Penicillin Allergy (PenA)

Drugs in **RED** are **contra-indicated**
Drugs in **AMBER** to be used with **caution**
Drugs in **GREEN** are **safe**

Abbreviations:

PenA = **Penicillin allergy**
BLA = **Beta-lactam allergy**
OPAT = **Outpatient Parenteral Antibiotic Therapy**

* **Gentamicin** – Dosed according to Hartford Nomogram. Refer to Gentamicin Dosing Guideline.
§ **Vancomycin** – Take 'trough' (pre-dose) level before the 3rd dose. Adjust dosage according to levels.

SOFT TISSUE INFECTION

Mild to moderate cellulitis	**Duration**
1st line: **Flucloxacillin** 500mg – 1g PO qds *PenA:* **Clarithromycin** 250 – 500mg PO bd	7 – 10 days

Severe cellulitis	**Duration**
1st line: **Flucloxacillin** 500mg – 1g IV/PO qds **plus Benzylpenicillin** 1.2g IV qds (or **Amoxicillin** 500mg PO tds) *PenA:* **Clindamycin** 600mg IV qds (or 450mg PO qds)	7 – 10 days *Once stable switch to oral or consider OPAT service.*

Chronic ulcers	**Duration**
1st line: **Co-amoxiclav** 625mg PO tds *PenA:* **Clindamycin** 300 – 450mg PO qds	7 days then review

Animal and human bites	**Duration**
1st line: **Co-amoxiclav** 375mg PO tds *PenA:* Animal **Doxycycline** 200mg stat then 100mg PO od **plus Metronidazole** 400mg PO tds Human **Clarithromycin** 500mg PO bd **plus Metronidazole** 400mg PO tds	5 days

URINARY TRACT INFECTION

Uncomplicated UTI / outpatients	**Duration**
1st line: **Trimethoprim** 200mg PO bd *2nd line:* **Amoxicillin** 500mg PO tds for *3rd line:* **Nitrofurantoin** 50mg PO qds for NB: AVOID in renal impairment i.e. CrCl < 20 ml/min	3 days for female and 7 days for male

Complicated UTI (upper urinary tract involvement)	**Duration**
1st line: **Co-amoxiclav** 1.2g IV tds (or 625mg PO tds) **with or without Gentamicin** 7mg/kg* IV od *PenA:* **Ceftriaxone** 2g IV od *BLA:* **Ciprofloxacin** 500mg PO bd	7 – 10 days *Once stable switch to oral or consider OPAT service.*

UTI in pregnancy	**Duration**
1st line: **Cefalexin** 500mg PO bd *BLA:* Contact Microbiology	7 days

RESPIRATORY TRACT INFECTION

Community Acquired Pneumonia (CAP)		Duration
Low severity CAP (CURB-65 score = 1 or less)		
1st line:	**Amoxicillin** 500mg PO tds	5 – 7 days
PenA:	**Clarithromycin** 500mg PO bd	
Moderate severity CAP (CURB-65 score = 2)		
1st line:	**Benzylpenicillin** 1.2 – 2.4g IV qds (or **Amoxicillin** 500mg PO tds) **plus Clarithromycin** 500mg IV/PO bd	7 days *Switch to oral after 72 hours*
PenA:	**Ceftriaxone** 2g IV od **plus Clarithromycin** 500mg IV/PO bd	
BLA:	**Vancomycin** Ig IV bd § **plus Clarithromycin** 500mg IV/PO bd	
High severity CAP (CURB-65 score = 3 or more)		
1st line:	**Co-amoxiclav** 1.2g IV tds (or **Co-amoxiclav** 625mg PO tds) **plus Clarithromycin** 500mg IV/PO bd	7– 10 days *Switch to oral after 72 hours*
PenA:	*See under 'Moderate severity CAP - Penicillin Allergy (PenA)'*	
BLA:	*See under 'Moderate severity CAP - Beta-lactam Allergy (BLA)'*	

Infective exacerbation of COPD		Duration
1st line:	**Amoxicillin** 500mg PO tds	5 – 7 days
2nd line	**Co-amoxiclav** 625mg PO tds	
PenA:	**Doxycycline** 200mg stat then 100mg PO od	

