Waitemata District Health Board

Best Care for Everyone

☑ = YES ☒ = NO

(PLACE PATIENT LABEL HERE)

SURNAME: _____ NHI: _____

FIRST NAMES: _____

Date of Birth: _____ /_____ /_____ SEX: _____

URINARY SYMPTOMS IN ADULTS

(Suspected Urinary Tract Infection - UTI)

Date: Time: Assessment nurse: Sign:

INCLUSION CRITERIA

☐ Suspected UTI

e.g. dysuria, frequency, urgency, supra-pubic discomfort, cloudy urine

EXCLUSION CRITERIA

☐ Symptoms suggestive of acute renal colic
☐ Rectal or perineal pain
☐ Renal patient *(especially transplant)*
☐ Known renal failure or Creatinine > 200

☐ **Select Treatment Pathway on Whiteboard**
Enter actual time started
Data collected for Ministry of Health

STOP!
Not suitable for this Best Care Bundle
Select 'BCB removed' Treatment Pathway
Continue usual nursing cares

NURSING ASSESSMENT

☐ History, examination & vital signs *Document on Nursing Assessment Record*

☐ Ask if pregnancy is possible → ☐ *Unlikely pregnant → continue*
In all ♀ 14 - 55 ☐ *Pregnant / possibly pregnant → β-HCG →* ☐ *positive* ☐ *negative*

☐ Obtain urine sample → *Only send MSU / CSU if any complicating factors. Otherwise POC only*

☐ Provide patient information sheet

? ANY COMPLICATING FACTORS *Investigation indications: any present - do bloods / send MSU*

☐ All men. Women age ≥ 65	☐ Flank / back pain *pyelonephritis / renal calculi*	☐ Renal impairment
☐ Immunosupressed	☐ Recent UTI or failed treatment	☐ Catheterised
☐ Pregnancy *known / suspected*	☐ Recent urinary instrumentation	☐ Fever / rigors
☐ Nausea / vomiting	☐ Known Genito-Urinary abnormalities	☐ Haematuria

☐ NO

↳ ☐ POC *(point of care)* test only
No MSU / CSU or bloods
↳ *Clinician: treat if + Leuc esterase or + Nitrates Formulary on page 4*

☐ YES

↳ ☐ Send MSU / CSU direct to the lab
↳ ☐ Bloods & IV line *Abdominal pain panel*
No POC (point of care) testing
↳ *Clinician: treat as per MSU results (def page 3)*

RED FLAGS *All red flags boxes must be populated* ☑ = YES ☒ = NO

☐ Systolic BP < 90
☐ HR > 110
☐ Immunosuppression
☐ Change in mental state
☐ Significant abdominal pain
☐ Clinical concern: _____

☐ **NO RED FLAGS**

Continue Best Care Bundle

☐ **RED FLAGS PRESENT (ANY)** → Senior Dr review ASAP *(SMO / Senior Registrar)*
Dr Name: _____ Sign: _____
☐ Continue Best Care Bundle. Intervention if any: _____
☐ Exit Care Bundle: Reason: _____
↳ *Select 'BCB removed' in TP column, Electronic Whiteboard.*

URINARY SYMPTOMS (UTI) BEST CARE BUNDLE PATHWAY

7.7.210 A

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TOP TIPS

MIDSTREAM URINE (MSU) SAMPLE - WHY IS COLLECTION TECHNIQUE IMPORTANT?

Poorly collected samples have high rates of contamination, which leads to unnecessary lab costs and also delays definitive care if the sample has to be re-collected. There are 'How to collect a MSU' posters in all the patient toilets. Ask the patient to read these or explain the procedure in detail.

WHY DO ONLY DO POINT OF CARE (POC) DIPSTIX IN YOUNG HEALHTY PATIENTS?

Dipstix urine analysis costs a few cents. Formal microscopy and culture costs more that $20.
A positive POC with symptoms is adequate to make the diagnosis.

WHY SEND URINE / DO BLOODS WITH NEGATIVE PARAMETERS IN PATIENTS WITH COMPLICATING FACTORS?

Early pyelonephritis can still have a negative dipstix result.

