

PAEDIATRIC NURSING PRACTICE MANUAL  
SECTION 2

DRUG AND INTRAVENOUS (IV) THERAPY

2.5 TECHNIQUES FOR ADMINISTRATION OF PARENTERAL MEDICATIONS

2.5.9 ADMINISTERING ANTIBIOTICS USING A BAXTER™ INFUSOR

**Aim**

To administer medication using a Baxter™ Elastomeric infusion pump so as to minimise risk.

**Background**

The Baxter™ Infusor (LV10) is a latex free, non-electronic medication pump designed to provide ambulatory intravenous infusion therapy over 24 hours. The pump is primarily used at PMH for intravenous antibiotic therapy for inpatients and HiTH patients. Medication is delivered to the patient as the elastomeric “balloon” consistently deflates over a period of time and gently infuses solution through the IV tubing and into the patient’s intravenous catheter/port.<sup>1</sup>

**Indications**

Antibiotic/antiviral therapy  
Chemotherapy (not at PMH)  
Pain management (not at PMH)  
Iron chelation (not at PMH)

**Key points**

1. The Baxter™ infusion system is only to be used with a central venous access device (CVAD).
2. The prescribed dose and duration of medication is to be prescribed by a medical officer on the standard medication prescription chart and ordered through CIVAS. **Note: These take 24 hours from ordering to arrive at PMH.**
3. The Baxter™ Elastomeric infusion pump is labelled with the flow rate at which it is designed to pump.
4. Use aseptic non touch technique for preparation, administration and discontinuation of a Baxter infusion. Refer to [PNPM 2.4.8](#) Care and management of a Central Venous Access Device (CVAD).
5. Infusion flow rate can be affected by factors such as temperature, medication viscosity, type of intravenous access, height of the Infusor in relation to the patient access device and fill volume.
6. The Baxter™ Infusor contains no metal and is compatible with CT and MRI scanner.

**Setting up the Baxter™ Infusor**

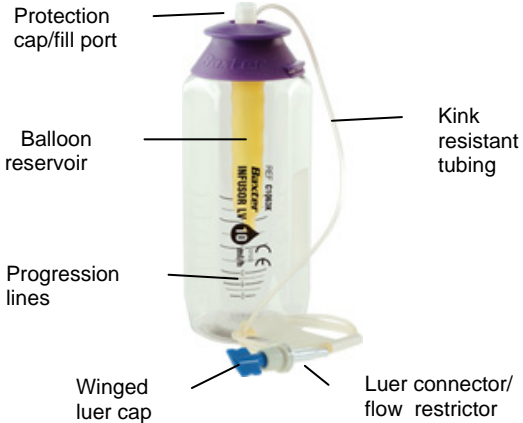
**Equipment**


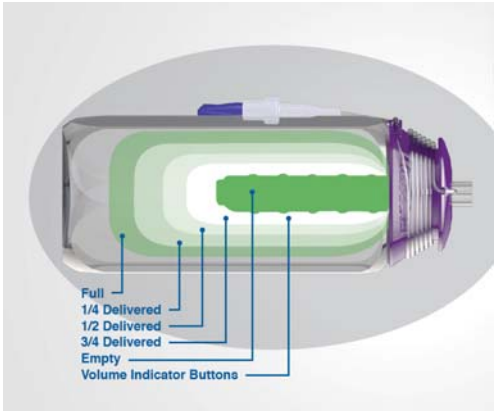
Trolley or blue tray  
PPE: gloves, apron  
Medication chart  
Baxter Infusor  
Swabs- 2% chlorhexidine/70% isopropyl alcohol  
10mL Posiflush syringe (or syringe/saline ampoule/blunt drawing up needle)  
± 10mL syringe for aspirating CVAD  
± new needle free bung-Maxplus®  
Central Intravenous line and Medication labels

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Administering Antibiotics using a Baxter Infusor  
Techniques for Administration of Parenteral Medications  
Paediatric Nursing Practice Manual (PNPM)  
Princess Margaret Hospital  
Perth, Western Australia

All protocols should be read in conjunction with the Disclaimer in the Preface of this manual

