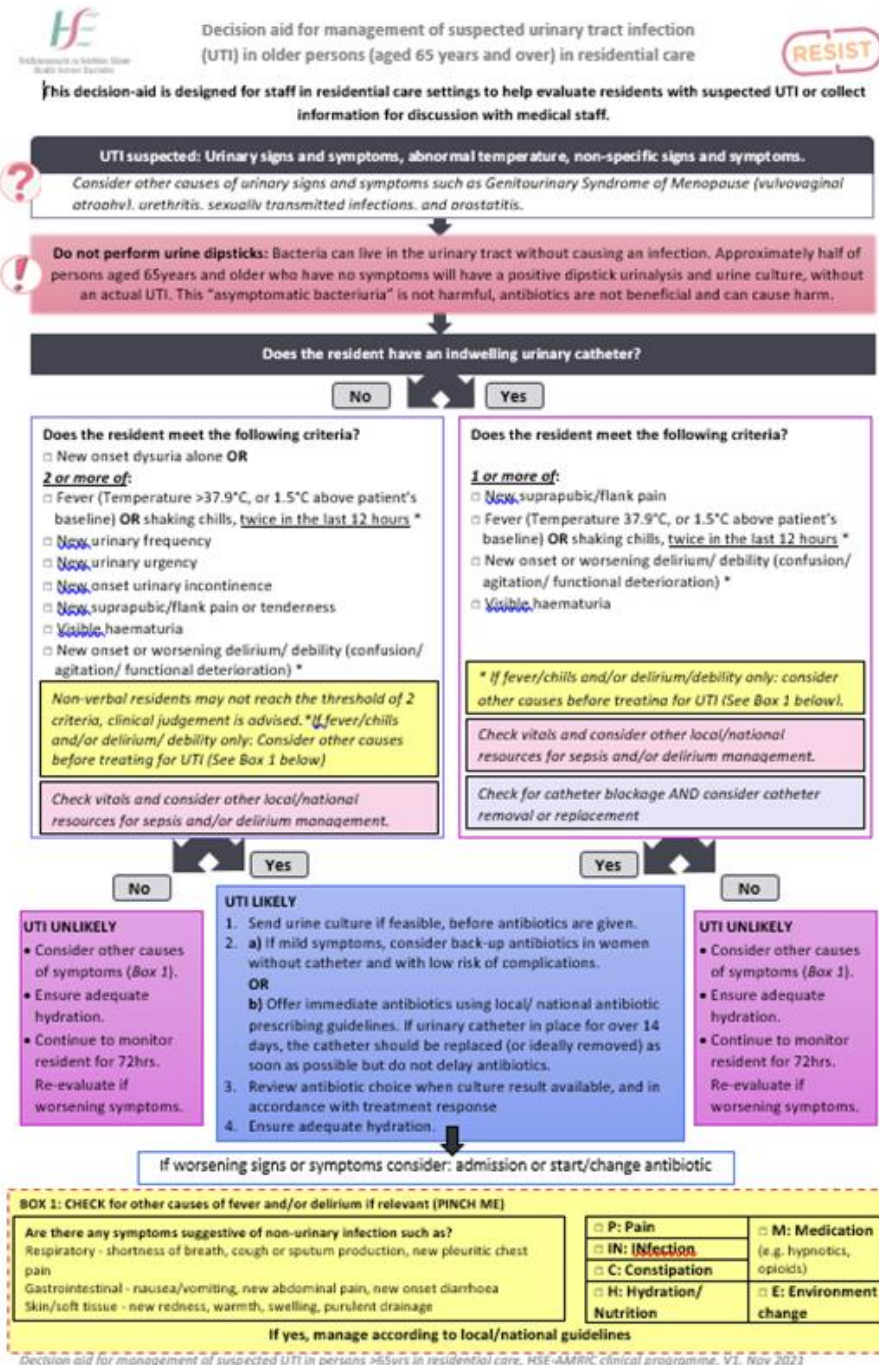
Monthly monitoring of HCAI/AMR/antibiotic consumption in HSE RCFs for Older Persons





To assist in implementation of the position statements:

Decision aid for management of suspected urinary tract infection (UTI) in older persons (aged 65 years and over) in residential care



Decision aid for management of suspected urinary tract infection (UTI) in older persons (aged 65 years and over) in residential care



This decision-aid is designed for staff in residential care settings to help evaluate residents with suspected UTI or collect information for discussion with medical staff.

UTI suspected: Urinary signs and symptoms, abnormal temperature, non-specific signs and symptoms.



Consider other causes of urinary signs and symptoms such as Genitourinary Syndrome of Menopause (vulvovaginal atrophy), urethritis, sexually transmitted infections, and prostatitis.



Do not perform urine dipsticks: Bacteria can live in the urinary tract without causing an infection. Approximately half of persons aged 65 years and older who have no symptoms will have a positive dipstick urinalysis and urine culture, without an actual UTI. This “asymptomatic bacteriuria” is not harmful, antibiotics are not beneficial and can cause harm.

