Document Control

Title

Protocol for the Management of Urinary Tract Infections for Adult Females and Children (3 years and over) in MIUs

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Directorate Emergency Services, Logistics and Resilience	**Department** Emergency Department

Version	Date Issued	Status	Comment / Changes / Approval
0.1	Apr 2015	Draft	Initial version for consultation
1.0	May 2016	Final	Ben Leger (Clinician) and Chris Bowman (Clinical Director) May 2016
1.1	July 2018	Revision	Update as per local primary care formulary guidance, removal of reference to first and second line choices, updated trust logo, addition of self-care advice, exclusions and referral criteria, addition of time limit for resistance in urine samples to refer. Approved at DTC 19th July.

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July 2018	July 2021	Three years

Consulted with the following stakeholders:

- Antibiotic pharmacist
- MIU Leads

Approval and Review Process

- Lead Clinician

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Protocol for the Management of Urinary Tract Infections for Adult Females and Children (3 years and over) v1.1 May16

Policy categories for Trust's internal website (Bob) MIU Protocol	**Tags for Trust's internal website (Bob)** None

CONTENTS

1. Purpose

This Protocol is for the use by staff employed by Northern Devon Healthcare Trust who has achieved the agreed clinical competencies to work under this protocol.

2. Presenting Symptoms

- Urinary frequency
- Urgency
- Cystitis symptoms
- Back pain / loin tenderness
- Fever pyrexia
- Painful micturition
- Supra pubic pain
- Malaise
- Haematuria
- Burning / stinging sensation
- Cloudy or offensive urine
- Changes to continence

Specific to children:

- Dysfunctional voiding
- Abdominal pain
- Vomiting

Specific to female patients:

- Lack of vaginal discharge

Elderly patients:

- Secondary incontinence
- Confusion
- Anorexia
- Pyrexia

3. History

3.1. Refer to protocol for History Taking and Clinical Documentation.

3.2. Ask about and document all findings fully – positive and negative in case of future litigation:

- Take an allergy history
- Take a medications history
  - ⇨ Particularly take note of drugs which have a side effect of causing cystitis, such as: methotrexate, cyclophosphamide, NSAIDs, allopurinol, danazol (list not exhaustive)
- Patients taking ANY of the following drugs:
  - ⇨ Antiepileptics – e.g. phenytoin, valproate, carbamazepine
  - ⇨ Antimalarials-pyrimethamine
  - ⇨ Immunosuppressants: Ciclosporin, tacrolimus, sirolimus
  - ⇨ Cytotoxics: azathioprine,mercaptopurine,methotrexate
  - ➢ These patients will need to be referred to a medical practitioner.
- Duration of symptoms
- Previous history of renal stones or pyelonephritis
- Previous episodes of UTI and treatments
- Any self-care measures
- Patient immunocompromised
- History of renal disease
- Recent perianal, gynaecological or urological surgery or instrumentation
- Recent chemotherapy or radiotherapy in the bladder or surrounding area
- Recent or current catheterisation
- Possible pregnancy
- Urinary tract abnormality – urine sample will be necessary in adult females with UTI (CKS 2012)

Specific to children:

- Recurrent fevers
- Antenatally diagnosed renal abnormality
- Family history of vesicoureteric reflux or renal disease
- Constipation
- Dysfunctional voiding

4. Clinical Examination

4.1. Examine the patient and document fully the following information, positive and negative findings in case of future litigation:

- Observe for systemic symptoms
- Pallor
- Flushed
- Lethargy
- Malaise
- Pain
- Pyrexia
- Dehydration
- Acute onset of confusion
- Palpate kidneys and abdomen if competent to do so
- Refer to abdominal pain protocol if required
- Record vital signs and EWS, include temperature
- Record colour, site and consistency of any crusting or discharge
- Colour and consistency of urine (and if it contains any particles, blood clots etc)
- Look for rashes, and record location and appearance

