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Urinary Tract Infection (UTI) Prevention & Management

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1 Introduction

Urinary tract infections (UTIs) are caused by the presence and multiplication of microorganisms in the urinary tract. They are usually caused by bacteria, or more rarely by other micro-organisms such as fungi, viruses, or parasites.

Urinary tract infection is the term used to describe an infection of any part of the urinary tract, including bladder (cystitis), urethra (urethritis) or kidneys (pyelonephritis).

Measures to promote prevention of UTI are important for all patients, as UTI can be painful and uncomfortable and can often result in more serious complications.

When appropriate UTI can be treated with antibiotics, however treatment is not always required and often UTI is misdiagnosed and treated with antibiotics inappropriately. Unnecessary antibiotic treatment is associated with significantly increased risks of clinical adverse events including *Clostridioides difficile* infection. Inappropriate use of antibiotics can also contribute to the development of antibiotic resistance.

UTI in adults is common, and factors such as age, sex and other predisposing factors need to be taken into consideration when assessing treatment requirements.

In this procedure the terminology male and female will refer to the sex someone was assigned at birth however consideration should be made for people who have transitioned (trans) including those who have medically transitioned and those who have not.

The incidence of urinary tract infection is highest in females due to them having a shorter urethra, and the close proximity of the urethra to the perineum. Around 10–20% of females will experience a symptomatic urinary tract infection at some time during their lives.

UTIs in adult males are often complicated and can be associated with abnormalities of the urinary tract especially in older males, although some can occur spontaneously in otherwise healthy young males.

Urinary tract infection incidence increases with age. It is estimated that 10% of males and 20% of females over the age of 65 years have bacteria in their urine without causing symptoms of a UTI, this is referred to as asymptomatic bacteriuria. Whereas symptomatic bacteriuria is the occurrence of bacteria in the urine and the presence of clinical symptoms.

UTI accounts for up to 20% of all hospital-acquired infections overall. The majority of this 20% occur in patients who have indwelling urinary catheters (Catheter associated urinary tract infection) with only 2–6% recorded as an actual UTI.

Patients who have an indwelling urinary catheter need to be assessed regularly and further guidance for care and management is available in the Trust's [Urinary Catheter Care Advice and Support Protocol](#) and the [Urinary Catheter Care Record](#), both of these can be accessed via the trusts intranet.

This procedure aligns with our journey for change as set out in the overarching [Infection Prevention and Control Policy](#).

2 Purpose

Following this procedure will help the Trust to:-

- Promote optimum levels of patient hydration, as being properly hydrated can reduce the risk of acquiring a urinary tract infection.
- Identify those patients who are showing signs and symptoms of a UTI and provide the appropriate care, management and guidance for individual patients.
- Ensure the safety of all patients in our care by recognising and implementing infection prevention and control measures promptly when required.

3 Who this procedure applies to?

- This procedure applies to all trust staff.
- This procedure aligns with Trust values as we collaborate with staff and respect their views. We ensure any staff member can discuss their needs so that standards are maintained while individual requirements can be recognised and supported to align with measures detailed in this procedure.

4 Related documents

This procedure also refers to the following TEWV procedures: -

[Standard IPC Precautions](#)

[Hand hygiene](#)

[Decontamination of equipment](#)

[Infectious diseases](#)

[Antibiotic prescribing procedure](#)

[Urinary Catheter Care Advice and Support Protocol](#)

[Urinary Catheter Care Record](#)

[Multi resistant gram negative bacteria](#)

[MRSA](#)

5 Causes of Urinary Tract Infection

UTI occurs when bacteria commonly found in the bowel of a healthy person enters the urinary tract, usually via the urethra.

The following may increase the risk of bacteria entering the urinary tract, resulting in a UTI:

- Conditions that obstruct the urinary tract, such as kidney stones
- Conditions that cause difficulty in emptying the bladder fully such as an enlarged prostate gland or constipation
- The use of a contraceptive diaphragm or condoms coated in spermicide
- Diabetes
- A weakened immune system due to chemotherapy
- The presence of a urinary catheter
- Sexual Intercourse
- Pregnancy
- Dehydration
- Poor personal hygiene especially relating to the genital areas
- Incontinence

6 Prevention of Urinary Tract Infection

Protection against UTI normally occurs naturally, as the kidneys of a healthy person produce a constant flow of urine and the bladder is regularly emptied.