Hospital Acquired Pneumonia (HAP)		Duration
Early onset HAP (< 5 days of hospitalisation)		
1st line:	**Amoxicillin** 500mg IV/PO tds	7 days *Switch to oral after 48 –72 hours*
PenA:	**Clarithromycin** 500mg IV/PO bd	
Late onset HAP (≥ 5 days of hospitalisation) and not recently ventilated, no other augmented care		
1st line:	**Co-amoxiclav** 1.2g IV tds (or 625mg PO tds)	7 days *Switch to oral after 48 –72 hours*
PenA:	**Ciprofloxacin** 400mg IV bd (or 500mg PO bd) **plus Vancomycin** Ig IV bd §	
Late onset HAP (≥ 5 days of hospitalisation) and on augmented care e.g. ventilated		
1st line:	**Piperacillin/Tazobactam** 4.5g IV tds for 7 days	7 days
PenA:	**Ciprofloxacin** 400mg IV bd (or 750mg PO bd) for 7 days	

Aspiration pneumonia and/or Mediastinitis		Duration
1st line:	**Co-amoxiclav** 1.2g IV tds (or 625mg PO tds)	Review in 7 days *Switch to oral after 48 –72 hours*
PenA:	**Clindamycin** 600mg IV qds (or 450mg PO qds)	

Empyema		Duration
1st line:	**Co-amoxiclav** 1.2g IV tds	Review in 7 days
PenA:	**Clindamycin** 600mg IV qds	

MENINGITIS

Organism unknown	Duration
1st line: **Ceftriaxone** 2g IV bd *BLA:* **Chloramphenicol** 1g IV/PO qds **If pneumococcal suspected (no rash):** *Add:* **Dexamethasone** 10mg IV qds for 4 days starting before or with 1st dose of antibiotic. NB: AVOID if septic shock or immunocompromised.	Discuss with Microbiologist

SEPSIS

Neutropenic sepsis	Duration
1st line: **Piperacillin/Tazobactam** 4.5g IV qds *PenA:* **Ciprofloxacin** 400mg IV bd **plus** **Vancomycin** 1g IV bd §	Discuss with Microbiologist

Abdominal sepsis (gut associated)	Duration
1st line: **Co-amoxiclav** 1.2g IV tds (or 625mg PO tds) **with or without** **Gentamicin** 7mg/kg* IV od *PenA:* **Clindamycin** 300 – 600mg IV qds **plus** **Gentamicin** 7mg/kg* IV od ***If indicated, switch to PO therapy:*** **Ciprofloxacin** 500mg bd **plus** **Metronidazole** 400mg tds	5 – 10 days according to response.

GASTRO-INTESTINAL INFECTION

Clostridium difficile – associated diarrhoea (CDAD)	Duration
Mild / moderate disease: **Metronidazole** 400mg PO tds *Severe disease or Life threatening disease:* **Metronidazole** 500mg IV tds **plus** **Vancomycin** 500mg PO qds **with or without** **Human Immunoglobulin** **(CONSULT MICROBIOLOGY)** NB: Do not give vancomycin intravenously for CDAD.	10 – 14 days

GENITAL INFECTION

Pelvic Inflammatory Disease (PID)	Duration
Inpatient therapy: **Ceftriaxone** 2g IV od **plus** **Doxycycline** 100mg PO bd ***If clinical improved, after 24 hours change to:*** **Doxycycline** 100mg PO bd **plus** **Metronidazole** 400mg PO bd	Total treatment course 14 days

Epididymo-orchitis	Duration
Likely caused by sexually transmitted pathogen e.g. *N. gonorrhoea* or *C. trachomatis*	
1st line: **Ceftriaxone** 500mg IM as a single dose **plus** **Doxycycline** 100mg PO bd	10 – 14 days
Recent instrumentation, catheterisation or anatomical abnormalities of the urinary tract	
1st line: **Ciprofloxacin** 500mg PO bd ***If septicaemic, add:*** **Gentamicin** 7mg/kg* IV od. Review in 3 days.	14 days and review

Prostatitis	Duration
1st line: **Ciprofloxacin** 500mg PO bd ***If septicaemic, add:*** **Gentamicin** 7mg/kg* IV od. Review in 3 days. *2nd line:* **Trimethoprim** 200mg PO bd	28 days

PRESCRIBER'S CHECKLIST

☑ STAT DOSE. Start antimicrobial therapy as soon as possible. Give a stat dose if necessary.