4.2. Investigations

- See appendix D – Diagnosis of Urinary Tract Infections (UTIs): Quick Reference Guide for Primary Care (PHE, 2017)
- Follow guidance in NEW Devon Formulary, via https://northeast.devonformularyguidance.nhs.uk/formulary/chapters/5.-infections/urinary-tract-infections for adult patients
- Follow guidance in NEW Devon Formulary, via https://northeast.devonformularyguidance.nhs.uk/referral-guidance/northern-locality/paediatrics/urinary-tract-infection-uti-suspected for paediatric patients

5. Exclusions and Referral

5.1. Exclusions:

- All male patients
- Children under 3 years of age
- Pregnant women
- Renal colic
- Pyelonephritis
- Immunocompromised patients, and those on immune suppressing medications

5.2. Refer:

- Refer children who are unable to be treated with trimethoprim and who are under 12 years old to a medical practitioner
- Women with pelvic pain and/or vaginal discharge
- Patients who:
  - Currently take a combination of aldosterone antagonist (e.g. spironolactone, eplerenone) or thiazide-type diuretic (hydrochlorothiazide, bendroflumethiazide, indapamide) with other drugs known to cause hyperkalaemia e.g. ACE-inhibitors, angiotensin II receptor blockers, NSAIDs, heparin and its derivatives (e.g. Clexane® injections), amiloride / co-amilofruse / co-amilozide;
  - **OR** who have known hyperkalaemia
  - **AND** who cannot be given nitrofurantoin as Patient Group Direction (PGD)
- Patients with raised blood glucose
- Urinary retention
- Known urinary tract abnormality
- Repeated urinary symptoms but negative cultures and/or dipstick urinalysis
- History of resistance to PGD medications on urine samples in the past 5 years
- Rash around lower abdomen characteristic of shingles-type rash, history of shingles, history of genital herpes, recent or current chickenpox
- Urgently refer patients who are too systemically unwell to be safely discharged home with PGD antibiotics, or who show signs of sepsis on examination
- Refer all children who are identified as intermediate or high risk using the Traffic Light System identified in the Feverish Illness in Children Guideline (NICE May 2013).
- Patients with genital thrush in addition to urinary symptoms

6. Treatment

6.1. Follow NEW Devon Formulary Guidance when choosing which agent to use first-line (via https://northeast.devonformularyguidance.nhs.uk/).

6.2. For UTI less than 2 weeks ago send urine for culture and sensitivity before commencing antibiotic treatment as per Patient Group Direction.

6.3. Trimethoprim or nitrofurantoin as per Patient Group Direction, depending on contraindications and cautions such as age and co-morbidities as specified in document above.

6.4. Catheters in for longer than 7 days should be replaced before or as soon as possible after discharge, and definitely whilst still on antibiotic treatment – remember to update catheter passport

6.5. Ensure all women taking oral contraception are given current advice as included in the Patient Group Direction

6.6. Advise patients to see their GP if no better in 3 days or their symptoms worsen

7. Self-Care Advice

7.1. Encourage adequate hydration – for younger children, and adult patients with cognitive impairment are aware that urinary symptoms may severely limit oral intake due to discomfort when passing urine. Carers should be advised to monitor fluid intake and urine output carefully to watch for signs of dehydration.

7.2. Paracetamol and/or ibuprofen may be used as an antipyretic and/or analgesic for fever and pain. NSAIDs are less preferred if no antibiotic is being given (some evidence that these can worsen recovery)

- Patients should be encouraged to purchase these items OTC in line with new NHS recommendations. If out of hours, or significant difficulty obtaining a supply due to social circumstances, consider using PGD to supply.

7.3. Constipation can be a contributing factor in some UTIs. Ask about bowel habit and give dietary advice, or recommend OTC laxatives if the patient has a history of constipation and no contraindications to laxatives.

7.4. Over the counter remedies generally have a lack of good evidence to support their use and should not be recommended. If a patient asks about them, the following advice should be given:

- Potassium citrate:
  - It is used for alkalinisation of urine to stop the burning/stinging sensation when passing urine.
  - If the patient is given trimethoprim as PGD, it may be used.

