

INSULIN PUMP MANAGEMENT IN EMERGENCY AND ACUTE CARE ORDER

Weight (kg)

Bulleted orders are initiated by default, unless crossed out and initialed by the physician / prescriber. Boxed orders () require physician / prescriber check mark () to be initiated.

NOTE: COMPLETE A NEW PPO FOR EACH ASSESSMENT

1. **ALLERGIES:** See Allergy / ADR record

2. **CONSULTS:** Diabetes Educator Dietitian Other (specify) _____

3. **ASSESS CAPACITY & AGREEMENT TO SELF MANAGE INSULIN PUMP**

- Assess patient: alert, oriented with no altered state of consciousness or cognitive status, including no medication related impairment
- Patient / Caregiver Questionnaire #826386 and Agreement #826385 completed and reviewed
- Assess for Contraindications (See below)

Absolute Contraindications to Insulin Pump Self Management by Patient / Caregiver
<ul style="list-style-type: none"> • Mental Illness that interferes with ability to self manage diabetes (eg. Suicidal) • Critical illness (e.g. sepsis, trauma) • Persistent unexplained hyperglycemia or inability to achieve blood glucose targets on insulin pump • Diabetic Ketoacidosis (DKA) / Hyperglycemic Hyperosmolar Syndrome (HHS) • Persistent unexplained hypoglycemia: Two or more blood glucose reading less than 4 mmol/L despite medical consultation and treatment review • Refusal to participate in self-care or sign Patient / Caregiver Agreement (#826385) • Questionable patient / caregiver self management competency (i.e. inability to complete Patient / Caregiver Questionnaire #826386)

4. **INSULIN**

OPTION 1–DISCONTINUE INSULIN PUMP

- Major Reason for Discontinuation of Insulin Pump: _____
- If continuing on subcutaneous insulin, write orders for multiple daily insulin injections. For adults use Insulin Subcutaneous Orders Adult-Eating / Bolus Feeds #829523, or Insulin Subcutaneous Orders Adult-NPO / Continuous Enteral Feeds #829524.
- Follow Guidelines: How to switch a patient from insulin pump therapy to subcutaneous multiple daily injections (see reverse)

****OR****

OPTION 2–CONTINUE SELF-MANAGEMENT WITH INSULIN PUMP / RE-START IF PREVIOUSLY DISCONTINUED

- Select patient's pre admission insulin (check ONE): aspart lispro glulisine
- Hospital pharmacy to provide rapid acting insulin (aspart) in vial as required
- Patient is responsible for all care, maintenance and documentation of insulin pump management, including re-filling reservoir with rapid acting insulin
- Patient may use pump or pre-filled insulin pen for bolus dose¹
 - Pharmacy to provide aspart (NovoRapid®) pre-filled insulin pen prn for bolus dose. Nursing to contact pharmacy if needed.
- Proceed to section 5 through 7

¹ Bolus dose via pre-filled insulin pen may be required prn if patient is on very large Total Daily Dose (TDD) that exceeds insulin reservoir or if temporary set failure.

Date (dd/mm/yyyy)	Time	Prescriber's Signature	Printed Name or College ID#
/ /			

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GUIDELINES

How to switch a patient from insulin pump therapy to subcutaneous multiple daily injections

For paediatric patients consult a physician experienced in children with diabetes.

