SULFAMETHOXAZOLE AND TRIMETHOPRIM (IV)

This drug must be guardrailed

Trade Name	DB Sulfamethoxazole and Trimethoprim Injection (Pfizer) Sulfamethoxazole and Trimethoprim Concentrate Injection BP Bactrim® Bactrimel® (Section 29)
Class	Antibiotic, sulphonamide derivative + folate antagonist
Mechanism of Action	Sulfamethoxazole (SMX) interferes with bacterial folic acid synthesis and cell growth. Trimethoprim (TMP) inhibits enzymes in the folic acid pathway.
Indications	**Indication 1:** Pneumocystis carinii **prophylaxis** **Indication 2:** Pneumocystis carinii **treatment**
Contraindications	Jaundice - increases risk of kernicterus as sulfamethoxazole competes for protein binding sites usually available to bilirubin. G6PD deficiency - increased risk of haemolytic anaemia
Supplied As	Sulfamethoxazole and Trimethoprim Concentrate Injection BP containing 400mg of sulfamethoxazole and 80mg of trimethoprim per 5mL ampoule (480mg/5mL)
Dilution	Shake the ampoule well before use then dilute: **Drug** | **5% Glucose Added** | **Final Volume** | **Concentration** 96mg (1mL) | 29mL | 30mL | **3.2mg/mL** If the patient is **fluid restricted**: **Drug** | **5% Glucose Added** | **Final Volume** | **Concentration** 96mg (1mL) | 14mL | 15mL | **6.4mg/mL** This solution is not stable and any remaining portion should be discarded immediately after use. In **severe fluid restriction:** Sulfamethoxazole/trimethoprim may be given undiluted via a central line **(480mg/5mL = 96mg/mL)** Ensure the **dose volume is at least 0.5ml** for accurate administration
Dosage / Interval ***Must chart guardrail and use Alaris pump***	All dose references in this profile relate to 'cotrimoxazole' but must be charted as the combination of sulphamethoxazole and trimethoprim **Indication 1: Prophylaxis** 450mg/m^2 up to a maximum dose of 960mg **m^2 = (0.05 x wt(kg)) + 0.05** **Indication 2: Treatment -** 60mg/kg/dose

Guardrail	Concentration: Min – 3.2mg/mL Max – 96mg/mL Soft Alert Min: 30mg/kg/hr Hard Alert Max: 60mg/kg/hr Soft Alert Max: 40mg/kg/hr Default Setting: 40mg/kg/hr
Interval	**Indication 1:** Twice a day for 3 days of the week **Indication 2:** 12 hourly for 14 days
Administration	**Indication 1:** Prophylaxis is usually given orally so use suspension and see oral sulfamethoxazole +trimethoprim, drug profile **Indication 2:** Treatment can be given orally (see oral sulfamethoxazole +trimethoprim, drug profile) or iv infusion over 60 minutes
Compatible With	5% and 10% glucose, 0.45% and 0.9% sodium chloride, glucose/sodium chloride combinations and Hartman's Solution. **Y-site:** use a separate line if at all possible and check with pharmacist on a case by case basis (NICU tend to use relatively high concentrations and data on compatibility with other medicines is limited and conflicting)
Incompatible With	Adrenaline, amikacin,aminophylline, amiodarone, amphotericin B, amoxicillin, benzylpenicillin, calcimchloride, calcium gluconate, cefazolin, cefotaxime, ceftazidime, ceftriaxone, chloramphenicol, clindamycin,dexamethasone, diazepam, diazoxide, digoxin, dobutamine, dopamine,epoetin alpha, erythromycin, fentanyl, fluconazole, folic acid, furosemide, ganciclovir, gentamicin, glycopyrrolate, hydralazine, hydrocortisone, imipem=nem cilastatin, indometacin, insulin, isoprenaline, ketamine, lidocaine linezolid, methylprednisolone, metoclopramide, midazolam, nitroprusside, noradrenaline, phenobarbital, phenytoin, potassium chloride, propranolol,protamine, pyridoxine, ranitidine, sodium bicarbonate, ticarcillin clavulanate, tobramycin, urikinase, vancomycin
Monitoring	Watch for skin reactions and blood dyscrasias Renal function and Full blood count
Stability	Prepare solutions immediately before use and commence infusion within 30 minutes of preparation Discard any remaining solution after 24 hours. (NB: concentrated solutions should be discarded immediately after use)
Storage	Store below 30 C, protect from light, Do Not Refrigerate. Do not use any solution that is cloudy or has visible precipitate
Adverse Reactions	Skin rashes, stop at first sign of rash due to risk of Stevens Johnson Syndrome. Blood dyscrasias, hepatitis, vomiting, cough, breathing difficulties

Metabolism	Eliminated in the urine. Protein binding 68%.
Comments	**Note**: In Christchurch we dose based on combined product ie trimethoprim plus sulfamethoxazole however some centres quote dose based on trimethoprim content alone. Check dosing advice carefully. **IV contains:** Trimethoprim 16 mg/mL and sulfamethoxazole 80 mg/mL, in a 5mL ampoule Intravenous administration is **not** to be used in treatment of newborn infants **except** on advice of a consultant for management of **Pneumocystis carinii.** pH of injection = approx 10, sodium content = 37mg/5mL
References	1. BNF for Children 2006 2. NZHPA Notes on Injectable Drugs 5th Edition 2004 3. Medicines for Children, RCPCH, 1999 4. Neofax, 1999 5. BNF for Children 2007 6. www.anmfonline.org 7. www.micromedexsolutions.com
Updated By	P Schmidt, B Robertshawe February 2006 A Lynn, B Robertshawe Oct 2007 A Lynn, B Robertshawe, F Robertson May 2009 (new pumps) A Lynn, B Robertshawe September 2009 A Lynn, B Robertshawe July 2012 (re-order profile) M Wallenstein, A Lynn, B Robertshawe September 2020 (update) A Lynn, B Robertshawe February 2022 A Lynn B Robertshawe June 2024 (update)