



## SECTION 11: CARE OF THE CHILD WITH DIABETES

### 11.9 Insulin Pump Management for Inpatients with Diabetes (Continuous Subcutaneous Insulin Infusion)

*This document now incorporates PNPM 11.9.1 Checking Pump Settings in addition to the existing PNPM 11.9.*

#### Aim

For the safe administration of continuous subcutaneous insulin via a pump.

#### Definitions

**Food bolus:** a bolus of insulin delivered prior to food containing carbohydrates.

**Correction bolus:** a bolus of insulin delivered when the blood glucose level is above the target.

#### Key Points

- Insulin is a *high risk drug* – refer to [CAHS High Risk Drug policy](#) page 5
- Only Novorapid and Humalog are used in insulin pumps.
- The basal insulin rate is the continuous rate at which the pump automatically delivers a small amount of insulin every hour, programmed by the diabetes team. The insulin pump allows the basal rate to change automatically at pre-programmed times.
- **Indications for administration of Bolus insulin**
  - **Food Bolus:** delivered just prior to a carbohydrate meal or snack. The amount delivered by the patient/parent/nurse depends upon the amount of carbohydrate being consumed, and the Blood Glucose Level (BGL) immediately prior to administration.
  - **Correction Bolus:** delivered to correct a high blood glucose level to the target BGL, individualised for the patient and set in the pump calculator, as the Insulin Sensitivity Factor (ISF).
- Patients on an insulin pump are required to count carbohydrates in the meals and snacks.
- The basal and bolus insulin is documented on the medication chart.
- If a registered nurse is not familiar with the model of insulin pump, contact a diabetes educator during office hours for assistance.

- Out of hours, if parents are unavailable and the registered nurse is unable to navigate the pump menu, call the doctor for subcutaneous injection doses in the interim.

### Checking Pump Settings

Beginning of each shift: Independent second nurse check

- Ensure the pump settings correspond with the medication chart:
  - check the basal rate (basal review)
  - check the insulin: carbohydrate ratio (carb ratio)
  - check the insulin sensitivity/correction factor (ISF)
  - document the check on the Paediatric Short-Stay Medication Chart MR 860

Each hour:

- Ensure the pump is delivering insulin as expected:
  - check the current basal rate.
  - check the volume in the syringe corresponds with the volume infused.
  - document the check on the CSII Documentation Chart MR 864.02.

### Disconnecting the Pump

The pump may need to be temporarily suspended or disconnected for bathing/showering or for the treatment of moderate and severe Hypoglycaemia (BGL < 2mmol/L). Refer to [PNPM 11.7.3](#) Mild and Moderate Hypoglycaemia - Insulin Pumps.

#### **Note:**

- Do not disconnect the pump for more than 2 hours.
- Use aseptic non touch technique (Refer to [A&NTT framework](#)) to temporarily disconnect the pump for bathing/showering/dressing.

### Cannula Care

- Inspect the cannula insertion site for signs of infection at least once per shift or if any signs of discomfort.
- Parents provide insulin pump consumables, refill the insulin reservoir in the pump, prime the infusion line and insert the cannula.
- Parents insert the cannula on the abdomen, upper, outer thigh or upper outer quadrant of the buttocks every three days, or sooner if dislodged, or if there are signs of infection at the site.
- If parents or pump supplies are not available, call the doctor for subcutaneous injection doses in the interim.

**24 Hour Help Line:**


Medtronic Paradigm Insulin Pumps: 1800 668 670

Animas Insulin Pumps: 1300 851 056

Roche Combo Pump 1800 633 457

Related policies, procedures and guidelines.
<a href="#">PNPM 11.7.3</a> Mild and Moderate Hypoglycaemia - Insulin Pumpers.
<a href="#">PNPM 2.5.5</a> Subcutaneous Injections
<a href="#">PNPM 2.1.2</a> Checking and Administration of Medications.

Useful resources.
<a href="#">Australasian Paediatric Endocrine Group. (APEG)</a> National evidence based clinical guidelines for type 1 diabetes in children, adolescents and adults

File Path:	Insulin Pump Management for Inpatients with Diabetes (Continuous Subcutaneous Insulin Infusion) <a href="https://healthpoint.hdwa.health.wa.gov.au/policies/Policies/CAHS/PNPM%2011.09.00%20Insulin%20Pump%20Management%20for%20Inpatients%20with%20Diabetes%20(Continuous%20Subcutaneous%20Insulin%20Infusion).pdf">https://healthpoint.hdwa.health.wa.gov.au/policies/Policies/CAHS/PNPM%2011.09.00%20Insulin%20Pump%20Management%20for%20Inpatients%20with%20Diabetes%20(Continuous%20Subcutaneous%20Insulin%20Infusion).pdf</a>		
Document Owner:	CNC Diabetes		
Reviewer / Team:	CNC Diabetes & Diabetes Educators; Pharmacy		
Date First Issued:	November 2011	Version:	2.0
Last Reviewed:	18 November 2014	Review Date:	18 November 2017
Approved by:	CNC Diabetes; Pharmacy	Date:	
Endorsed by:	Paediatric Nursing Practice Committee	Date:	18 November 2014
Document Sponsor:	Nursing Director, PMCCU		
Standards Applicable:	NSQHS Standards: 		
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