To prevent UTI patients especially those in MHSOP and Learning Disability services should be encouraged to:

- Clean themselves from front to back after going to the toilet (provide assistance if required)
- Keep their genital area clean and dry (provide assistance if required)
- Drink plenty of fluids, particularly water (provide assistance if required)
- Go to the toilet to pass urine regularly during the day (provide assistance if required)
- To fully empty their bladder each time they go to the toilet
- Go to the toilet whenever they feel the urge to pass urine

Patients should be discouraged from:

- Using scented soap
- Wearing tight, synthetic underwear, such as nylon
- Wearing tight jeans and trousers
- Drinking alcoholic drinks, as they can irritate the bladder
- Consuming sugary food or drinks, as these can encourage bacteria to grow

Patients who are incontinent of urine and/or faeces are also at higher risk of developing a UTI. If worn, incontinence pads should be changed regularly, and the genital area kept clean and dry.

7 Importance of Hydration in preventing the risk of UTI

In some instances, such as MHSOP and LD areas, patients may not recognise that they are thirsty, and therefore regular drinks should be offered by staff throughout the day, staff may also need to assist patients to drink fluids.

To encourage hydration different choices of drinks should be provided as well as different shaped cups/mugs especially for patients who are unable to hold standard crockery.

All patients should aim to drink 1500mls of fluid per day, this roughly equates to 8-10 glasses/cups of fluid per day, see Appendix 5 fluid intake guide. Some foods are also a good source of fluid such as: custard, jelly, ice cream, ice lollies, fruit, yogurt, porridge and soup.

Fluid intake and urine output should be monitored for patients who require assistance or who are at risk of developing a UTI. The TEWV fluid balance chart is included in appendix 6

Dehydration increases the risk of UTI which can lead to multiple complications especially in the elderly. A urine colour dehydration checklist is included in Appendix 7. Complications include new or increased confusion, falls, acute kidney injury (AKI) and these can sometimes result in the patient requiring transfer to an acute hospital for admission and treatment.

8 Case definition and Clinical presentation

A Urinary Tract Infection (UTI) is caused by the presence and multiplication of microorganisms in the urinary tract. A UTI is defined by a combination of clinical features plus the presence of bacteria in the urine (bacteriuria).

Asymptomatic bacteriuria is the occurrence of bacteria in the urine without causing symptoms.

Symptomatic bacteriuria is the occurrence of bacteria in the urine and the presence of clinical symptoms.

UTI can result in several clinical conditions including:

- Acute and chronic pyelonephritis (infection of the kidney and renal pelvis)
- Cystitis (infection of the bladder)
- Urethritis (infection of the urethra)
- Epididymitis (infection of the epididymis)
- Prostatitis (infection of the prostate gland).

Infections of the bladder or urethra are generally classed as lower UTI and symptoms can include:

- Needing to pass urine more often than usual (frequency)
- Pain, discomfort or a burning sensation when passing urine (dysuria)
- Needing to urinate suddenly or more urgently than usual

-
- Feeling as though you're unable to empty your bladder fully
 - Pain in the lower abdomen
 - Cloudy, foul-smelling or blood stained (haematuria) urine
 - Feeling generally unwell, achy and tired

Infections of the kidneys or ureters (tubes connecting the kidneys to the bladder) are generally classed as an upper UTI. These can present with the above symptoms with the addition of the following symptoms:

- High temperature 38°C or above
- Back and/or side pain
- Shivering and chills
- Feeling and being sick
- New or increased confusion
- Agitation or restlessness

Older patients, frail patients or patients with an indwelling urinary catheter may also present with the following symptoms for both lower and upper UTI:

- Changes in behaviour, such as acting agitated new or increased confused (delirium)
- New incontinence
- Incontinence that is more frequent than usual
- New shivering or shaking (rigors)

Lower UTI is common and not usually a cause for major concern. Lower UTI is usually caused by bacteria that colonises the gastrointestinal tract including Escherichia Coli (E-Coli), staphylococcus species, Proteus and Enterococci.

Upper UTI can be serious if left untreated, and can lead to damaged kidneys, transmission of infection to the bloodstream resulting in more severe complications including Sepsis. If an upper urinary tract infection is suspected the patient must be referred for an urgent medical assessment.

8.1 Diagnostic investigations

The diagnostic investigations required for UTI differ depending on the patients age and sex.