PROCEDURE	ADDITIONAL INFORMATION
Wash hands and gather equipment. Clean tray or trolley with 70 % alcohol wipe or sporocidal wipe and allow to dry.	Remove the Infusor from refrigerator directly before use unless otherwise indicated.
Check the label on the Baxter™ Infusor corresponds with the prescription. Check expiry date. Check the balloon is filled to the labelled nominal volume.	Refer to <a href="#">PNPM 2.1.2</a> Checking and Administration of Medications.  Infusor will flow faster if under filled.
Repeat hand hygiene and don non-sterile gloves.  Remove the blue winged luer cap from the end of the Infusor tubing briefly using aseptic non touch technique.  Check to make sure that a bead of fluid is visible at the end of the tubing.  Replace the winged luer cap until ready to attach to the patient.	
Cleanse the bung of the CVAD catheter using chlorhexidine/alcohol swab for 20 seconds and allow to dry. Attach 10mL syringe, unclamp the CVAD catheter and gently aspirate until blood is visible.	Ensure the patients CVAD is patent before attaching to the Infusor.
Re-clamp the CVAD catheter and discard syringe. Flush with the saline syringe.	Refer to <a href="#">PNPM 2.4.8</a> Principles of CVAD management and <a href="#">PNPM 2.3.8</a> Flushing and heparin locking central venous access device.
Repeat cleansing of the bung as above. Remove the Winged Luer Cap and connect the Infusor tubing to the CVAD catheter with a quarter clockwise turn. Unclamp the CVAD catheter.	Do not over tighten as this risks damaging the connector.
Secure the luer-connector close to the child's skin. (Ensure the connector does not cause pressure to underlying tissues).	Optimal flow rate for the Infusor LV10 is when the flow restrictor is maintained at <i>peripheral</i> skin temperature- approx 31°C. <sup>1</sup> <b>Note:</b> Central skin temperature is approx 33°C- flow rate may increase by 4-5%. <sup>1</sup>

PROCEDURE	ADDITIONAL INFORMATION
Attach blue Intravenous line label as close to patient access device as possible.	See <a href="#">PNPM 2.12.1</a> Safe Labelling guideline. 
Place the Infusor in the carry bag and as level with the luer lock connector as possible.	Flow rate is most accurate when the balloon reservoir and the luer lock connector are at the same height.
Do not place Infusor device in direct sunlight. Do not expose to excessive heat (eg. under bedclothes; near a heat source) or excessive cold (eg. under ventilation vents).	Sunlight/UV light may damage the Elastomeric material and potentially result in rupture of the balloon. Temperature will affect flow rate.
<p><b>Monitoring Infusion Progress</b></p> <p>Observe the progression lines on the Infusor housing to monitor infusion progress over time- infusion should be complete at 24 hours.</p> <p>Infusion is complete when the “balloon” is completely deflated and all eight indicator buttons (four on either side of balloon) on the inside of the device are clearly visible.</p> <p>Note: The Infusor will maintain positive pressure whilst connected to the patients CVAD.<sup>1</sup></p>	 <p>As the Infusor delivers medication the elastomeric “balloon” reservoir will appear to be shrinking over time.</p>
<p><b>Disconnecting a Baxter™ Infusor:</b></p> <p>Perform hand hygiene.</p> <p>Don PPE: non-sterile gloves, apron.</p>	
Cleanse the connector sites with 2%chlorhexidine/70% alcohol swabs and allow to dry.	
Clamp the patient CVAD.	Clamp over the reinforced sleeve of a Broviac catheter.
<p>Disconnect the Infusor from the patient.</p> <p>Place the Infusor into a waste bag and dispose into clinical waste.</p>	Place a cap on the end of the luer connector or attach to the fill port at the top of the Infusor to avoid spillage of any remaining contents.

PROCEDURE	ADDITIONAL INFORMATION
<p>Repeat hand hygiene.</p> <p>Flush the line using aseptic non touch technique as per <a href="#">PNPM 2.3.8</a> Flushing and Heparin Locking of Peripheral and Central Venous Access Devices.</p>	
<p><b>When changing an Infusor-</b> follow 'Setting up an Infusor' instructions as above.</p>	

**Troubleshooting:**<sup>1</sup>**Infusor too fast/too slow:****1. Was the Infusor placed at the correct height?**

Flow rate is decreased by 0.5% per 2.54cm if the reservoir is positioned below the flow restrictor. The flow rate will increase by 0.5% per 2.54 cm if positioned above the flow restrictor.

**2. Was the Infusor maintained at the correct temperature?**

Temperature can also affect the viscosity of the medication and thereby alter the flow rate. The flow rate will increase/decrease by 2.3% for every 1°C deviation in temperature.

To maintain optimum temperature of 31°C, place the flow restrictor at a peripheral site on the skin

Do not place the Infusor beneath bedclothes or expose to air conditioning vents and heat sources.

**3. Is the catheter size appropriate?**

Flow rate is affected by the length, diameter and location of the patients CVAD. A 22 gauge (3Fr) or larger diameter catheter will provide nominal flow rates.

**No Flow:**

- Ensure flow is verified by visualising a bead of fluid forming at the end of the flow restrictor before the Infusor is attached to the patient.
- Observe for air in the Infusor set as this may result in low flow or no flow.
- Ensure the CVAD is patent.
- Check for kinks in the patient catheter and the Infusor tubing as this will obstruct the flow.

**Reference:**

1. Baxter Elastomeric Pumps: Clinician Guide. . Available from: <http://www.capca.ca/wp-content/uploads/Baxter-Elastomeric-Pumps-Clinician-Guide11.pdf> Accessed:

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Skryabina E.A and Dunn T. Disposable Infusion Pumps. American Society of Health-System Pharmacists.2006. 63(1) p1260-1268. Available from:

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