WHY DON'T WE USE URAL ANYMORE? (Urinary alkalinisation)

Urinary pH affects the activity of some antibiotics:

Nitrofurantoin is effective against E. coli at a concentration of 100 mg/L. The MIC (minimum inhibitory concentration) increases twenty fold from pH 5.5 to pH 8.0 . At pH 8.0 bacterial growth occurs with 25 mg/lL of Nitrofurantoin.

ADDITIONAL INFORMATION

Antibiotic Guidelines	CeDSS -> Gen Med -> Antibiotic guideline
Aminoglycoside Guideline	CeDSS ->Infectious Disease ->Antibiotics ->Aminoglycoside

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URINARY SYMPTOMS BEST CARE BUNDLE PATHWAY

DEFINITIONS

UNCOMPLICATED UTI: LOWER URINARY TRACT INFECTIONS

Cystitis	• Inflammation of the bladder - can be infectious or other irritation i.e. post radiation cystitis
Uncomplicated UTI	• Dysuria, frequency, urgency, with pyuria and bacteriuria, in an otherwise systemically well patient POCT: + Leucocyte Esterase or + Nitrates or • WCC > 10 x 10^6 /L *Mixed growth of ≥ 3 bacterial species indicates skin/mucosal contamination*
Catheter associated UTI (uncomplicated)	• Without urosepsis or pyelonephritis. • Symptoms or signs compatible with UTI AND • WCC > 10 x 10^6/L +/- bacterial growth > 10^5 CFU/ mL *If systemically unwell - treat as urosepsis*
Asymptomatic bacteriuria	• Asymptomatic patient • Positive culture with ≥ 10^5 CFU/mL bacteria • In uncontaminated (clean-catch) urine • This is usually accompanied with pyuria. (WCC >10 X 10^6/L) *Treatment advised only if:* *• Pregnant patients* *• Recent urinary tract instrumentation* *• Immunocompromised* *• Active malignancies* *• Post transplant*

PYELONEPHRITIS: UPPER URINARY TRACT INFECTIONS

Uncomplicated	• Fever and flank pain with urine microscopy / culture suggestive of UTI *If systemically unwell - treat as urosepsis*
Complicated Pyelonephritis	• Obstructive uropathy • Infected cyst • Ureteral stents • Renal transplant patient • Renal abscess • Renal parenchymal disease
Urosepsis	• UTI with bacteraemia or haemodynamic instability

DISCHARGE CRITERIA: *MUST MEET ALL*	**ADMISSION CRITERIA** *ANY*
☐ Senior doctor agrees with discharge plan ☐ Vital Signs within normal limits	☐ Persistent abnormal vital signs and / or fever ☐ Pyelonephritis in pregnancy ☐ Complicated UTI *see above for definitions* ☐ Multiple medical co-morbidities ☐ Previous urosepsis ☐ Clinical concern

DISCHARGE CHECKLIST	**FOLLOW UP** *Please note this in the EDS*
☐ Script for antibiotics **only if indicated** as per recommendations page 4 (formulary) ☐ Antibiotic choice documented in comments section of MSU on Eclair ☐ Stat doses of Antibiotics documented in EDS ☐ Patient information sheet provided *Bundle pack or BCB page, EM CeDSS, BCB, UTI*	☐ GP in 7-10 days *It is important to ensure clearance esp. in pregnancy* ☐ Recurrent UTI: *Def: > 3 per year or 2 in 6 months* ↳ Refer GP for further work-up & prophylactic antibiotics *See the BCB proforma link from EDS.* *This is already pre-populated with patient information*

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FORMULARY / WDHB ANTIBIOTIC GUIDELINE

in order of preference

CHECK ALLERGY STATUS AND SEE MEDSAFE OR OTHER TEXT FOR FULL LIST OF CONTRAINDICATIONS**
ALL MEDICATIONS MUST BE CHARTED ON THE NATIONAL (ELECTRONIC) MEDICATION CHART