8.1.1 Adults aged 65 and over

In adults aged over 65 asymptomatic bacteriuria is common and treatment with antibiotics may be more harmful than beneficial. Therefore, diagnosis must be based on a full clinical assessment, and urine sampling should be considered in combination with a clinical assessment.

The clinical assessment must involve examining the odour, turbidity, and colour of the urine; determining whether there are obvious signs of haematuria; and ascertaining whether there is pain, particularly around the suprapubic area.

Urinalysis via dipstick becomes more unreliable with increasing age and is not recommended to aid diagnosis in the over 65 age group.

Please follow the flow charts included in Appendix 1 of the TEWV [Antibiotic prescribing procedure](#) to aid diagnosis and treatment option decisions for UTI.

8.1.2 Adult males

For adult otherwise healthy young and middle aged males lower urinary tract infection is uncommon and therefore for males under the age of 65 a full physical examination to determine the cause and relevant management should be undertaken.

Please follow the flow charts included in Appendix 1 of the TEWV [Antibiotic prescribing procedure](#) to aid with diagnosis and treatment options for UTI.

8.1.3 Adults with urinary catheters

The length of time a urinary catheter is in place is strongly associated with an increased risk of infection, for everyday a urinary catheter is in place 5-10% of patients will become colonised with bacteria.

The presence of a catheter invariably induces pyuria (presence of pus/white cells in the urine) which is not an indicator of infection. Therefore, dipstick testing must not be used to diagnose urinary tract infection in patients with catheters, as dipsticks cannot differentiate between symptomatic and asymptomatic bacteria.

A catheter specimen of urine (CSU) should be sent to the laboratory for culture and sensitivity testing based upon the patient's clinical signs and symptoms.

Please follow the flow charts included in Appendix 1 of the TEWV [Antibiotic prescribing procedure](#) to aid diagnosis and treatment options for UTI.

8.1.4 Non pregnant females

Lower urinary tract infection affects up to 15% of females each year. For most females this is a benign condition that resolves in a few days. However, in some females with more complex pathologies signs and symptoms may be more atypical and a referral to microbiology or a Urology Specialist may be required to ensure the correct management and treatment is prescribed.

Please follow the flow charts included in Appendix 1 of the TEWV [Antibiotic prescribing procedure](#) to aid diagnosis and treatment options for UTI.

8.1.5 Patients under the age of 16

Lower urinary tract infection is common in infants and children, however symptoms may be non-specific making diagnosis more difficult. UTI should be considered in all children with an unexplained high temperature.

Please follow the flow charts included in Appendix 1 of the TEWV [Antibiotic prescribing procedure](#) to aid diagnosis and treatment options for UTI.

8.2 Recurrent lower urinary tract infection

Recurrent Lower Urinary Tract Infections may be defined as 2 or more episodes of confirmed Lower Urinary Tract Infections in 3 months. These may be due to relapse or reinfection.

Relapse is a recurrent Lower Urinary Tract Infection when the same strain of micro-organism is the likely cause, if infection recurs within a short period after treatment (for example, within 2 weeks).

Reinfection is a recurrent Lower Urinary Tract Infection with a different strain or species of micro-organism and is the likely cause if Lower Urinary Tract Infections recurs more than 2 weeks after treatment.

8.2.1 Management of recurrent lower urinary tract infection

For patients with recurrent lower UTI:

- Obtain and send a urine culture to the laboratory each time symptoms reoccur **before** commencing antibiotic treatment
- Treat each episode as for acute lower UTI
- Arrange a medical assessment of the patient and consider alternative conditions
- Refer to the Urology team at the Acute Trust for further investigation
- Discuss the patient fully with the Urology or Microbiology team prior to commencing any prophylactic antibiotic treatment.

9 Specimen Collection

Urine specimens can be sent to the microbiology lab within local Acute Hospital Trusts for analysis.

Specimens must be collected, stored and transported carefully. Please ensure the correct urine sample bottle is used depending on the urine test required.

Urine sample bottles containing boric acid (red top) as a preservative are preferable and urine samples should be transported to the local laboratory as soon as possible after collection.

- Urine collected in a container with boric acid may be stored out of the fridge for up to 48hours
- Urine collected in a container without boric acid must be stored within a specimen refrigerator for no longer than 48hours prior to transport to the lab.