☑ CULTURE. Take BEFORE starting antimicrobial therapy, but do not delay initiation of therapy in critically ill patients.

☑ INDICATION & DURATION. Document on the prescription chart at point of prescribing. Clinical justification to prescribe antibiotic(s) must be recorded in the medical notes.

☑ REVIEW at 72 hours. Review antibiotic therapy against patient's condition and/or culture results. Consider IV to PO switch *or* Outpatient Parental Antibiotic Therapy (OPAT) if appropriate.

THERAPEUTIC DRUG MONITORING

- Record **time of the last dose & time blood sample taken** on the assay request form.
- Collect samples for drug assay using the 6ml **red top vacutainer tube** (serum sample).
- Laboratory assay service: Monday – Friday 09:00 to 14:00; Saturday – Sunday 09:00 to 11:00
- *IMPORTANT*: For **out-of-office** hours assay service, please contact Microbiology via switchboard.

ANTIMICROBIAL	REGIMEN	SAMPLING TIME	TARGET RANGE (mg/L)
Amikacin	Once daily dosing	Trough (pre-dose):	< 5
	Multiple daily dosing	Trough (pre-dose):	< 10
		Peak (1-hour):	20 – 30
Chloramphenicol	Monitoring required in: • Elderly or <4yrs old • Hepatic impairment	Trough (pre-dose):	< 15
		Peak (2-hours IV /PO):	10 – 25
Colistimethate	In renal impairment	Peak (30-minutes):	10 – 15
Cycloserine	Monitoring required in: • Renal impairment • Dose > 500mg/day • Signs of toxicity	Trough (pre-dose):	10 – 20
		Peak (3 - 4 hours):	20 – 35
Ethambutol	In renal impairment	Trough (pre-dose):	< 1
		Peak (2 - 2.5 hours):	2 – 6
Gentamicin	Once daily dosing	6 – 14 hours	According to Hartford nomogram
	Multiple daily dosing	Trough (pre-dose):	< 2 (endocarditis: < 1)
		Peak (1-hour):	5 –10 (endocarditis: 3 – 5)
Streptomycin	Tuberculosis	Trough (pre-dose):	< 5 (renal impairment/over 50yrs: < 1)
		Peak (1-hour):	15 – 40
	Endocarditis	Trough (pre-dose):	< 3
Teicoplanin	Monitoring required only in certain patients – see guideline	Trough (pre-dose):	> 10 but < 60 (endocarditis / bone / joint: > 20)
Vancomycin	IV therapy	Trough (pre-dose):	10 – 15 (complicated infections: 15 – 20)

Peak levels of aminoglycoside may occasionally be useful but should only be taken on the request of Microbiology.

GENTAMICIN

EXCLUSION CRITERIA

Once daily gentamicin regimen should be used in preference to the conventional multiple daily dosing except in cases of:

- Ascites or severe liver disease
- Endocarditis
- Cystic fibrosis
- Major burns
- Pregnancy
- Prophylaxis

DOSE and ADMINISTRATION

Gentamicin 7mg/kg* in 100ml glucose 5% or sodium chloride 0.9% administered by intravenous infusion over 1 hour.

* If obese (>20% overweight), use **corrected body weight (CBW)** to calculate dose.

- **Percentage overweight (%):**

  $$\frac{\text{Actual Body Weight (ABW)} - \text{Ideal Body Weight (IBW)}}{\text{Ideal Body Weight (IBW)}} \times 100\%$$

- **Ideal Body Weight (IBW)**

  MALE IBW (kg) = 50kg + (0.91 x every cm over 152.4cm)

  FEMALE IBW (kg) = 45.5kg + (0.91 x every cm over 152.4cm)

