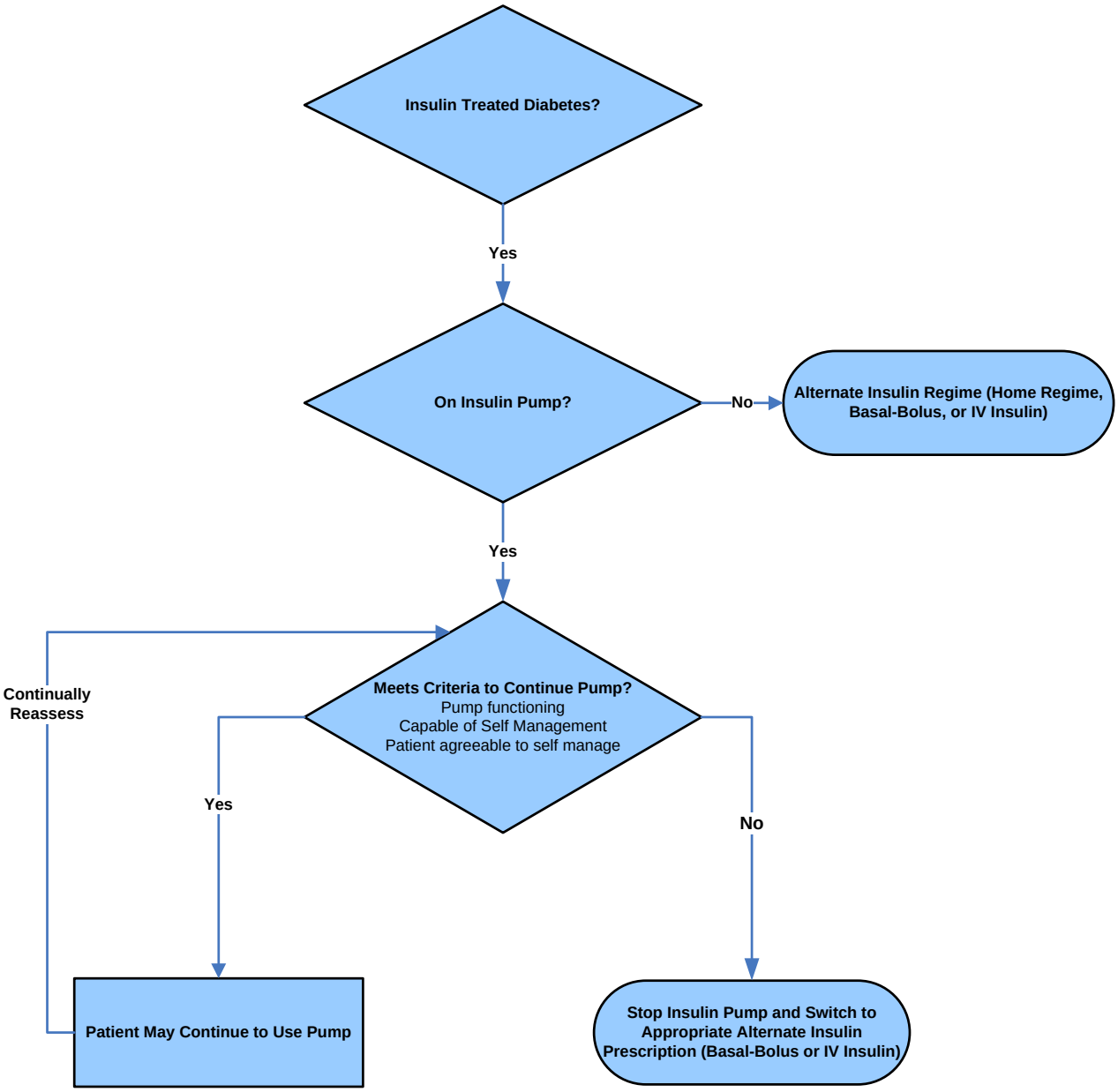
1. Algorithm for Assessing Self-Management of Insulin Pump in Hospital

Key Message: *"If pump stopped, must replace basal insulin within 2 hours to prevent Diabetic Ketoacidosis (DKA)"*



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In Hospital Orders for Self Management of Insulin Pump

Use this order set only if the most responsible health practitioner has determined that patient meets criteria **and,** Patient (Guardian if under age 18) agrees to the self management of insulin pump in hospital responsibilities

1. Discontinue all previous insulin orders
2. Orders marked with ☑ are active by default, unless crossed out and initialed by prescriber. Boxed orders (☐) require prescriber check mark (☑) to be initiated

☑ Patient/Guardian has read and accepted the terms of the Patient Agreement to Self-Manage Insulin Pump In-Hospital *(Form 20369)*

☑ Patient/Guardian to sign the Patient Agreement to Self-Manage Insulin Pump In-Hospital *(Form 20369)*. Completed form to be placed on chart.