9.1 Mid-stream urine (MSU)

Urine for analysis must be collected using a midstream urine (MSU) clean-catch technique

To minimise contamination of the specimen by bacteria (which may be present on the skin, the perianal region or the external genital tract), good hand and genital hygiene should be encouraged.

The principle for obtaining a midstream collection of urine is that any bacteria present in the urethra are washed away in the first portion of urine voided and therefore the specimen collected more accurately represents the urine in the bladder.

See appendix 1 for male MSU procedure
See appendix 2 for female MSU procedure

9.2 Catheter Sample of Urine (CSU)

Urine should only be taken from a catheterised patient if a UTI is clinically suspected. Urine for sampling can be taken from a urinary catheter using a sterile syringe to access the sample port and must not be taken directly from the urine drainage bag.

See appendix 3 for guidance on how to obtain a CSU.

9.3 Safe labelling of specimens

Ensure each specimen is clearly labelled with the patient's name, date of birth, NHS number and location eg. ward name.

The pathology request form must also identify the patients details as well as relevant clinical details, reason for the specimen request and any current antibiotic treatment.

Ensure the laboratory request form is also signed by the clinician who has requested the specimen.

The specimen must be secured in the specimen container and placed into a leak proof sealed specimen bag along with the request form.

Any specimens deemed as high risk of infection (e.g. from patients with blood borne viruses or diseases such as Creutzfeldt-Jacob Disease) must be placed into a mini grip plastic bag before being placed into the bag with the pathology request form, they should also be labelled as 'high risk' (high risk stickers can be ordered via cardea).

Unlabelled or incorrectly labelled specimens will be discarded by the receiving laboratory department.

9.4 Transportation of laboratory specimens

All pathology specimens must be transported in a leak proof, washable container. The container must be secure and must comply with UN 3373 standards.

Specimen transport containers must not be left unattended in a patient access area.

Specimen transport containers must be cleaned at least weekly, or immediately if they become contaminated.

Where specimens are transported to the laboratory by vehicle, the transport specimen container must be placed into a cardboard transport box labelled with both the destination and senders name and address.

Each specimen container must be in a separate plastic bag with sufficient material to fully absorb any leakage of the specimen

Vehicles used for specimen transportation must be equipped with personal protective equipment and a spill kit. Any spillages must be cleaned immediately, and the specimen requester informed as a further specimen will need to be obtained.

10 Management of the patient with a UTI

For people with symptoms of urinary tract infection and bacteriuria the main aim of treatment is relief of symptoms. For people who are asymptomatic the main outcome from treatment is prevention of future episodes.

In people aged 65 years and over, asymptomatic bacteriuria is common and treatment with antibiotics is not always required. Unnecessary antibiotic treatment of asymptomatic bacteriuria is associated with significantly increased risk of clinical adverse events including:

- Clostridioides difficile
- Methicillin-resistant Staphylococcus aureus infections,
- Infection with multi-drug-resistant gram-negative organisms
- The development of antibiotic-resistant urinary tract infections.

For people with an indwelling urethral catheter, antibiotics do not generally eradicate asymptomatic bacteriuria.

Patients with faecal incontinence are at higher risk of developing a UTI and catheter care must be provided or encouraged regularly, guidance can be found in [Urinary Catheter Care Record](#) on the intranet

Please refer to the [Antibiotic prescribing procedure](#) for treatment guidelines and advice.

10.1 Standard Infection Control Procedures (SICP)

Most patients with a UTI do not require isolation to prevent transmission of infection, however patients with a UTI caused by a multi resistant bacteria may require further IPC precautions as outlined in the [Multi resistant gram negative bacteria](#) or [MRSA](#) procedures, to be put in place.

Appropriate personal protective equipment as outlined in the trust [Standard IPC Precautions](#) procedure must be worn when handling body fluids including urine.

The principles for PPE use are also outlined in the [NHS England » National infection prevention and control manual \(NIPCM\) for England](#)

Any spillages of urine must be cleaned away as soon as the spillage is discovered. Clinical teams are responsible for handling spillages of blood and bodily fluids including urine.

Do not pour a chlorine releasing agent directly onto a urine spillage. See [Decontamination of equipment](#) procedure for the correct method of handling spillages.

