lancashire.gov.uk

Urinary Tract Infections



Introduction



Welcome/Housekeeping/registration



Intro to the IPC Team.



Presentation/Activities



Evaluation forms/paper or online/certificate of attendance





Aims of todays session are

- To understand what a urinary tract infection (UTI) is and how it should be managed/treated.
- To understand how to prevent UTI's, how to recognise one and when to escalate treatment
- To understand the importance of reducing antimicrobial resistance (AMR)



Why are we doing this forum?

- We sent a UTI survey to a selection of care/nursing homes across the Lancashire footprint to look at any gaps in knowledge
- We found that 57% of these social care settings still 'dipsticked' if an UTI was suspected even though 84% of these settings were aware that is was not a useful tool to diagnose UTI's in people aged 65 and over
- 51 % of the settings surveyed were aware of the 'To dip or not to dip' initiative
- The findings showed that there was a knowledge gap in UTI management and treatment





Only women can get UTIs

False

A UTI can't go away on its own

False

You need antibiotics to clear an UTI?

False

Women, specifically, should wipe from front to back after going to the bathroom to prevent bacteria from the anus getting into the urinary tract

True

UTIs are caused by not showering or bathing

False

Common symptoms of UTIs include an urgent need to urinate, a burning feeling when urinating, an aching feeling, pressure or pain in the lower abdomen, cloudy or blood-tinged urine and a strong odour to your urine



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Health Care Associated Infections (HCAIs)

- 300,000 HCAIs per year in UK
- Costs to NHS £1 billion per year
- Urinary tract infection (UTI) is the most common HCAI, accounting for 17.2% of all HCAIs
- Between 43% and 56% of UTIs are associated with an indwelling urethral catheter



So what is a Urinary Tract Infection (UTI)?

- Urinary tract infections (UTI's) are infections of the bladder, kidneys, or urethra
- A UTI is caused by bacteria or fungus entering the urinary tract via the urethra – the tube that allows the passage of urine from the bladder to outside the body
- The bacteria/fungus can then move upwards through the urinary tract, infecting the bladder and sometimes the ureters and kidneys
- The most common cause is due to a **bacteria** called *Escherichia coli* (E. coli). While you can get a UTI from other types of bacteria, E. coli is the culprit 90% of the time



What is E-coli

- E. coli is a bacteria commonly found in the intestines of humans and other animals
- E. coli does not usually cause any problems whilst it is living in the gut, but if the bacteria contaminates areas of vulnerability (wounds, catheter sites etc.), infection can occur



How is E-coli spread?

- Via diarrhoea (C. diff or Norovirus)
- Contaminated hands
 - Residents/service users
 - Staff
- Contaminated equipment/devices
 - Catheters
 - Commodes, bath hoists, toilet seats bedpan holder
 - Cleaning solutions and cloths
- Poor toileting care
 - Bacteria from the anus tracks to the urethra



Who is more at risk of UTI's

- Older age
- Female due to the their anatomy
- Kidney/bladder stones
- Faecal (bowel) incontinence
- Urinary catheterisation
- Dehydration
- Problems emptying the bladder
- Diabetes
- immunocompromise



Types of UTI

- There are 4 types of UTI:
- Urethritis <u>Lower UTI</u>
- Cystitis
- Pyelonephritis _____ Upper UTI
- CAUTI

There is also a condition that shows levels of bacteria in the urine but the person has no UTI symptoms:

• Asymptomatic bacteriuria



Anatomy Game









Urethritis

Urethritis is a UTI that affects the **Urethra**.

Symptoms of Urethritis usually present as:

- Discharge
- Burning sensation/pain when passing urine



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Cystitis

Cystitis is a UTI that affects the bladder.

Symptoms of cystitis usually present as:

- Increased urine frequency
- Burning sensation/pain when you pass urine
- Lower stomach pain
- Cloudy urine
- Blood in the urine





Symptom Management – Self Care

- Encourage fluids to flush out the bladder (check if the resident is on a fluid restriction first)
- Limit drinks and food that can irritate the bladder tea/coffee, carbonated drinks, oranges, grapefruits and tomato based products, spicy food
- Offer paracetamol
- Encourage mobilisation



DRINKING FOR A HEALTHY BLADDER



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Pyelonephritis

Pyelonephritis is a UTI that affects the kidneys (and ureters).

