DESCRIPTION	Amoxycillin is a penicillin antibiotic which interferes with cell wall peptidoglycan synthesis by binding to penicillin-binding proteins resulting in cell lysis.[1,2] Amoxycillin is a moderate spectrum penicillin active against some Gram negative organisms (eg. *Eshcerichia coli* and *Haemophilus influenza*) but are inactivated by beta-lactamase producing strains.[3] It is principally used in the treatment of community acquired pneumonia, middle ear infections and urinary tract infections as well as prophylaxis and treatment of endocarditis.[4]
ChAMP INDICATIONS AND RESTRICTIONS	**Oral and IV: Category A: Unrestricted** This is not a restricted agent. Follow standard ChAMP guidelines where appropriate.
FORMULATIONS	500mg and 1g powder for injection vial 250mg/5mL and 125mg/5mL powder for oral suspension 250mg and 500mg capsules **Note:** A number of alternative formulations are available on prescription from retail pharmacies.
DOSAGE	The doses listed below fall within the standard range. Higher doses may be prescribed for certain situations. This should be in consultation with Infectious Diseases or Microbiology consultants. **IV:** **Usual dose:** 25mg/kg/dose (to a maximum of 1gram) 8 hourly. **Severe infections:** 50mg/kg/dose (to a maximum of 1gram) 4 to 6 hourly.[5] **Oral:** **Usual dose:** 15mg/kg/dose (to a maximum of 500mg) 8 hourly **Severe infections:** 25mg/kg/dose (to a maximum of 1gram) 8 hourly. This may be increased up to 40mg/kg/dose (to a maximum of 1gram) for patients with otitis media who have failed treatment.[1,5] **Endocarditis Prophylaxis:** **Oral:** 50mg/kg (to a maximum of 2grams) given orally,1 hour prior to the procedure.[1,3] **IV:** 50mg/kg (to a maximum of 2grams) given IV immediately prior to the procedure.[1] **Neonates:** Please refer to neonatal clinical care drug protocols Neonatology Clinical Care Unit - Drug Protocols - Services A — Z - Women and Newborn Health Service
DOSAGE ADJUSTMENT	Dosage adjustment may be required in cases of impaired renal function (with creatinine clearance of less than 50mL/min).[3]The use of high parenteral doses and/or prolonged treatment in renal impairment may result in electrolyte disturbance (due to the high sodium content), neurotoxicity (due to accumulation of the penicillin) and crystalluria. The risk of neutropenia and rash may also be increased.[3,4] http://cahs.hdwa.health.wa.gov.au/__data/assets/pdf_file/0003/106986/01_Guidlines_for_calculating_CLcr.pdf **Dosage adjustment required in renal impairment:** CrCl > 50mL/minute = normal dose CrCl < 50mL/minute = 100% dose 8 to 12 hourly.[3]

RECONSTITUTION	**IV:** Reconstitute the 500mg vial with 4.6mL of water for injection and reconstitute the 1gram vial with 9.2mL of water for injection to give a final concentration of 100mg/mL. This solution requires further dilution before administration. A transient pink or slight opalescence may appear during reconstitution.[6,7] **Oral suspension (250mg/5mL Sandoz brand):** Reconstitute the Sandoz brand amoxycillin with 92mL of water as follows: Tap bottle until all the powder flows freely, add the total volume of water for reconstitution and shake vigorously to suspend the powder. Store the reconstituted suspension at room temperature (below 25 degrees) and discard any remaining suspension after 14 days.[8] Refer to packaging for the reconstitution instructions for alternative brands and strengths.
ADMINISTRATION	**IV injection:** For doses less than 30mg/kg, dilute reconstituted solution to a concentration of 50mg/mL or less and inject over 3 to 4 minutes. Avoid rapid administration of large doses, as it may result in seizures.[7] **IV infusion:** For doses over 30mg/kg, dilute reconstituted solution to a concentration of 50mg/mL or weaker and infuse over 30 minutes. [1,4,7,9] **IM injection:** Suitable – If IV access is not available this medication may be given by IM injection. Contact Pharmacy for advice.[7] **Oral:** Shake well prior to measuring out adose of the suspension. Oral amoxycillin may be administered without regard to the timing of food intake.[3]
MONITORING	Renal, hepatic and haematological function should be monitored weekly with prolonged therapy (i.e. longer than 7 days).[1,2]
ADVERSE EFFECTS	**Common:** widespread erythematous maculopapular rash (generally self resolving after treatment is ceased), diarrhoea, nausea, pain and inflammation at the injection site, candidiasis, allergy.[1] **Rare:** pustular drug eruption, crystalluria (with high IV doses), vomiting, *Clostridium difficile*-associated disease, black tongue, electrolyte disturbance (hypernatraemia or hypokalaemia), neurotoxicity (usually with high doses), bleeding, blood dyscrasias (neutropenia or thrombocytopenia), immunologic reactions (include rash, erythema, urticaria, contact dermatitis, fever, anaphylactic shock, angioedema, bronchospasm, interstitial nephritis, haemolytic anaemia, eosinophilia, serum sickness-like syndrome, exfoliative dermatitis, Stevens-Johnson syndrome and toxic epidermal necrolysis.)[1]
COMPATIBLE FLUIDS	Glucose 5% Sodium Chloride 0.9% Hartmann's solution[7]
PRECAUTIONS	Amoxycillin is contraindicated in patients with a history of severe allergy to penicillins, care should also be taken with cephalosporins and carbapenems as cross reactivity may occur between penicillins, cephalosporins and carbapenems.[7] Rapid IV injection may result in seizures.[7]
COMMENTS	IV aminoglycoside antibiotics are inactivated by IV cephalosporins, penicillins and teicoplanin. Administration of these agents should be separated by at least 1 hour. If this is not possible, (for example HITH patients) lines should be flushed well with sodium chloride 0.9% before and after giving each medication.[1,9] Each gram of amoxycillin (Fisamox® brand) for injection contains 2.6mmol of

	sodium. Check product literature for sodium content of alternative brands.[7] A generalised dull red, maculopapular rash occurs in 5 to 10% of children receiving amoxycillin. The rash tends to occur within 3 to 14 days of commencing therapy and is more common in patients with infectious mononucleosis, acute lymphoblastic leukaemia, chronic lymphocytic leukaemia and HIV infection. The rash should be evaluated to differentiate an immediate hypersensitivity reaction from a delayed hypersensitivity reaction to amoxycillin.[1,2]

Please note: The information contained in this guideline is to assist with the preparation and administration of **amoxycillin**. Any variations to the doses recommended should be clarified with the prescriber prior to administration

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