11 Definitions

Term	Definition
UTI	<ul style="list-style-type: none"> Urinary Tract Infection
AKI	<ul style="list-style-type: none"> Acute Kidney Injury
IPCT	<ul style="list-style-type: none"> Infection Prevention Control Team
CSU	<ul style="list-style-type: none"> Catheter Specimen of Urine
PPE	<ul style="list-style-type: none"> Personal Protective Equipment
SICP	<ul style="list-style-type: none"> Standard Infection Control Procedures
IPC	<ul style="list-style-type: none"> Infection Prevention Control
MRSA	<ul style="list-style-type: none"> Meticillin Resistant Staphylococcus aureus
NIPCM	<ul style="list-style-type: none"> National Infection Prevention control Manuel

12 How this procedure will be implemented

- This procedure will be published on the intranet and Trust website
- Line managers will disseminate this policy to all Trust employees through a line management briefing.

13 Training needs analysis

Staff/Professional Group	Type of Training	Duration	Frequency of Training
All clinical staff	IPC (via ESR)	1 hour online	annually

14 How the implementation of this procedure will be monitored

Number	Auditable Standard/Key Performance Indicators	Frequency/Method/Person Responsible	Where results and any Associate Action Plan will be reported to, implemented and monitored; (this will usually be via the relevant Governance Group).
1	IPC quarterly report	IPC team quarterly	IPCC

15 References

[Introduction | Urinary tract infections in adults | Quality standards | NICE](#) 2015 – last accessed 10/01/23

[Urinary tract infection \(UTI\) - Illnesses & conditions | NHS inform](#) – last accessed 10/01/23

[Urinary tract infections \(UTIs\) - NHS \(www.nhs.uk\)](#) - last accessed 10/01/23

[Definition | Background information | Urinary tract infection \(lower\) - men | CKS | NICE](#) (2022) last accessed 10/01/23

[Urine sampling: catheter specimen of urine - Royal Marsden Manual \(rmmonline.co.uk\)](#) - last accessed 10/01/23

[Urine sampling: midstream specimen of urine: male - Royal Marsden Manual \(rmmonline.co.uk\)](#) – last accessed 10/01/23

[Urine sampling: midstream specimen of urine: female - Royal Marsden Manual \(rmmonline.co.uk\)](#) – last accessed 10/01/23

[NHS England » National infection prevention and control manual \(NIPCM\) for England](#) (2022) last accessed 10/01/23

[The I-Hydrate Project \(uwl.ac.uk\)](#) – last accessed 10/1/23

Abrams & Klevmar "Frequency Volume Charts – an indispensable part of lower urinary tract assessment" 1996
Scandinavian Journal of Neurology 179; 47 – 53.

9 Document control (external)

To be recorded on the policy register by Policy Coordinator

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Appendix 1 - Urine sampling: midstream specimen of urine: males

Pre-procedure

Introduce yourself to the patient, explain and discuss the procedure with them, and gain their consent to proceed.

Fully explain the steps of the procedure.

Ensure a suitable private location.

Equipment required:

Personal protective equipment

Cleaning solution (e.g. soap and water, 0.9% sodium chloride or disinfectant-free solution)

Sterile specimen container with wide opening (CE marked)

Appropriate documentation/forms

Procedure

1. Ask patient to wash hands with soap and water. If assistance is required: the healthcare worker must decontaminate their hands and apply gloves and apron.
2. Ask patient to retract the foreskin and clean the skin surrounding the urethral meatus with soap and water, 0.9% sodium chloride or a disinfectant-free solution.
3. Ask patient to begin voiding first stream of urine (approx. 15–30 mL) into a urinal, toilet or bedpan.
4. Place a wide-necked sterile container into the urine stream without interrupting the flow.
5. Ask the patient to void his remaining urine into the urinal, toilet or bedpan.
6. Encourage the patient to wash hands.

Post-procedure

1. Label sample immediately and complete microbiological request form (including relevant clinical information, such as signs and symptoms of infection, and antibiotic therapy).
2. Dispatch sample to laboratory immediately (within 4 hours) or refrigerate at 4°C.
3. Document the procedure in the patient's Paris case notes.

Note: Consideration should be made for people who have transitioned (trans) including those who have medically transitioned and those who have not.

Appendix 2 - Urine sampling: midstream specimen of urine: females

Pre-procedure

Introduce yourself to the patient, explain and discuss the procedure with them, and gain their consent to proceed.

Fully explain the steps of the procedure.

Ensure a suitable private location.