- If the patient is given nitrofurantoin as PGD, potassium citrate will cause it to work less well and should not be used whilst on these antibiotics.

- Cranberry juice or cranberry supplements: Refer to the patient's community Pharmacist for patients who normally take medications prescribed by their GP, and those who take herbal remedies at home. Some medications (particularly warfarin and anti-epileptics) are affected quite strongly and will need interactions checking.

7.5. If triggers for the urinary symptoms are identified (such as holding off going to the toilet for a long time, sexual intercourse, tight fitting clothing), advise avoidance of these in future.

8. Discharge Pathway

8.1. Assess and document pain score prior to discharge

8.2. Ensure patient is issued with appropriate advice sheet (if available) and that patient understands the need to return if symptoms change or worsen. Advise patients to see their GP if no better in 3 days, or sooner if their symptoms worsen and include red flag signs

8.3. Discuss home analgesia with patient, parent or carer and advice OTC medication or supply TTO medication as per PGD.

8.4. For patients whose work conditions do not allow them to take frequent breaks to have drinks or go to the toilet whilst they are suffering from a UTI, consider referral to a Doctor for a "fit note"

8.5. Consider safeguarding or occupational therapy referral for elderly, frail or disabled patients if there do not appear to be adequate facilities for taking them to the toilet regularly in their usual place of residence

8.6. DOCUMENTATION TO BE COMPLETED

- Clinical treatment record as per Documentation & record keeping policies. Copy of clinical treatment record to General Practitioner; to be sent to surgery as per Record keeping policy.
- For patients being transferred to secondary care, ensure a copy of the clinical treatment record is sent with patient. A copy will also be sent to surgery in normal manner.
- **For patients seeing their General Practitioner in next 24 hours ensure patient is given a copy of the clinical treatment record to take with them. A copy will also be sent to surgery in the normal manner.**

8.8. BEFORE DISCHARGE ENSURE

- Those patients who have been referred for further acute intervention has appropriate transport to meet their needs, all relevant treatment has been prescribed and administered and correct information and documentation is given to the patient.
- The patient understands that if condition deteriorates or they have further concerns they should seek further advice.
- The patient demonstrates understanding of advice given during consultation.
- The patient has been provided with written advice leaflet to re-enforce advice given during consultation.
- The patient demonstrates an understanding of how to manage subsequent problems.

9. References

National Institute of Clinical Excellence (May 2013)

Feverish Illness in Children CG160

https://www.nice.org.uk/guidance/cg160/resources/support-for-education-and-learning-educational-resource-traffic-light-table-189985789

BNF and BNFC https://www.new.medicinescomplete.com/mc/

https://northeast.devonformularyguidance.nhs.uk/formulary/chapters/5.-infections/urinary-tract-infections

Management of suspected bacterial urinary tract infection in adults: a national clinical guideline. Scottish Intercollegiate Guidelines Network. http://www.sign.ac.uk (2012)

NICE Clinical Knowledge Summaries. 2015. Urinary Tract Infection (lower) – women. Scenario: UTI – (no visible haematuria, not pregnant or catheterized). https://cks.nice.org.uk/urinary-tract-infection-lower-women#!scenario

APPENDIX A – Essential Documentation for All Patients Attending Unit or Centre

Adults Consent
Gain consent to be seen by a nurse practitioner
Gain consent for treatment and sharing information and document.

Clinical Presentation
If unwell assess for:

- Airway
- Breathing
- Circulation
- Disability
- Exposure

Document a full set of observations including neurological observations including Glasgow coma score if applicable.

Record EWS: if 7 or above arrange immediate transfer to secondary care. Refer to Treatment Escalation Plan if in place and discuss with Emergency Department as necessary.

Document pain score using numeric rating scale. For cognitively impaired patients document any signs of pain (e.g. grimaces or distress).

Safeguarding:

Ask the domestic abuse question, 'do you feel safe at home?'

