# BENZYLPCENICILLIN

## Indication
- Treatment of:
  - Susceptible infections (most gram-positive organisms) including GBS
  - Congenital syphilis
  - Meningitis

## Presentation
- Vial 600 mg | 1.2 g

## Dosage
### Sepsis
- 60 mg/kg (frequency according to current gestational age and day of life)^2

<table>
<thead>
<tr>
<th>Current gest age (weeks)</th>
<th>Day of life (days)</th>
<th>Frequency</th>
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</thead>
<tbody>
<tr>
<td>29+6 or less</td>
<td>0–28</td>
<td>every 12 hours</td>
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<td>29 or more</td>
<td>every 8 hours</td>
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<td>30+0–36+6</td>
<td>0–14</td>
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<td>15 or more</td>
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<tr>
<td>37+0–44+6</td>
<td>0–8</td>
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<td>8 or more</td>
<td>every 8 hours</td>
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<tr>
<td>45+0 or more</td>
<td>0 or more</td>
<td>every 6 hours</td>
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### Congenital Syphilis
- 30 mg/kg (frequency according to day of life)

<table>
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<th>Frequency</th>
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<td>0–7</td>
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<td>8–30</td>
<td>every 8 hours</td>
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<tr>
<td>31 or more</td>
<td>every 4 to 6 hours</td>
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## Preparation
- 600 mg vial
  - Add 1.6 mL of water for injection
  - Draw up solution and make up to 10 mL total volume with water for injection
  - Concentration now equal to 60 mg/mL^3

- 1.2 g vial
  - Add 3.2 mL of water for injection^3
  - Draw up 2 mL of solution and make up to 10 mL total volume with water for injection^3
  - Concentration now equal to 60 mg/mL^3

## Administration
- IV infusion
  - Prime the infusion line and reduce total syringe volume to the prescribed dose
  - IV infusion via syringe driver pump over 30 minutes^4
  - On completion, disconnect syringe and infusion line
  - Flush access port at same rate of infusion

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### Special considerations

- **Cautions**
  - 600 mg contains 41.4 mg of sodium\(^3,4\)
  - If renal impairment, may need dosage adjustment
- 600 mg is equivalent to 1 million units of benzylpenicillin (also referred to as Penicillin G)
- If co-prescribed with aminoglycosides, administer aminoglycoside first and flush before and after each medicine
- IM route only if IV not possible
- UAC route: discuss with neonatologist/paediatrician prior to use

### Monitoring

- Renal and hepatic function if prolonged high-dose treatment\(^6\)
- Extravasation risk

### Compatibility

- **Fluids**
  - 5% glucose\(^4\), 0.9% sodium chloride\(^4, 7\), water for injection\(^4\)
- **Y-site**
  - Limited and conflicting information. Check with pharmacist

### Incompatibility

- **PN and fat emulsion\(^2\):** co-infusion with benzylpenicillin not recommended (evidence limited). If unavoidable, seek pharmacist advice first, filter infusion and flush before and after
- **Drugs**
  - Aminoglycosides\(^4\) (amikacin, gentamicin, tobramycin) dobutamine\(^4\), heparin\(^4\), noradrenaline (norepinephrine)\(^4\), phenobarbital (phenobarbitone)\(^4\), suxamethonium\(^4\)

### Interactions

- Nil known

### Stability

- **Vial**
  - Store below 25 °C. Protect from light\(^3,4\)
- **Reconstituted solution**
  - Use immediately\(^3,4\)
Side effects

- Hypersensitivity reactions: rare in neonates. May present as erythema and rash (maculopapular rash, red purple plaques or urticarial type plaques6-11)
- Blood pathology: electrolyte disturbances (hypernatremia or hypokalaemia), dyscrasias (e.g. neutropenia, related to dose and duration of treatment, thrombocytopenia) angioedema, haemolytic anaemia, eosinophilia, serum sickness-like syndrome
- Digestive: diarrhoea, vomiting, Clostridium difficile-associated disease
- Genitourinary: interstitial nephritis
- Integumentary: inflammation at injection site
- Nervous system: neurotoxicity with high doses and/or rapid IV injection4 (e.g. drowsiness, coma, seizures)

Actions

- Beta-lactamase sensitive penicillin antibiotic

Abbreviations

- EOGBSD: early onset group B streptococcal disease
- GBS: Group B streptococcus
- IM: intramuscular
- IV: intravenous
- UAC: umbilical arterial catheter

Keywords

- Benzylpenicillin, penicillin, penicillin G sodium, crystalline penicillin, BenPen

The Queensland Clinical Guideline Neonatal Medicines is integral to and should be read in conjunction with this monograph. Refer to the disclaimer. Destroy all printed copies of this monograph after use.

References


Document history

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<th>Effective</th>
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