Symptoms of Pyelonephritis usually present as:

- Fever
- Chills
- Nausea/vomiting
- Pain in the upper back or on the side of the back





Catheter related UTI (CAUTI)

• Catheter associated UTI's (CAUTI) usually present as:



Signs of UTI in catheterised residents/service user

If **any of the following symptoms** are present in **catheterised** residents/service user, suspect UTI:

- Inappropriate shivering/chills or a high (>38°C) or low (<36°C) temperature
- New lower back pain
- New or worsening confusion or agitation

Please:

- Inform the GP (or 111 out of hours)
- Obtain a urine sample
- Arrange for a catheter change



Signs of UTI in residents without a catheter

If **two or more** of the following symptoms are present in residents/service user **without a catheter**, suspect UTI:

- Pain on passing urine
- Need to pass urine urgently or new/worsening incontinence
- Passing urine more frequently than usual
- Pain between the belly button and the pubic hair line
- Blood in urine
- Inappropriate shivering/chills or a high (>38°C) or low (<36°C) temperature
- New lower back pain
- New or worsening confusion or agitation

Please:

- Inform the GP (or 111 out of hours)
- Obtain a urine sample



Care Home UTI Assessment Tool

Older patients (≥65) with suspected UTI (urinary tract infection) - Guidance for Care Home staff:

- Complete sections 1 to 4 and resident's details and email to GP
- Keep the original form in the resident's notes
- DO NOT PERFORM URINE DIPSTICK NOT recommended in patients >65 years
- Clear urine UTI highly unlikely

Pan Mersey Antimicrobial Guidelines

West Lancashire Clinical Commissioning Group

Resident name: Click or tap here to enter text.	
DOB:Click or tap here to enter text.	
Care Home: Click or tap here to enter text.	
Carer:Click or tap here to enter text.	
Date:Click or tap to enter a date.	

1. Does the resident have a catheter?	🗆 Yes	□ No	If yes, reason for catheter: Click or tap here to enter text.		
2. Signs of any other infection source?	🗆 Yes	□ No			
Tick any NEW symptoms that are present:	Cough	Shortness of breath	Sputum production	🗆 Diarrhoea	
	Nausea/vomiting	Abdominal pain	Red/warm/swollen area of the skin		

3. Can the resident communicate symptoms? See See See See See See See See See Se	4. Record for all residents - Tick any signs/symptoms that are present:		
Tick any NEW signs/symptoms that are present:	□Temperature above 38°C or below 36°C or shaking chills (rigors) in last 24 hours		
Dysuria (Pain on urinating)	Heart Rate >90 beats/min		
Urgency (Need to pass urine urgently/new incontinence)	□Systolic blood pressure <110mmHg		
Frequency (Need to urinate more often than usual)	□Respiratory rate >20 breaths/min		
□Suprapubic tenderness (Pain in lower tummy/above pubic area)	Diabetic		
□Haematuria (Visible blood in urine)	□If not diabetic - Blood glucose >7.7 mmol/L (if able to measure)		
□Incontinence (Lack of voluntary control over urination)	New onset or worsening confusion or agitation		
□Loin pain (Pain either side of spine between ribs & pelvis)	Any other information: Click or tap here to enter text.		

5. GP Management Decision - tick all which apply, notify home of decision made and scan onto EMIS record:					
Review in Click or tap here to enter text.	□ MSU	Give person specific	Arrange trial without	Antibiotic Prescribed	
hours		hydration advice	catheter		
NB. Send a urine for culture in over 65 year olds if symptomatic and antibiotic given, suspected pyelonephritis or sepsis, suspected UTI in men, failed treatment or persistent symptoms, those with a catheter & recurrent UTI.					
Other action: Click or tap here to enter	Name: Click or tap here to		Designation: Click or tap here	Date: Click or tap to enter a	
text.	enter text.	x	to enter text.	date.	
		Signed:			



Dipsticks lead to unnecessary antibiotic use

Asymptomatic bacteriuria:

Up to 50% nursing home population and 90% of patients with long term catheters have a positive dipstick with NO UTI present, due to asymptomatic bacteriuria.

A positive dipstick is more likely to lead to treatment which <u>may not be</u> <u>appropriate</u>. If asymptomatic bacteriuria is treated, there is no benefit to the resident, and it could lead to harm.

For example:

- Increased risk of difficult to treat infections *C diff.*
- Increased risk of resistant urine infections ESBL *E.coli*
- Side effects of antibiotic medications
- Negative effects on other medication the patient takes

This has led to the 'To dip or not to dip' initiative.



To Dip Or Not To Dip!