- Assess for mental capacity and if person is a vulnerable adult.
- Assess for learning disability and whether patient has a hospital passport in place.
- Assess falls risk. Complete falls referral if applicable.

APPENDIX B – Essential Documentation for All Patients Attending Unit or Centre

Child and Young Persons under 18 Years Old Consent
Gain consent to be seen by a nurse practitioner
Gain consent for treatment and sharing information
Assess and document competency according to Fraser guideline if applicable.
Document name of person(s) accompanying patient

Clinical Presentation

If unwell assess for:

- Airway
- Breathing
- Circulation
- Disability
- Exposure

Record PEWS: if any one parameter is triggered transfer to secondary care or seek advice from medical practitioner.

Use guideline Traffic Light System (NICE) 2013 if applicable.
Use guideline Feverish Illness (NICE) 2013 if applicable.
Document pain score using FLACC, Wong Baker Faces or numeric rating scale.

Safeguarding:

Complete the safeguarding children questions (NICE 2003)

Any bruise in a non-mobile infant and child: Follow the Safeguarding children policy (2018). These children must be reviewed by a Consultant in Emergency Medicine or a Consultant Paediatrician and a MASH (multi agency safeguarding hub) enquiry must be made.

DOCUMENT ALL FINDINGS IN THE CLINICAL TREATMENT RECORD AND ACT ON THEM FOLLOWING NDHCT GUIDELINES.

APPENDIX C – Training Competency Form

Protocol for the Management of Urinary Tract Infections for Adult Females and Children (3 years and over)

Protocol operational from May 2016 and expires end of May 2019

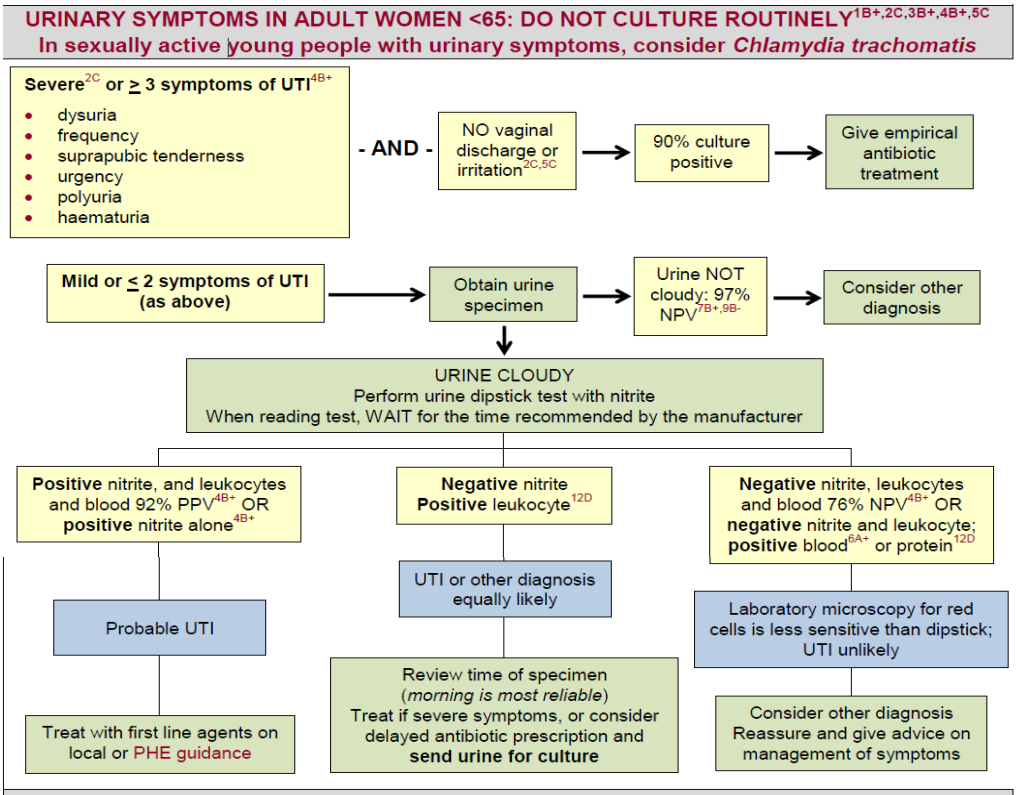
The registered health professional named below, being employees of Northern Devon Healthcare Trust based at ……. have received training and are competent to operate under this protocol

