		Type: Drug Guideline	Document reference: 2951	Manual Classification: Waikato DHB Drug Guidelines
Title: Benzylpenicillin for neonates			Effective date: 16 February 2022	
Facilitator <small>sign/date</small> <i>Kerrie Knox</i> Pharmacist	Authorised <small>sign/date</small> <i>Jutta van den Boom</i> Clinical Director NICU	Authorised <small>sign/date</small> <i>John Barnard</i> Chair Medicines & Therapeutics	Version: 2	Page: 1 of 3
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BRIEF ADMINISTRATION GUIDE

For detailed information refer to The Australasian Neonatal Medicines Formulary [benzylpenicillin](#) guideline



Critical Note: there are minor variations between the ANMF and Waikato DHB best practice within this drug guideline – see **yellow shaded text**

Indications: Bacterial infections sensitive to benzylpenicillin

Route: Intravenous, intramuscular (if IV route unavailable)

- Supplied as benzylpenicillin sodium 600 mg vial, powder for reconstitution
pH of benzylpenicillin is 5.5 - 7.5
Note: Do not confuse with benzathine penicillin which is only used for IM injection

Dose:

- Sepsis 60 mg/kg/dose (excluding meningitis and congenital syphilis)
Dosing interval as per table below

Corrected Gestational Age (weeks)	Postnatal age (days)	Interval (hours)
< 30 ⁺⁰	0 - 28	12
< 30 ⁺⁰	29+	8
30 ⁺⁰ – 36 ⁺⁶	0 - 14	12
30 ⁺⁰ – 36 ⁺⁶	15+	8
37 ⁺⁰ – 44 ⁺⁶	0 - 7	12
37 ⁺⁰ – 44 ⁺⁶	8+	8
≥ 45		6

- Meningitis 90 mg/kg/dose. Dosing interval as per table below

Corrected Gestational Age (weeks)	Postnatal age (days)	Interval (hours)
< 37 ⁺⁰	0 - 7	12
< 37 ⁺⁰	8+	8
≥ 37 ⁺⁰	0+	8

- Congenital syphilis 30 mg/kg/dose. Dosing interval as per table below


Corrected Gestational Age (weeks)	Postnatal age (days)	Interval (hours)
< 30 ⁺⁰	0 - 28	12
< 30 ⁺⁰	29+	8
30 ⁺⁰ – 36 ⁺⁶	0 - 14	12
30 ⁺⁰ – 36 ⁺⁶	15+	8
37 ⁺⁰ – 44 ⁺⁶	0 - 7	12
37 ⁺⁰ – 44 ⁺⁶	8+	8

Frequency of dosing may need to be adjusted in renal impairment

Preparation and administration

Compatible fluids: glucose 5%, glucose 10%, sodium chloride 0.9% (Note: benzylpenicillin contains 0.28mmol sodium per 100mg), water for injection.

At Y-site: amino acid solution and lipid emulsion (IVN)

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IV infusion

- Dilute each vial with 9.6 mL of water for injection to make 10 mL of benzylpenicillin **60 mg/mL** (Note: 600 mg of benzylpenicillin displaces 0.4 mL of diluent).
Maximum concentration if necessary: **300 mg/mL** (make as per IM injection) via a **central line only**
- Shake vial vigorously to dissolve powder
- Draw up prescribed dose and infuse over 30 minutes

IM injection

- Dilute each vial with 1.6 mL of water for injection to make 2 mL of benzylpenicillin 300 mg/mL
- Shake vial vigorously to dissolve powder
- Draw up prescribed dose (may be diluted further if required to reduce pain)
- Administer by deep injection into the vastus lateralis muscle of the thigh
- Injection may be painful, apply cold pack to the injection site to alleviate pain and discomfort.

Monitoring

- Renal, hepatic, cardiac and hematologic function during prolonged therapy
- Observe infusion site for thrombophlebitis or extravasation
- Assess for signs of anaphylaxis and adverse reactions, including SpO₂ monitoring.

Storage and Stability

- Use reconstituted and diluted solution immediately – do not store

Competency for Administration

This procedure is carried out by, or under, the direct supervision of a registered nurse/registered midwife who holds current Waikato DHB Generic Medicine Management and IV certification plus Guardrails competency (if administering IV) as well as Neonatal specific competency NCV/NAC (if administering via CVAD).


Guardrails Information

Benzylpenicillin is not currently Guardrails profiled for NICU however will be added at the next upload. See below for limits:

Guardrails Drug Name	Benzylpenicillin*
Concentration (mg/ml)	
Minimum	60
Maximum	300
Dose Rate (mg/kg/hr)	
Default	120
Soft minimum	60
Soft maximum	180
Hard maximum	182

References

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