Equipment required

Personal protective equipment

Cleaning solution (e.g. soap and water, 0.9% sodium chloride or disinfectant-free solution)

Sterile specimen container with wide opening (CE marked)

Appropriate documentation/forms

Procedure

1. Ask patient to wash hands with soap and water. If assistance is required: the healthcare worker must decontaminate their hands and apply gloves and apron.
2. Ask the patient to part the labia and clean the urethral meatus with soap and water, 0.9% sodium chloride or a disinfectant-free solution.
3. Use a separate swab for each wipe and wipe downwards from front to back.
4. Ask the patient to begin voiding first stream of urine (approx. 15–30 mL) into a toilet or bedpan while separating the labia.
5. Place the wide-necked sterile container into the urine stream without interrupting the flow.
6. Ask the patient to void her remaining urine into the toilet or bedpan.
7. Encourage patient to wash her hands.

Post-procedure

1. Label sample immediately and complete microbiological request form (including relevant clinical information, such as signs and symptoms of infection, and antibiotic therapy).
2. Dispatch sample to laboratory immediately (within 4 hours) or refrigerate at 4°C.
3. Document the procedure in the patient's Paris case notes.

Note: Consideration should be made for people who have transitioned (trans) including those who have medically transitioned and those who have not.

Appendix 3 - Urine sampling: catheter specimen of urine

Pre-procedure

Introduce yourself to the patient, explain and discuss the procedure with them, and gain their consent to proceed.

Ensure a suitable private location.

Prepare equipment and place on clean trolley.

Equipment required:

Personal protective equipment

Gloves

Syringe

Appropriate documentation/forms

Universal specimen container

Alcohol-based swab

Procedure

1. *If no urine is visible in catheter tubing:* wash and/or decontaminate physically clean hands with alcohol rub, put on apron and apply non-sterile gloves prior to manipulating the catheter tubing.
2. Apply non-traumatic clamp a few centimetres distal to the sampling port.
3. Decontaminate hands and apply gloves and apron.
4. Wipe sampling port with 2% chlorhexidine in 70% isopropyl alcohol and allow to dry for 30 seconds.
5. In a needleless system: insert syringe firmly into centre sampling port (according to manufacturer's guidelines), aspirate the required amount of urine and remove syringe.
6. Transfer an adequate volume of the urine specimen (approx. 10 mL) into a sterile container immediately.
7. Wipe the sampling port with an alcohol wipe and allow to dry for 15 sec
8. Unclamp catheter tubing.
9. Dispose of waste, remove apron and gloves, and wash hands.

Post-procedure

1. Label sample immediately and complete microbiological request form (including relevant clinical information, such as signs and symptoms of infection, and antibiotic therapy).
2. Dispatch sample to laboratory immediately (within 4 hours) or refrigerate at 4°C.
3. Document the procedure in the patient's electronic care records.

Appendix 4 - Care of urinary catheters

Catheters should be positioned to prevent back-flow of urine. This means that the catheter drainage bag must be lower than the catheter and it must be emptied regularly to prevent it becoming over-full. The drainage bag should be hung on a stand to prevent contact between the bag and the floor.

When the bag is emptied, use a clean container and avoid contact between the container and the drainage system. Hands must be decontaminated and gloves should be worn before emptying each bag. Alcohol swabs should be used to decontaminate the outlet tap before and after emptying the bag. The tap should be completely emptied to minimise the build-up of organisms at the tap outlet. After emptying the drainage bag, gloves should be removed and hands decontaminated.

Urinary drainage bags and catheters should generally be replaced only when indicated by clinical need (e.g. blocked or in the presence of a UTI) or when specified in the manufacturer's instructions. The addition of antimicrobials and/or disinfectants to drainage bags does not reduce the incidence of bacteriuria and is not recommended.

The connection between the catheter and the drainage bag should not be broken without a good reason (e.g. changing of the drainage bag according to the manufacturer's instructions). If a urine sample is required it should be taken from a sampling port using the correct aseptic technique. Urine samples for bacteriological testing must not be taken from the drainage bag.

Meatal (genital area) cleansing with antiseptic solutions is not recommended because it does not reduce the frequency of bacteriuria compared to routine daily bathing. The peri-urethral (area around the urethral opening) area must be kept clean and dry. If faecal incontinence occurs the perineum should be cleaned and the catheter changed without delay.

Bladder irrigation, installation or washout, with antiseptic agents, do not reduce the frequency of catheter-associated infections. Many agents have toxic effects on the bladder mucosa and may contribute to the development of resistant organisms. Bladder irrigation, installation and washout are therefore not recommended for prevention of infection. Bladder irrigation may be needed following urological surgery to prevent obstruction.

