

## Urinary Tract Infections (Adults)

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## Introduction and Purpose

Antimicrobial Guidelines are intended to provide clinicians guidance on the management (both treatment and prevention) of common infections. This guideline forms part of a series of antimicrobial guidelines.

The clinical guidelines provide evidence based and best practice on the management of patients with infective episodes. They include empirical antimicrobial therapy including dose, route and duration of therapy and where necessary microbiological investigations and

## Objectives

- To improve the quality of antimicrobial prescribing and reduce inappropriate prescribing.
- To maximise the clinically effectiveness of antimicrobial agents used.
- To reduce drug related toxicity and development of antimicrobial resistance.
- To ensure cost effective use of antimicrobial agents.

## Scope

This guideline applies to all healthcare professionals involved in the prescription, administration and monitoring of antimicrobial agents.

## Development and consultation

The clinical guidelines have been produced by the lead clinician and lead pharmacist for each division in conjunction with microbiology.

## Implementation and Monitoring and documentation

Implementation and adherence to the guidelines is the responsibility of the lead clinician and lead pharmacist for each division.

Key aspects of the guidelines will be monitored as part of the annual audit programme.

Specimen(s) for culture and sensitivities should be taken **before** starting treatment.  
 Antibiotic therapy should be modified according to culture results.

### ASYMPTOMATIC BACTERIURIA

Asymptomatic bacteriuria (>10<sup>5</sup> bacteria/mL by culture; + ve nitrites on dipstick) is common especially in the elderly and is not associated with increased morbidity. Antibiotic therapy should NOT be routinely offered as evidence suggests that treatment may be more harmful than beneficial.<sup>1</sup>  
 Screening for bacteriuria and treatment is recommended in the following groups: pregnancy, before TURP and other invasive urological interventions.<sup>2</sup>

<b>Asymptomatic bacteriuria (not pregnant)</b>	NO antibiotic therapy
<b>Asymptomatic bacteriuria (pregnant women)</b>	Treat according to sensitivities of colonising organism for 7 days
<b>TURP and other traumatic urological interventions</b>	Treat according to sensitivities of colonising organism for 5 days pre-procedure

### CATHETER-ASSOCIATED UTI

Asymptomatic patients with positive catheter specimen urine (CSU) culture do not need to be treated with antibiotics.<sup>3</sup> Antibiotics will not eradicate bacteriuria; only treat if systemically unwell or pyelonephritis likely.  
 If symptomatic ensure sample is sent for culture (from catheter, not bag). Take into account previous treatments and culture results.

<b>Asymptomatic and positive CSU</b>	NO antibiotic therapy
If symptomatic treat as for lower or upper UTI dependent on symptoms	

### CATHETER CHANGE

Antibiotic prophylaxis at catheter manipulation is only indicated in patients with a history of catheter-associated UTI following catheter manipulation.<sup>4</sup>

<b>Catheter change</b>	<u>Gentamicin</u> 80mg IV as a single dose 30 minutes before the procedure
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### UNCOMPLICATED, COMMUNITY ACQUIRED, LOWER UTI

**Uncomplicated** UTI is defined as symptoms relating solely to the lower urinary tract, usually frequency and burning on micturition. A short course will be effective if the urinary tract is normal. A longer course is needed for uncomplicated UTI in men.

<b>1<sup>st</sup> choice</b>	<u>Trimethoprim</u> 200mg PO bd for 3 days (men: 7 days)
<b>Alternative</b>	<u>Nitrofurantoin</u> 50mg PO qds for 3 days (men: 7 days) Do NOT use if CrCl <60ml/min
<b>Pregnant women</b>	<b>1<sup>st</sup> choice</b> <u>Cefradroxil</u> 500mg PO bd for 7 days <b>Cephalosporin allergy or bacteria resistant to cephalosporin</b> 1 <sup>st</sup> trimester: <u>Nitrofurantoin</u> 50mg PO qds for 7 days 2 <sup>nd</sup> and 3 <sup>rd</sup> trimester: <u>Trimethoprim</u> 200mg PO bd for 7 days

### UNCOMPLICATED, HOSPITAL ACQUIRED, LOWER UTI

Choice of treatment is dependent on severity of symptoms and underlying co-morbidities.

<b>1<sup>st</sup> choice</b>	<u>Trimethoprim</u> 200mg PO bd for 7 days
<b>Alternative</b>	<u>Nitrofurantoin</u> 50mg PO qds for 7 days Do NOT use if CrCl <60ml/min

## PYELONEPHRITIS

Symptoms include fever, rigors, flank or loin pain or tenderness, nausea and vomiting. Send MSU for culture **before** starting antibiotic therapy. Evidence of systemic toxicity, vomiting, or both mandates intravenous therapy. Men are more likely to require longer treatment and investigation, as most will have prostatic obstruction and residual bladder volumes as an underlying cause.

<b>1<sup>st</sup> line</b>	<u>Cefuroxime</u> 750mg – 1.5g IV tds for 48 hours, then switch to oral therapy as per sensitivities. If no sensitivities available, switch to: <u>Ciprofloxacin</u> 500mg PO bd Total duration of therapy: 10 - 14 days
<b>Beta lactam allergy</b>	<u>Ciprofloxacin</u> 500mg PO bd for 10 - 14 days
<b>Refractory hypotension (septic shock)</b>	Add a stat dose of <u>gentamicin</u> 7mg/kg IV and review Refer to <u>gentamicin dosing guideline</u>
<b>Pregnant women</b>	<b>1<sup>st</sup> choice</b> <u>Cefuroxime</u> 750mg - 1.5g IV tds for 48 hours, then when appropriate, if the organism is known and susceptible, switch to: <u>Amoxicillin</u> 500mg PO 8 hourly Total duration of therapy 14 days <b>Beta lactam allergy or if resistant to amoxicillin or unknown susceptibility</b> Discuss with microbiology <b>If refractory hypotensive (septic shock)</b> Add <u>Gentamicin</u> 80mg IV 8 hourly And discuss with microbiology

## RECURRENT UTI

This requires specialist input from urologists and infection doctors. Management and antibiotic therapy is dictated on a case by case basis.

## UTI IN CHILDREN

Refer to Paediatric antibiotic guidelines.

## REFERENCES

1. SIGN – Management of suspected bacterial urinary tract infection in adults. July 2006.
2. IDSA guidelines for the diagnosis and treatment of asymptomatic bacteriuria in adults. Clinical Infectious Diseases 2005; 40: 643-54.
3. Clinical Knowledge Summaries – urinary tract infection version 1.2; July 2006.
4. NICE CG2: Infection control – prevention of healthcare-associated infections in primary and community care. June 2003.