- The first 'To Dip Or Not To Dip' project was in South-West England:
- **<u>Reduced</u>** antibiotic use in Care Home residents by over 60%
- <u>Reduced</u> emergency admissions for UTI and dehydration by 50%





Why dipstick's are not advised

Reasons why a dipstick will indicate an urine infection when infection is not present:

- Urine is not sterile it can contain asymptomatic bacteriuria
- The older generation are more likely to have problems with emptying the bladder completely – stagnant urine is ideal for bacteria to grow
- Catheterisation can cause new bacteria to enter the bladder initially
- NICE guidance states that urinalysis (dipsticks) should not be used for over 65's or for people with a catheter in situ



Protect our Antibiotics!

We need to protect our antibiotics!

- If a UTI is suspected than a urine sample should be collected and sent for culture this will show
 if there is an infection and what the correct antibiotics are to treat the UTI with
- E. Coli bacteraemia rates have increased in recent years and are becoming more difficult to treat, due to the increasing resistance of the bacteria to antibiotics

What can you do?

- Educate your staff around the NICE guidance and the 'To Dip or Not To Dip' initiative
- Become an Antibiotic Guardian can help prevent or minimise the real issues surrounding antibiotic resistance
- As an Antibiotic Guardian, you can encourage others to join you in protecting antibiotics against the growing threat of antibiotic resistance

Click the link to make your pledge: Become an Antibiotic Guardian (publishing.service.gov.uk)



Urine samples

- Urine cultures are very important in the elderly to guide correct antibiotic choice
- Try to obtain a urine sample when the resident/service user is in the middle of passing urine (rather than at the start).
- Fill in the residents/service user's details and type of sample carefully to help the lab to process the sample.
- Samples should be taken to the GP practice as soon as possible. If there is a delay, they can be refrigerated until taken to the GP practice at the next possible opportunity



How to take a urine sample (non catheterised residents/service user)

- Wash hands
- Put on PPE single use apron and gloves
- Clean the residents/service users genital area (front to back for women)
- Place a clean, single use container into the bedpan, commode or toilet
- Ask the resident/service users to pass urine into the container
- Pour urine from the container into the sterile sample pot



How to take a urine sample using collection pads

Consider using urine collection pads in those with limited mobility or incontinence:

- Wash hands
- Put on PPE single use apron and gloves
- Clean the residents/service users genital area (front to back for women)
- Place the pad on top of the usual incontinence pad to collect the urine sample directly
- Extract the sample from the wet pad using the syringe provided and dispense this into the 20ml urine sample pot provided





How to take a urine sample from catheterised residents

For Nursing Residents:

- Registered Nurse only to take catheter urine sample using aseptic non-touch technique
- If antibiotics are commenced for UTI, catheter change should be performed by Registered Nurse as soon as possible

For Residential Residents:

- Contact District Nursing Team to arrange for a sample to be take
- If antibiotics are commenced for UTI, catheter change should be arranged with District Nurses as soon as possible.



How to take a urine sample from a catheter

- If no urine visible in catheter tubing: wash/decontaminate physically clean hands with alcohol rub, don apron and apply non-sterile gloves prior to manipulating the catheter tubing.
- Apply non-traumatic clamp a few centimetres distal to the sampling port.
- Wash hands with bactericidal soap and water, or decontaminate physically clean hands with alcohol rub and don gloves.
- Wipe sampling port with 2% chlorhexidine in 70% isopropyl alcohol and allow drying for 30 seconds.
- insert syringe firmly into centre sampling port (according to manufacturer's guidelines), aspirate the required amount of urine and remove syringe.
- Transfer an adequate volume of the urine specimen (approx. 10 mL) into a sterile container immediately.
- Discard syringe into sharps container.
- Wipe the sampling port with an alcohol wipe and allow to dry.
- Unclamp catheter tubing.
- Dispose of waste, remove apron and gloves and wash hands.
- Label sample and complete microbiological request form including relevant clinical information, such as signs and symptoms of infection, antibiotic therapy.
- Dispatch sample to laboratory immediately (within 4 hours) or refrigerate at 4°C.



Could it be Sepsis?

Sepsis Risk factors (care home population)

- Age > 75
- Impaired immunity (e.g. diabetes, steroids, chemotherapy)
- Recent trauma / surgery / invasive procedure
- Indwelling lines
- Broken skin

Lower UTIs are common and aren't usually a cause for major concern. Upper UTIs can be serious if left untreated, as they could damage the kidneys or spread to the bloodstream.