Long-term antibiotic prophylaxis is ineffective and should not be used. Treatment of asymptomatic bacteriuria is also not indicated in catheterised patients. Patients should be treated with antibiotics only if there is clinical evidence of infection (e.g. the patient is febrile or has a raised white cell count in blood). If treatment for a urinary tract infection is required the catheter must be changed or if possible removed. Removal of a urinary catheter is often sufficient to eliminate bacteriuria without the need for antibiotic treatment.

If a patient has a catheter-associated urinary tract infection with systemic symptoms, then the catheter should be changed on the third day if the patient is treated with an oral antibiotic.

The patient and carers should be educated about catheter maintenance with an emphasis on techniques for reducing risk of infection. The information provided to the patient and carers should be recorded in the patient's medical record. Any patient with an indwelling urethral catheter in situ

must not be discharged from hospital or transferred to another facility without a plan in place documenting:

- clinical indication for continuing catheterisation
- type of catheter inserted
- date of insertion
- planned date of removal or date of review by an appropriate clinician, such as a continence nurse advisor or urologist.

Appendix 5 - Fluid Intake Matrix Chart

Fluid Matrix Chart

Patients should aim to drink about 8 mugs of fluid each day (approx 1.5 litres). Drinking less than this will result in concentrated urine and higher risk of UTI. This is a guide for the recommended amount of fluid that should be drunk per day based on body weight.

Weight stones	Weight Kg	mls	Fluid ozs	Pints	Mugs
6	38	1,190	42	2.1	4
7	45	1,275	49	2.5	5
8	51	1,446	56	2.75	5-6
9	57	1,786	63	3.1	6
10	64	1,981	70	3.5	7
11	70	2,179	77	3.75	7-8
12	76	2,377	84	4.2	8
13	83	2,575	91	4.5	9
14	89	2,773	98	4.9	10
15	95	2,971	105	5.25	10-11
16	102	3,136	112	5.5	11

This matrix is to be used as a guideline and broadly it is suggested that patients fall within a margin of error of +/- 10%. The guideline applies to body frame and gross obesity should not be taken as a guide for increasing fluid.

Reference: Abrams & Klevmar "Frequency Volume Charts – an indispensable part of lower urinary tract assessment" 1996 Scandinavian Journal of Neurology 179; 47 – 53

FLUID OUTPUT RECORD CHART (Record in mls) This includes urine & vomit please continue to record bowel movements on a separate bowel chart

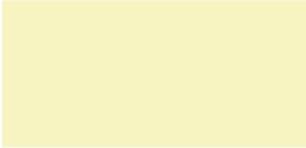
Please ensure total fluid intake and urine out put are recorded.
Please document fluid balance

Record fluid balance in electronic notes


IF PATIENT HAS NOT PASSED URINE IN 12 HOURS OR FOR CATHETERISED PATIENTS 4 HOURS SEEK MEDICAL ADVICE URGENTLY

01:00hrs							
02:00hrs							
03:00hrs							
04:00hrs							
05:00hrs							
06:00hrs							
07:00hrs							
08:00hrs							
09:00hrs							
10:00hrs							
11:00hrs							
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15:00hrs							
16:00hrs							
17:00hrs							
18:00hrs							
19:00hrs							
20:00hrs							
21:00hrs							
22:00hrs							
23:00hrs							
00:00hrs							
Total output	_____ mls						
Fluid balance	_____ mls						

Appendix 7 - Dehydration Urine Colour Chart

Dehydration Urine Colour Chart	
	Probably well hydrated. Drink water as normal.
	Could stand to drink a little water now, maybe a small glass of water.
	Drink about 1/2 bottle of water (1/4 litre) within the hour, or drink a whole bottle (1/2 litre) of water if you're outside and/or sweating.
	Drink about 1/2 bottle of water (1/4 litre) right now, or drink a whole bottle (1/2 litre) of water if you're outside and/or sweating.
	Drink 2 bottles of water right now (1 litre). If your urine is darker than this and/or red or brown, then dehydration may not be your problem. Seek further advice.