NAME *(please print)*	PROFESSIONAL TITLE	SIGNATURE	AUTHORISING MANAGER *(please print)*	MANAGER'S SIGNATURE	DATE

Keep original with the authorising manager and send a copy to: Karen Watts, Emergency Department, Northern Devon Healthcare Trust NHS, Raleigh Park, Barnstaple, Devon, EX31 4JB

Appendix D – Diagnosis of UTI Quick Reference Guides for Adult Women <65 and Children (PHE 2017)

Quick reference guide



URINE CULTURE IN WOMEN AND MEN >65 YEARS

☑
- **Do not send urine for culture in asymptomatic elderly with positive dipsticks.**
- Only send urine for culture if two or more signs of infection, especially dysuria, fever >38°C, or new incontinence.[4B+,5C]
- Do not treat asymptomatic bacteriuria in the elderly as it is very common.[1B+]
- Treating does not reduce mortality or prevent symptomatic episodes, but does increase side-effects and antibiotic resistance.[2C,3B+]

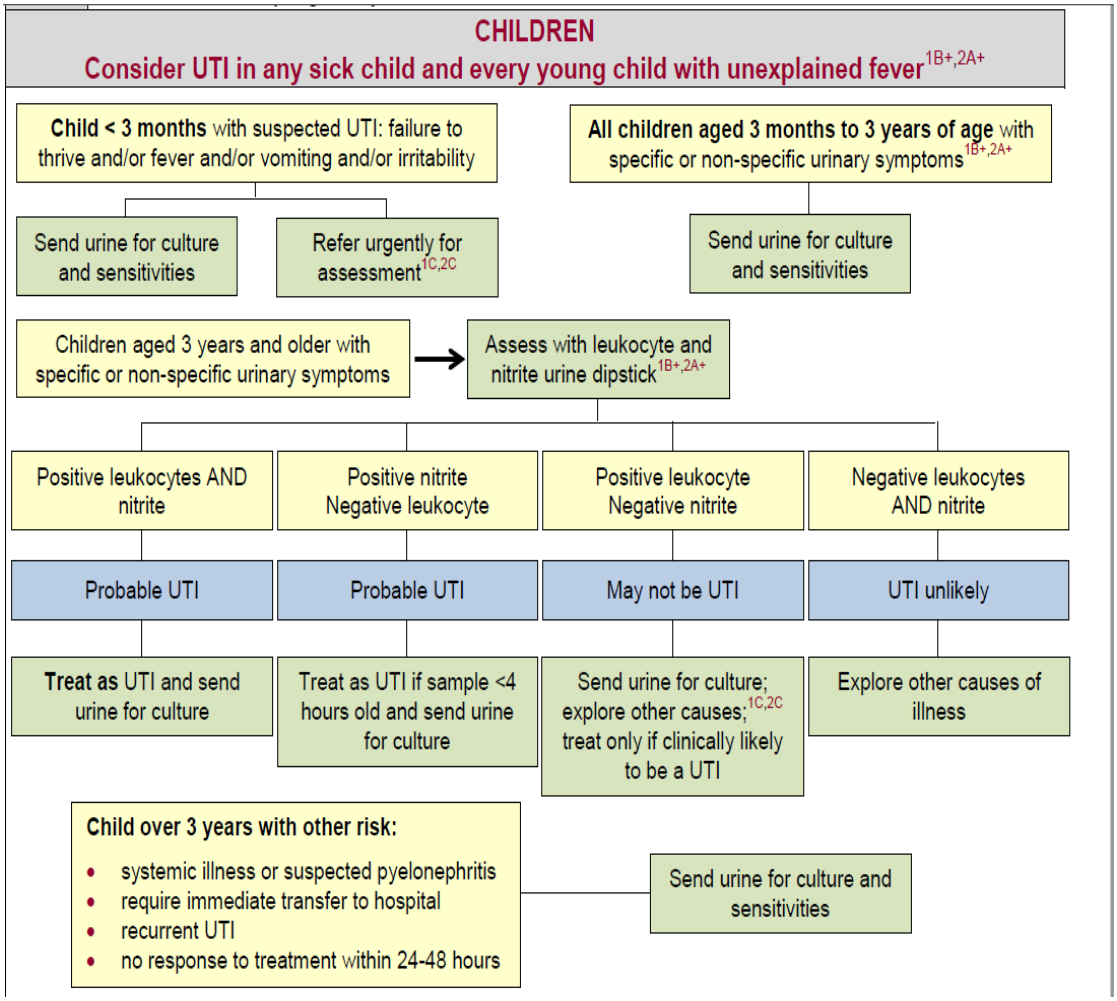
URINE CULTURE IN WOMEN AND MEN WITH CATHETERS

☑
- **Do not treat asymptomatic bacteriuria in those with indwelling catheters, as bacteriuria is very common, and antibiotics increase side-effects and antibiotic resistance.**[1B+]
- Treatment does not reduce mortality or prevent symptomatic episodes, but does increase side-effects and antibiotic resistance.[2C,3B+]

- Only send urine for culture in catheterised[7B-] if features of systemic infection.[1B+,5C,6C] However, always:
  - exclude other sources of infection[1C]
  - check that the catheter drains correctly and is not blocked
  - consider need for continued catheterisation
  - if the catheter has been in place for more than seven days, consider changing it before/when starting antibiotic treatment[1B+,6C,8B+]
- Do not give antibiotic prophylaxis for catheter changes unless history of symptomatic UTIs due to catheter change.[9B-,10B+]