Step	Procedure (Adults)	Example / Rationale
1.0	<p>Per IH Insulin Subcutaneous Pre Printed Orders – Adult Eating / Bolus Enteral Feeds (Form #829523), determine total daily dose (TDD) from pump settings. Or, if unknown, from last visit to Diabetes Education Centre (Refer to Diabetes Education Centre Patient Care Reports viewable in Meditech).</p> <p>Ask patient to display TDD for past few days on the pump.</p>	TDD = 40 units
2.0	<p>Give BASAL:</p> <ul style="list-style-type: none"> Calculate Basal Dose. Basal is $\frac{1}{2}$ of TDD Day 1: Give $\frac{1}{2}$ of BASAL dose ($\frac{1}{4}$ of TDD) immediately and the remaining $\frac{1}{2}$ ($\frac{1}{4}$ TDD) in 12 hours. Use a long-acting basal insulin (e.g. glargine). <p>If pump functioning and no concerns for hypoglycemia, continue the basal rate set in pump for 2 hours after first subcutaneous BASAL dose is given, then disconnect insulin pump.</p>	<p>$40 \text{ units} / 2 = 20 \text{ units}$. Use long-acting insulin. Give 10 units immediately and another 10 units in 12 hours.</p> <p>By dividing the basal dose in $\frac{1}{2}$ and giving 12 hours apart it is easier to transfer back onto pump.</p> <p>It takes 2–3 hours for subcutaneous basal to start working.</p>
3.0	<p>Give BOLUS:</p> <ul style="list-style-type: none"> Calculate mealtime bolus insulin Divide TDD by $\frac{1}{2}$ and administer $\frac{1}{3}$ of calculated dose before each meal. <p>**OR**</p> <ul style="list-style-type: none"> Ask patient to select dose of mealtime insulin using their usual insulin-to-carbohydrate ratio. 	<p>$40 \text{ units} \div 2 = 20 \text{ units}$. Administer $\frac{1}{3}$ of 20 units (6 units) as rapid-acting insulin before each meal.</p> <p>**OR**</p> <p>If insulin-to-carbohydrate (CHO) ratio is 1:10 g CHO, and patient consumes 60 g CHO, they take 6 units of rapid acting insulin before the meal.</p>
4.0	<p>Calculate correction dose with Insulin Sensitivity Factor (ISF) per TDD</p> <p>**OR**</p> <p>Patient can use the ISF they were using in pump and confirm with nurse, as per PPO #829523.</p>	<p>TDD = 40 units ISF = $100 / \text{TDD}$ Therefore $100 / 40 = 2.5$ Physician can select ISF 2 or 3 or write a custom order.</p>
5.0	Adjust insulin doses based on daily review of capillary blood glucose monitoring results.	
6.0	Transition back to insulin pump when patient competent. Ensure to notify patient/caregiver of basal insulin given while pump was discontinued. If patient/caregiver unsure of new basal rate to use, reconnect the pump only after the alternative insulin is expected to be cleared.	Patient/caregiver needs to factor alternative basal given when resuming pump self management to avoid hypoglycemia.

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**** THIS SECTION APPLIES TO INSULIN PUMP SELF MANAGEMENT ONLY**

(DO NOT COMPLETE if patient will be converted to subcutaneous insulin)

5. BLOOD GLUCOSE MONITORING

When patient self-monitoring, nurse to additionally do capillary blood glucoses (CBG) using IH Accu-Chek Inform II meter

- Nurse to measure CBG QID (ac and hs)
- Nurse to measure CBG at the following times in addition to ac and hs: _____
- Patient may use own blood glucose meter following accuracy check by the lab (see Lab order below), and record on Insulin Pump Log as per Agreement
- Acceptable Blood Glucose Range: ac _____ pc _____ hs _____
- Notify physician if blood glucose levels are out of the patient's acceptable range greater than 30% of the time

6. HYPOGLYCEMIA

- Adults: Follow Acute Adult Hypoglycemia Protocol (#829518) if blood glucose is less than 4 mmol/L
- Pediatric: Notify physician of hypoglycemia as follows: _____
- Pediatric: Treatment of hypoglycemia (See reverse for oral treatment guidelines) _____

7. LABORATORY

- Patient to use personal blood glucose meter
 - Patient blood glucose meter check (GLUMCHEK)
(Patient meter must be within 20% of lab value or patient monitor cannot be used in hospital)

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Guideline for Oral Treatment of Hypoglycemia in Children and Adolescents

Table 1. Examples of carbohydrate treatment of mild to moderate hypoglycemia in Children and Adolescents			
Patient weight	< 15 kg	15 to 30 kg	> 30 kg
Amount of carbohydrate	5 g	10 g	15 g
Carbohydrate source			
Glucose tablet (4 g)	1	2 or 3	4
Dextrose tablet (3 g)	2	3	5
Apple or orange juice, regular soft drink, sweet beverage (cocktails)	40 mL	85 mL	125 mL

Source: Canadian Diabetes Association Clinical Practice Guidelines.

Chapter 34: Type 1 Diabetes in Children and Adolescents. Can J Diabetes 2013;37(suppl 1):S153-162