☑ Patient (Guardian/Caregiver if under age 18) to complete Insulin Pump Information Sheet *(Form 20114)*

☑ Patient (Guardian/Caregiver if under age 18) to complete Insulin Pump Therapy Bedside Logbook daily *(Form 20189)*

☑ Nurse to review and sign Insulin Pump Therapy Bedside Logbook *(Form 20189)* at the end of each shift. Completed form to be placed into chart daily at 0700h

☑ Do not stop or suspend the insulin pump unless physician provides alternative regime of insulin. **(If pump stopped, basal insulin must be replaced within 2 hours to prevent Diabetic Ketoacidosis (DKA))**

Bedside Blood Glucose Monitoring ***(use hospital meter)***

☑ Before meals and bedtime
☑ 2 hours after site change
☐ 0300 hours
☐ Every _____ hours
☐ Other *(specify)* _____

Insulin Type ***(Choose One, for use in pump)***

☐ lispro *(HumaLOG®)* ☐ aspart *(Novorapid®)* ☐ Other *(specify)* _____

Hyperglycemia

☑ If blood glucose is over 14 mmol/L, check ketones. If positive for ketones, patient to self administer correction insulin by syringe OR pen AND change infusion set. Nurse to notify most responsible health practitioner.

Hypoglycemia

☑ **Do not** remove or stop Insulin Pump Therapy without Physician Order
☑ Treat according to Hypoglycemia protocol

Other Orders

☑ Patient to change site every ____ day(s) *(usually every 2-3 days)*, starting Date *(yyyy-Mon-dd)* _____

Pump Settings *(Patient to manage pump according their specified settings)*

☑ Refer to Insulin Pump Information Sheet *(Form 20114)* and Insulin Pump Therapy Bedside Logbook daily *(Form 20189)*

Physician Name *(print)*	Physician Signature	Date *(yyyy-Mon-dd*	Time *(hh:mm)*

Criteria for Self-Management of Insulin Pump

Patient is able to self-manage if all of the following criteria are met:
(*Attending MD responsibility to assess)*

1) Mentally
   a) Alert and oriented x 3
2) Physically
   a) Has no physical/dexterity limitations
   b) Alternatively, if patient unable to self-manage, a non-health system caregiver (i.e. family member/guardian) is available to provide support/assistance to manage insulin pump 24 hours/day
3) Medically stable
4) No identified reasons for ***pump discontinuation****

Criteria for pump discontinuation:

1) Cognitive or psychological limitations
   a) Altered, deteriorating or fluctuating changes to state of consciousness and/or cognitive status, including use of medications that may interfere with cognition or may be sedating (e.g. narcotics)
   b) Psychiatric illness that interferes with the patient's ability to self-manage (at risk of self-harm/suicide)

2) Medical conditions:
   a) DKA, or persistent unexplained hyperglycemia
   b) Persistent/recurrent severe hypoglycemia
   c) Critically ill (sepsis, trauma) and needs intensive care
   d) Other inter-current illnesses where use of the insulin pump is risky or non-effective, as determined by the medical staff

3) Pump functionality or performance limitations:
   a) Pump not functioning
      i. Hyperglycemia fails to respond to appropriate action (bolus insulin)
   b) Insufficient pump supplies (hospital will not provide)
   c) Physical limitations to using the insulin pump

4) Refusal or unwillingness to participate in self-care or to agree to self-management terms

5) Non-health system guardian or caregiver support/assistance (for patients under 18), required to manage insulin pump, is **not available 24 hours/day**

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Patient Agreement to Self-Manage Insulin Pump In-Hospital

(To be read and signed by patient / guardian and placed in patient chart)

For your safety and optimal medical care during hospitalization, we request that you review this form outlining what is expected of you in hospital to self-manage your diabetes with your insulin pump. If you feel that you cannot carry out these responsibilities, we would like to treat your diabetes with insulin injections and/or intravenous insulin and discontinue the use of your insulin pump.

These are the responsibilities for self-management of your insulin pump during your hospital stay:

1) Understanding the potential risk of using your insulin pump in the hospital:
   a) high and low blood glucose
   b) diabetic ketoacidosis; and
   c) infection

2) Completing the **Insulin Pump Information Sheet** *(Form # 20114)* which will provide all pump settings to your Physician or most responsible Health Practitioner.