Sepsis from untreated UTI

- Untreated UTI's can cause Sepsis (urosepsis)
- It is important to recognise the signs and symptoms to get the right treatment.







Symptoms of Urosepsis





Sepsis Screening Tool (Pre-hospital)

- High temp (fever) or low body temp
- Chills and shivering
- Fast heartbeat
- Fast breathing
- No urine output in the last 12 hours
- Cold clammy and pale or mottled skin

Sepsis-Prehospital-12-231219.pdf (sepsistrust.org)





Sepsis Red Flags

If signs of sepsis or red flag symptoms dial 999 or follow the person's advanced plan for accessing urgent medical help

• Sepsis red flags:

- Objective evidence of new or altered
 mental state
- Systolic BP ≤ 90 mmHg (or drop of >40 from normal)
- Heart rate \geq 130 per minute
- Respiratory rate ≥ 25 per minute Needs
 O2 to keep SpO2 ≥ 92% (88% in COPD)

- Non-blanching rash / mottled / ashen / cyanotic
- Lactate ≥ 2 mmol/l
- Recent chemotherapy
- Not passed urine in 18 hours (<0.5ml/kg/hr if catheterised)



NEWS2 and RESTORE2

- news 2 and restore 2 is used to identify acutely ill patients, including those with sepsis
- These charts are mainly used to help recognise when a resident may be deteriorating or is at risk of physical deterioration

Chart 1: The NEWS scoring system

Physiological parameter	3	2	1	Score 0	1	2	3
Respiration rate (per minute)	≤8		9–11	12–20		21–24	≥25
SpO ₂ Scale 1 (%)	≤91	92–93	94–95	≥96			
SpO ₂ Scale 2 (%)	≤83	84–85	86–87	88–92 ≥93 on air	93–94 on oxygen	95–96 on oxygen	≥97 on oxygen
Air or oxygen?		Oxygen		Air			
Systolic blood pressure (mmHg)	≤ 90	91–100	101–110	111–219			≥220
Pulse (per minute)	≤40		41–50	51–90	91–110	111–130	≥131
Consciousness				Alert			CVPU
Temperature (°C)	≤35.0		35.1–36.0	36.1–38.0	38.1–39.0	≥39.1	



Preventing UTI: Hand hygiene

- Use the correct Hand washing technique and:
 - Keep your arms bare below the elbow (remove wrist and hand jewellery)
 - Have short, clean fingernails without nail polish or false nails
 - Cover cuts/grazes with a waterproof dressing
- Follow the 5 moments of hand hygiene
- Use gloves appropriately:
 - gloves are not a substitute for hand hygiene
 - Prolonged and unnecessary use may cause adverse reactions and skin sensitivity, and may lead to cross-contamination of the patient environment



Preventing UTI: Appropriate glove use

- Gloves provide an essential layer of barrier protection against direct contact with infectious agents that are transmitted during exposure to blood, saliva, contaminated objects and surfaces
- Use gloves when:
 - Anticipating contact with blood or another bodily fluid
 - Transmission-based precautions (contact, airborne or droplet precautions) are required (follow local policy)
 - Undertaking an aseptic non-touch technique procedure sterile/non-sterile gloves chosen in line with procedure and local policy





UTI prevention – Self care

- Good personal hygiene genital areas should be cleaned from front to back with a single use cloth (to prevent bacteria such as E. coli entering the urinary tract from the bowel). Mild soap and water should be sufficient
- Hand hygiene (staff and residents)
- PPE
- Frequent position changes of residents
- Frequent bladder emptying
- Frequent incontinence pad changes and barrier cream
- Hydration (1.5 2 litres a day, from food and drink)
- Avoid constipation



Preventing E. coli: Environmental cleaning

Cleaning products that are suitable for killing E. coli bacteria should have the this number on the bottle:

• BS EN 1276 or BS EN 13697





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Preventing UTI's - Hydration

Drinking more water can prevent UTI's:

Drinking water 🛑 more urine production 🛑

flushes out bacteria in the bladder prevents infection



Hydration to reduce UTI'S

- Most people need 1500-2000mls of fluid per day, which is equivalent to 8 cups.(* If resident is NOT on a fluid restriction)
- Urine colour can help determine if a resident is dehydrated. (*some medications can alter urine colour check with GP).