WHEN ELSE SHOULD I SEND A URINE FOR CULTURE?

- Pregnancy: if symptomatic for investigation of positive UTI,[1B+] and at first antenatal visit, as asymptomatic bacteriuria associated with pyelonephritis and premature delivery.[1B+,2B+]
- Suspected pyelonephritis[3C] (loin pain and fever).
- Suspected UTI in men.[1B+,4C]
- Failed antibiotic treatment or persistent symptoms.[5A+,6B-]
  - *E. coli* with ESBL and CPE enzymes are increasing in the community
  - ESBLs are multi-resistant, but usually remain sensitive to nitrofurantoin or fosfomycin[7B+,8B+,9A+]
- Recurrent UTI, abnormalities of genitourinary tract, or renal impairment, as more likely to have a resistant strain.


CHILDREN
Consider UTI in any sick child and every young child with unexplained fever 1B+,2A+
Child < 3 months with suspected UTI: failure to thrive and/or fever and/or vomiting and/or irritability
All children aged 3 months to 3 years of age with specific or non-specific urinary symptoms 1B+,2A+
Send urine for culture and sensitivities
Refer urgently for assessment 1C,2C
Send urine for culture and sensitivities
Children aged 3 years and older with specific or non-specific urinary symptoms
Assess with leukocyte and nitrite urine dipstick 1B+,2A+
Positive leukocytes AND nitrite
Positive nitrite Negative leukocyte
Positive leukocyte Negative nitrite
Negative leukocytes AND nitrite
Probable UTI
Probable UTI
May not be UTI
UTI unlikely
Treat as UTI and send urine for culture
Treat as UTI if sample <4 hours old and send urine for culture
Send urine for culture; explore other causes; 1C,2C treat only if clinically likely to be a UTI
Explore other causes of illness
Child over 3 years with other risk:
systemic illness or suspected pyelonephritis
require immediate transfer to hospital
recurrent UTI
no response to treatment within 24-48 hours
Send urine for culture and sensitivities