- **Corrected Body Weight (CBW)**

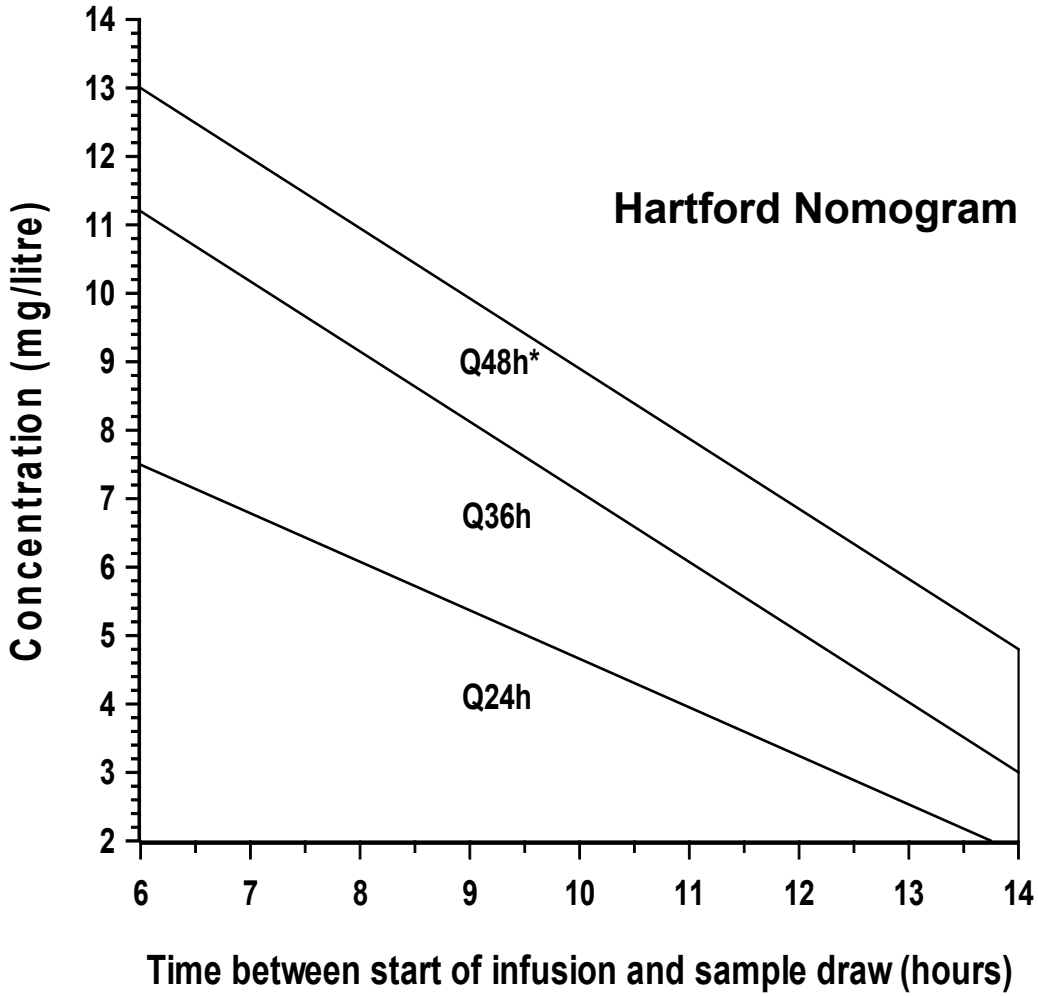
  CBW (kg) = IBW + 0.4 x (Actual Body Weight – IBW)

DOSING INTERVALS and MONITORING

- Take a **single** blood sample after the FIRST dose, at any time between **6 – 14 hours** after the start of the infusion.
- Await level before giving the next dose.
- Use Hartford Nomogram to guide dosing interval.
- Monitor gentamicin level twice weekly or as advised.

Refer to main guideline on the intranet for more information

IMPORTANT: **The time the infusion was started and the time blood sample was taken MUST be recorded on the microbiology assay request form.**



Whittington Health NHS

ADULT POCKET ANTIMICROBIAL GUIDE

November 2012 Version 2.0

See intranet for full guidelines and updates

For further advice contact

Microbiology	ext. 5085 or bleep 3069
Medicines Information	ext. 5021
Antimicrobial Pharmacist	ext. 3732 or bleep 3183

Out of hours contact on-call Microbiologist and/or on-call Pharmacist via switchboard.

All doses are based on normal renal function.

For dosing in renal impairment, please contact your ward pharmacist or Medicines Information Department.

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