Does the resident have an indwelling urinary catheter?

No

Yes

Does the resident meet the following criteria?

☐ New onset dysuria alone **OR**

2 or more of:

- ☐ Fever (Temperature $>37.9^{\circ}\text{C}$, or 1.5°C above patient's baseline) **OR** shaking chills, twice in the last 12 hours *
- ☐ New urinary frequency
- ☐ New urinary urgency
- ☐ New onset urinary incontinence
- ☐ New suprapubic/flank pain or tenderness
- ☐ Visible haematuria
- ☐ New onset or worsening delirium/ debility (confusion/ agitation/ functional deterioration) *

*Non-verbal residents may not reach the threshold of 2 criteria, clinical judgement is advised. *If fever/chills and/or delirium/ debility only: Consider other causes before treating for UTI (See Box 1 below)*

Check vitals and consider other local/national resources for sepsis and/or delirium management.

Does the resident meet the following criteria?

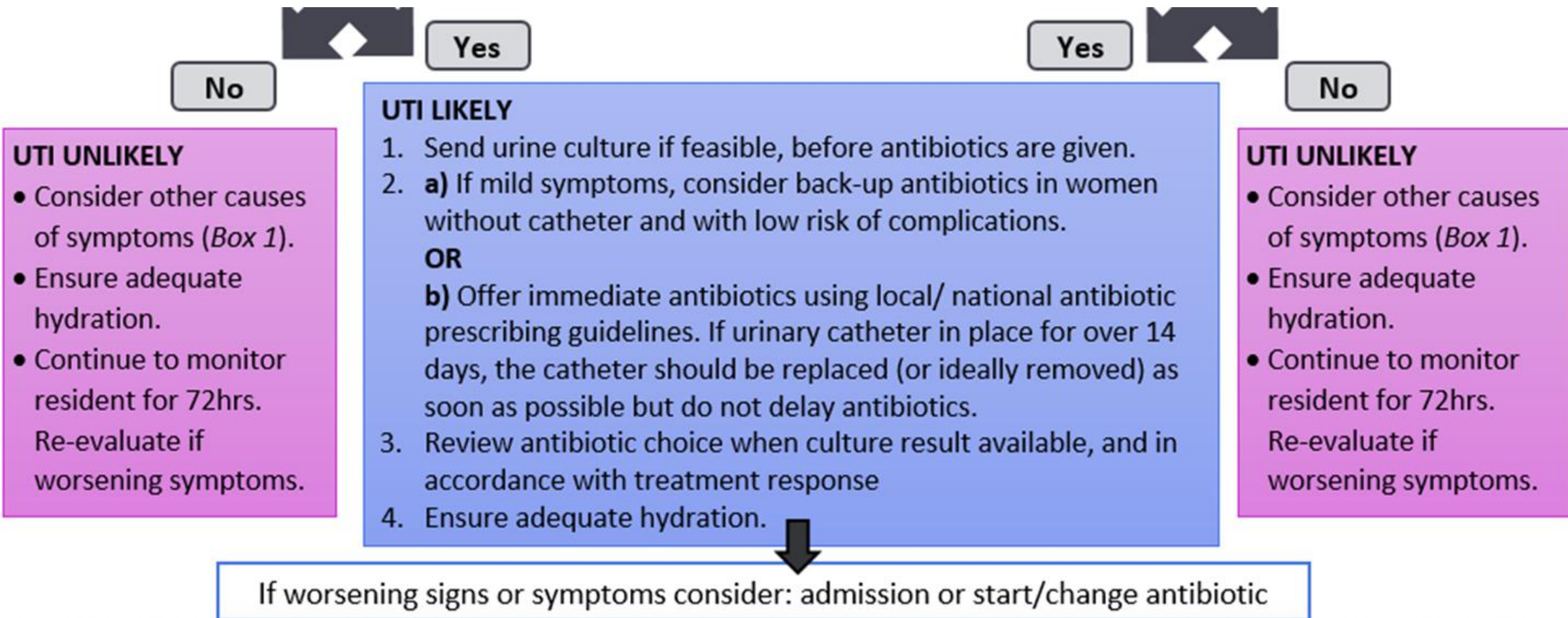
1 or more of:

- ☐ New suprapubic/flank pain
- ☐ Fever (Temperature 37.9°C , or 1.5°C above patient's baseline) **OR** shaking chills, twice in the last 12 hours *
- ☐ New onset or worsening delirium/ debility (confusion/ agitation/ functional deterioration) *
- ☐ Visible haematuria

** If fever/chills and/or delirium/debility only: consider other causes before treating for UTI (See Box 1 below).*

Check vitals and consider other local/national resources for sepsis and/or delirium management.