LOWER UTI *(Cystitis)*

	Antibiotic recommendations	Dose	Route	Freq	Duration	NOTES
Asymptomatic Bacteriuria	Treatment not indicated unless:	• *Immune compromised* • *Urological pt's undergoing procedures* • *Pregnant (See 'pregnancy' below for treatment)*				
Uncomplicated	☐ **Nitrofurantoin* or** ☐ Trimethoprim or ☐ Amoxycillin/Clavulanic acid	50 mg 300 mg 625 mg	Oral Oral Oral	QID OD TDS	5 days 3 days 3 days	** Contraindicated if CrCl < 30*
Pregnancy < 28/40	☐ **Nitrofurantoin* *or*** ☐ Cefaclor	50 mg 500 mg	Oral Oral	QID TDS	5 days 5 days	** Nitrofurantoin: contraindicated:* ** ≥ 28/4* ** CrCl < 30* ** Repeat culture to ensure clearance.*
Pregnancy ≥ 28/40	☐ Cefaclor	500 mg	Oral	TDS	5 days	
Catheter associated (uncomplicated)	*If systemically well* ☐ **Cefaclor *or*** ☐ Norfloxacin	500 mg 400 mg	Oral Oral	TDS BD	5-7 days 5-7 days	*Replace IDC, especially if in situ for ≥2 weeks. Consider removal of catheter if possible.*
	If systemically unwell ☐ **Cefuroxime *or*** ☐ Gentamicin✣	750 mg 3 mg/kg✣	IV IV	8 hourly Stat		*Review previous urine cultures to guide treatment.* *✣ Gentamicin dose use Ideal Body Weight. See note below*
Catheter associated **ESBL colonised** (uncomplicated)	*If systemically well* ☐ **Nitrofurantoin* *or*** ☐ Pivmecillinam☆ *or* ☐ Fosfomycin☆	50 mg 400 mg 3 g	Oral Oral Oral	QID BD Q 3 days	5-7 days 5 days 2 doses	** Contraindicated if CrCl < 30* *☆ Pivmecillinam & Fosfomycin need ID approval. Dispensed from hospital pharmacy. Pivmecillinam is a Penicillin. Contraindicated in penicillin allergy*
	If systemically unwell ☐ **Meropenem**	500 mg	IV	8 hourly	5 days	*Meropenem needs ID approval. Covers Pseudomonas. It has cross reactivity with penicillin. Consult ID if history of severe penicillin allergy*

✣Gentamicin & Amikacin should initially be dosed on Ideal Body Weight. ♂ = (height in cm -150) x 0.9 + 50 / ♀ = (height in cm – 150) x 0.9 + 45.5
Further dosing should then be guided by therapeutic drug monitoring – see Aminoglycoside protocol CeDSS. Use with caution in existing or impending renal failure. There is still a risk of ototoxicity even with stat dose. Use for max 48 hrs. Both provide reasonable anti-pseudomonal cover

UPPER UTI *(Pyelonephritis)*

Pyelonephritis (uncomplicated)	*If systemically well* ☐ **Norfloxacin *or***	400 mg	Oral	BD	7-10 days	*NOTE: Nitrofurantoin, fosfomycin and pivmecillinam NOT recommended for upper UTI's*
	If systemically unwell ☐ **Cefuroxime *or*** ☐ Gentamicin✣	1.5 g 3-5 mg/kg	IV IV	8 hourly Stat		*✣Gentamicin and Amikacin: Use Ideal Body Weight. See note above*
Pyelonephritis ESBL colonised (uncomplicated)	☐ **Meropenem *or*** ☐ ✣Amikacin ***or***	1 g 12-20 mg/kg	IV IV	8 hourly Stat	5 days *see note above*	*Meropenem & Amikacin: Needs ID approval. Meropenem has cross sensitivity with Penicillin. Contact ID if severe penicillin allergy*
	☐ Norfloxacin▼	400 mg	Oral	BD	7-10 days	*▼Only if proven sensitive on prior culture*
Pyelonephritis (complicated)	As for uncomplicated systemically unwell		IV		10-14 days	*Parenteral only. Senior review* *2 sets of blood cultures*
Pregnancy	☐ **Cefuroxime**	1.5 g	IV	8 hourly		
Urosepsis (suspected or confirmed)	☐ Cefuroxime ***or*** ☐ Gentamicin✣ ☐ Meropenem *(for known ESBL)*	1.5g 5 - 7 mg/kg 1 g	IV IV IV	8 hourly Stat 8 hourly		*✣ Gentamicin dose use Ideal Body Weight. See note above*