Appendix 8 - Equality Analysis Screening Form

Please note: The Equality Analysis Policy and Equality Analysis Guidance can be found on the policy pages of the intranet

Section 1	Scope
Name of service area/directorate/department	Infection Prevention Control Team
Title	Urinary Tract Infection (UTI) Prevention and Management
Type	Procedure
Geographical area covered	Trust wide
Aims and objectives	To emphasise the importance of prevention and management of UTI To ensure all staff are aware of the appropriate procedures to aid in diagnosis and treatment of UTI
Start date of Equality Analysis Screening	December 2022
End date of Equality Analysis Screening	21 January 2023

Section 2	Impacts
Who does the Policy, Service, Function, Strategy, Code of practice, Guidance, Project or Business plan benefit?	TEWV patients
Will the Policy, Service, Function, Strategy, Code of practice, Guidance, Project or Business plan impact negatively on any of the protected characteristic groups?	<ul style="list-style-type: none"> • Race (including Gypsy and Traveller) NO • Disability (includes physical, learning, mental health, sensory and medical disabilities) NO • Sex (male, female and gender neutral etc.) NO • Gender reassignment (Transgender and gender identity) NO

	<ul style="list-style-type: none"> • Sexual Orientation (Lesbian, Gay, Bisexual, Heterosexual, Pansexual and Asexual etc.) NO • Age (includes, young people, older people – people of all ages) NO • Religion or Belief (includes faith groups, atheism and philosophical beliefs) NO • Pregnancy and Maternity (includes pregnancy, people who are breastfeeding and on maternity leave) NO • Marriage and Civil Partnership (includes opposite and same sex couples who are married or civil partners) NO • Armed Forces (includes serving armed forces personnel, reservists, veterans and their families) NO
Describe any negative impacts	
Describe any positive impacts	Prompt recognition of signs and symptoms of UTI, Promotion of awareness of the importance of hydration in the prevention of UTI

Section 3	Research and involvement
What sources of information have you considered? (e.g. legislation, codes of practice, best practice, nice guidelines, CQC reports or feedback etc.)	NICE guidelines NHS best practice
Have you engaged or consulted with service users, carers, staff and other stakeholders including people from the protected groups?	Yes IPCC members Pharmacy team Dietetics Lead Nurse Physical Health
If you answered Yes above, describe the engagement and involvement that has taken place	Colleagues asked to review the procedure once drafted and where appropriate changes made in line with expertise and guidance.

If you answered No above, describe future plans that you may have to engage and involve people from different groups	
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Section 4	Training needs
As part of this equality analysis have any training needs/service needs been identified?	No
Describe any training needs for Trust staff	
Describe any training needs for patients	
Describe any training needs for contractors or other outside agencies	

Check the information you have provided and ensure additional evidence can be provided if asked

Appendix 9 – Approval checklist

To be completed by lead and attached to any document which guides practice when submitted to the appropriate committee/group for consideration and approval.

	Title of document being reviewed:	Yes/No/ Not applicable	Comments
1.	Title		
	Is the title clear and unambiguous?	Yes	
	Is it clear whether the document is a guideline, policy, protocol or standard?	Yes	
2.	Rationale		
	Are reasons for development of the document stated?	Yes	
3.	Development Process		
	Are people involved in the development identified?	Yes	
	Has relevant expertise has been sought/used?	Yes	
	Is there evidence of consultation with stakeholders and users?	No	
	Have any related documents or documents that are impacted by this change been identified and updated?	Yes	
4.	Content		
	Is the objective of the document clear?	Yes	
	Is the target population clear and unambiguous?	Yes	
	Are the intended outcomes described?	Yes	
	Are the statements clear and unambiguous?	Yes	
5.	Evidence Base		
	Is the type of evidence to support the document identified explicitly?	Yes	
	Are key references cited?	Yes	
	Are supporting documents referenced?	Yes	
6.	Training		
	Have training needs been considered?	Yes	
	Are training needs included in the document?	Yes	

	Title of document being reviewed:	Yes/No/ Not applicable	Comments
7.	Implementation and monitoring		
	Does the document identify how it will be implemented and monitored?	Yes	
8.	Equality analysis		
	Has an equality analysis been completed for the document?	Yes	
	Have Equality and Diversity reviewed and approved the equality analysis?	Yes	
9.	Approval		
	Does the document identify which committee/group will approve it?	Yes	
10.	Publication		
	Has the document been reviewed for harm?	Yes	
	Does the document identify whether it is private or public?	Yes	
	If private, does the document identify which clause of the Freedom of Information Act 2000 applies?	N/A	