Check for catheter blockage AND consider catheter removal or replacement



BOX 1: CHECK for other causes of fever and/or delirium if relevant (PINCH ME)

Are there any symptoms suggestive of non-urinary infection such as?

Respiratory - shortness of breath, cough or sputum production, new pleuritic chest pain

Gastrointestinal - nausea/vomiting, new abdominal pain, new onset diarrhoea

Skin/soft tissue - new redness, warmth, swelling, purulent drainage

☐ **P: Pain**

☐ **IN: INfection**

☐ **C: Constipation**

☐ **H: Hydration/
Nutrition**

☐ **M: Medication**
(e.g. hypnotics,
opioids)

☐ **E: Environment
change**

If yes, manage according to local/national guidelines



Feedback from key stakeholders as the position statements, decision aid, education & training are rolled out:

- **‘it’s how we were trained’** [nurse in relation to dipstick urinalysis of asymptomatic residents, for example on admission]

AMRIC reply: dipstick urinalysis of asymptomatic persons does no good and can lead to harm

- **‘what about the non-verbal resident?’** [nurse in relation to resident symptomatic of UTI]

AMRIC reply: as per decision aid for management of symptomatic older person the diagnosis of non-verbal older person is included

- **‘positive dipstick result adds to pressure to prescribe’** [prescriber in relation to symptomatic & asymptomatic]

AMRIC reply: Older persons more than likely will have bacteria in urine so dipstick urinalysis will be positive most of the time. For older persons symptomatic of UTI follow decision aid to ensure older persons most likely to benefit from an antibiotic get one.



Guidance & supports

Treatment guidance available on www.antibioticprescribing.ie

Diagnosis & Management of Urinary Tract Infection (UTI) in Residential/Long Term Care/Nursing Home Residents (non-catheter associated)

Diagnosis & Management of Catheter-Associated Urinary Tract Infection (CA-UTI) in Residential/Long-Term Care/Nursing Home Residents

HSE LanD AMRIC e-learning module on prevention and management of urinary tract infections



Antibiotic* Prescribing

Keeping *antibiotics effective for future generations*
is everyone's responsibility

*Although there are technical reasons to prefer the term antimicrobial rather than antibiotic, the term antibiotic is used on this website as this term is more widely used by prescribers. This website includes guidance for antimicrobials which includes: antibiotics, antifungals, antivirals, anthelmintics etc.

[Antibiotic Prescribing Guidelines for Treatment of Community Infections](#)



Conditions and Treatments

View a list of conditions and treatment guidelines



Antimicrobial use in Residential Care Facilities including Nursing Homes



AMRIC Key Messages

Antimicrobial safety alerts and advice issued by AMRIC



What's New

Updates and new content



Prescribing in Renal Impairment

Guidelines on antimicrobial dosing in renal impairment



Safe Prescribing

Guidelines on prescribing safely



Paediatric Prescribing

Guidelines based on weight and height



Antimicrobial stewardship

Learn about AMS & access tools to improve antimicrobial use



Prescribing in Pregnancy

Prescribing Antimicrobials in Pregnancy, Postpartum infections and Lactation



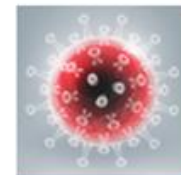
Dental Prescribing

Guidelines on dental prescribing and treatments



Tips on Penicillin Allergy

Tips on verifying Penicillin Allergy



Covid-19 Acute Respiratory Infection

Prescribing guidance in suspected or proven infection



Antimicrobial Resistance & Infection Control Programme



Prescribing in Long-term care facilities / nursing homes

Toolkit for AMS in residential care facilities (RCFs)

- › [Infographic of key findings and recommendations from Antimicrobial PPS in HSE RCFs for Older Persons 2020](#)
- › [Good Practice Points for commonly used antibiotics](#)
- › [Supporting pneumococcal vaccination in long-term care facilities](#)
- › [Position statements for the use of dipstick urinalysis in assessing evidence of UTI in adults](#)
- › [Decision Aid for Management of Suspected UTI in Older Persons \(over 65yrs\) in Residential Care.pdf \(size 736.4 KB\)](#)





In summary

UTI is a clinical diagnosis based on clinical signs and symptoms. It cannot be made by positive dipstick urinalysis alone in those >65 years.

Recommendations:

1. For residents asymptomatic of a UTI: The practice of routine use of dipstick urinalysis for asymptomatic residents to support the diagnosis of UTI should cease.
2. For residents symptomatic of UTI: Commence discussion amongst nursing and medical staff in your facilities regarding implementation of national position statement: use of dipstick urinalysis for suspected UTIs is not recommended in those > 65 yrs / in residents with catheters, and use of the decision aid for the management of suspected UTIs.





Acknowledgements

Bernie Love, Chief Antimicrobial Pharmacist, HSE Community Operations

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CHO Antimicrobial Pharmacists



Thank you for your participation

Any questions or comments?