3) Providing all necessary supplies to run your insulin pump:
   a) insulin pump
   b) insulin cartridge or pods
   c) tubing and infusion sets
   d) extra batteries for the pump
   e) dressings (if applicable); and
   f) insulin – only if non-formulary such as [glulisine (Apidra®)]

4) Changing the infusion set every 48-72 hours or sooner as needed for:
   a) skin problems; or
   b) if two blood glucose readings are greater than 14 mmol/L (with trace/negative ketones) in 4 hours
   c) immediately if blood glucose reading greater than 14 mmol/L and **positive** for ketones

5) Allowing hospital staff to test your blood sugar a minimum of 4 times per day (prior to meals and bedtime) using a hospital meter.
   a) you may test more often using your own meter /continuous glucose monitor
   b) if using a continuous glucose monitor, you must still do hospital meter testing

6) Allowing hospital staff to test **ketones** if blood glucose values are greater than 14 mmol/L

7) Completing the **Insulin Pump Therapy Patient Bedside Logbook** *(Form # 20189)* daily

8) Informing nursing staff if:
   a) you have any signs and symptoms of low blood sugar
   b) blood sugar less than 4 mmol/L
   c) blood sugar 14 mmol/L or greater
   d) you are pregnant and the majority of your sugars are over 7 mmol/L
   e) you have a problem with your pump and/or if you called the pump company's 24 hour "1-800 assistance line"; or
   f) you feel like you can no longer self-manage your pump

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Patient Agreement to Self-Manage Insulin Pump In-Hospital

9) Understanding that your insulin pump **may be discontinued** and a different insulin delivery provided for if any of the following occurs:
    a) Physician or Nurse Practitioner's order
    b) you are not physically, emotionally or mentally capable of managing the insulin pump at the time
    c) undergoing a radiology procedure other than an ultrasound
    d) having a procedure under a general anesthetic
    e) other reasons deemed necessary by your attending physician or most responsible health care provider where the use of the insulin pump is risky or non-effective
    f) you do not agree or adhere to the self-management terms above

☐ I have read what is expected of me to self-manage my diabetes using my insulin pump in hospital. I am satisfied with and understand the information I have been given, and I agree to fulfill the self-management responsibilities.		
Patient/Guardian *(print)*	Patient/Guardian *(sign)*	Date *(yyyy-Mon-dd)*

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Insulin Pump Information Sheet

1. This form must be completed by a Patient (Guardian/Caregiver if under 18) who has agreed, along with the most responsible health practitioner, that they will be responsible for self management of insulin pump while in hospital. Patient (Guardian/Caregiver if under 18) must provide their own pump, and pump supplies while in hospital.
2. Patient (Guardian/Caregiver if under 18) will provide pump information and pump settings, and return completed form to the nurse, who will place or file in chart

Pump Information

Manufacturer	Model Number	Customer Support Number

Insulin Type *(check one)*	Do you use a CGM?	Auto Off feature
☐ lispro *(HumaLOG®)* ☐ aspart *(Novorapid®)* ☐ Other *(specify)* _____	☐ Yes ☐ No Low Glucose Suspend? ☐ On ☐ Off ☐ Not Applicable	☐ On (pump shuts off after ____ hours) ☐ Off

Typical Total Daily Dose of Insulin _____ units/24 hours

Pump Settings

Basal Rate(s) units/hr		Insulin:Carbohydrate Ratio (ICR)		Correction/Insulin Sensitivity Factor(s) (ISF)		Target Glucose mmol/L	
Time *(hh:mm)*	Rate	Time *(hh:mm)*	1 unit:gram carb	Time *(hh:mm)*	1 unit lowers glucose by this amount (mmol/L)	Time *(hh:mm)*	Glucose
						Insulin Active Time *(hrs)*	

Bolus Insulin (Not using ICR)

Units _____ ☐ With Breakfast/feed at Time *(hh:mm)* _____	Units _____ ☐ With Lunch/feed at Time *(hh:mm)* _____	Units _____ ☐ With Dinner/feed at Time *(hh:mm)* _____	Units _____ ☐ With Other _____ at Time *(hh:mm)* _____

Patient/Guardian/Caregiver Name *(print)*	Patient/Guardian/Caregiver Signature	Date *(yyyy-Mon-dd)*

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Insulin Pump Therapy Patient Bedside Logbook

1. Patient (Guardian/Caregiver if under 18) to fill out daily
2. Nurse to sign at the end of every shift to confirm logbook has been completed. Nurse to review and file in patient chart each morning at 0700h.

Date *(yyyy-Mon-dd)*

	0800h	0900h	1000h	1100h	1200h	1300h	1400h	**1500h**
Blood glucose *(mmol/L)*								
Ketones positive								
Carbohydrates *(grams)*								
Meal Bolus & Correction dose *(units)*								
Basal rate *(units/hr)*								
Site/set change								
Pump suspended/removed								
Pump reconnected								

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Comments

Signatures		
Nurse signature *(end of shift 1500h)*	Nurse signature *(end of shift 2300h)*	Nurse signature *(end of shift 0700h)*

20189(2016-03)

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