Are you drinking enough? **Colours 1-3 suggest normal urine** Check the colour of your urine against this colour chart to see if you're 2 drinking enough fluids . . throughout the day. If your urine matches 1-3, 3 . . then you're hydrated. Colours 4-8 suggest you need to rehydrate If your urine matches 4-8, 4 then you're dehydrated and you need to drink 5 . . more. If you have blood in your urine (red or dark brown), 6 . . seek advice from your GP. Please be aware that . . certain foods, medications and vitamin supplements can change the colour of 8 . . urine. Community Infection Prevention and Control, Harrogale and Diabici NHS Foundation Trust

NHS

Community Infection Prevention and Control, Plantigete and Debtot 1015 Pour www.infectionpreventioncontrol.co.uk September 2018

Hydration Game













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Urine colour chart





Preventing UTI: Documentation

Fluid balance

- Not all residents/service users will be able to have 1500mls-2000mls of fluid a day due to certain medical conditions.
- Make sure that resident's are not on a fluid restriction due to their condition or medications check with GP.
- Using a fluid balance chart can help keep track of the amount of fluids being consumed in a day and can keep track of those who have to restrict their intake.
- It will also help identify any problems with urine output.



Recording fluid balance

- There are two ways you could keep track of fluid intake:
- Using a fluid balance chart that carers/nurses fill in every hour (Appendix A). This will also keep tack of urine output to alert staff to any problems with input and output (they should be balanced).
- Using a self reported fluid input chart that the resident/service user completes themselves (Appendix B).



Appendix A

Fluid balance chart to be completed by health care workers/nurses

(Derbyshire Community Health Services NHS Foundation Trust, 2018)

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Date	of Birth:			NHS No			
Comr	munity / Area / Ho	spital / War	d				
Date:	//		24 HOUR FLUID E	BALANCE C	HART		
_		In	take			Output	
Time	Oral Volu Type and an	ne	Suboutaneous/ Intravenous	Running Total	Urine Volume Catheter	Other (Type) Volume	Running Total
	Offered	Taken	fluids		Yes / No		
01.00							
02.00							
05.00							
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22.00							
23.00							
24.00							
Total							
		2	4 Hour Total Intake		24	Hour Total Output	



Appendix B

Self reported fluid balance chart.

(Derbyshire Community Health Services NHS Foundation Trust, 2018)

orenames: Date of Birth	: NHS No:11	Date of Assessment
Review Date	1/7/18	Health Service NHS Foundation Tru Hospital Ward
Version Date	1/7/16 approved as part of the Hydration Leaflet which was approved as part of the Hydration Policy	Derbyshire Communi
Version No	1.0	IN/A)
Self-Reported F Version No	uid Intake - 24 hours-Y1.00-0514-ASS-DCHS 1.0	NH

SELF REPORTED FLUID INTAKE - 24 HOURS

Record all drinks that you have in a 24 hour period (except alcohol). After each drink tick the box that represents the cup or glass that looks most like what you drank from (make a note if you don't manage the full drink). Complete estimated intake for each cup type based on the last box ticked. Add all the type together to give your overall estimated daily fluid intake. You should aim to drink at least 1600ml – 2000ml (around 8 glasses a day).





Catheter Passport

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- The information in it will help you care for the catheter and to ensure that the correct information is recorded in it by health professional
- Follow the guidelines contained in this booklet to help minimise the risk of developing a CAUTI
- It should state why the resident has a catheter HOUDINI:
 - Haematuria only requires catheter if in clot retention
 - Obstruction or retention
 - Urology surgery
 - Damaged skin open sacral or perineal wound in an incontinent patient
 - Input and output, fluid monitoring
 - Nursing care end of life or comfort care
 - Immobility due to physical constraint, for example unstable fracture and unable to use bottles or bedpans
 - Other
- Follow the guidelines contained in this booklet to help minimise the risk of developing a CAUTI
- They can be printed off here: <u>https://www.england.nhs.uk/patient-safety/urinary-catheter-tools/</u>



Remember.....

- Not all residents/service users will require antibiotics
- Colonisation of bacteria is not infection
- 50% of older people in residential care have clinically significant asymptomatic bacteriuria
- Urinary dipstick analysis testing is not a reliable diagnostic for a UTI
- If symptoms of UTI or systemic infection consult the GP/Practitioner for advice and guidelines



Resources

- Out of hospital management of UTIs in elderly patients -YouTube
- URINARY TRACT INFECTIONS A leaflet for older adults and carers: <u>7E38B07344B84761932871EE602DD2EF.ashx</u> (rcgp.org.uk)
- <u>2020-AKI-for-Care-Homes.pdf (thinkkidneys.nhs.uk)</u>







Evaluation Forms



