Improved Glycemic Management in Hospital:
Basal Bolus Insulin Therapy (BBIT)

Having trouble with Blood Glucose (BG) readings not being in the target range?

- Initial doses of insulin are a weight based safe, starting estimate to prevent hypoglycemia

- As a patient's condition changes insulin doses will require titration

- Review BG readings every 24-48 hours and titrate doses to achieve in hospital targets of 5.0-10.0 mmol/L (for most patients).

If **Breakfast** BG is:		If **Lunch** BG is:		If **Supper** BG is:		If **Bedtime** BG is:		If **Overnight** BG is:
LOW (below 5.0 mmol/L)	HIGH (above 10.0 mmol/L)	LOW (below 5.0 mmol/L)	HIGH (above 10.0 mmol/L)	LOW (below 5.0 mmol/L)	HIGH (above 10.0 mmol/L)	LOW (below 5.0 mmol/L)	HIGH (above 10.0 mmol/L)	LOW (below 5.0 mmol/L)
Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease
Bedtime BASAL		**Breakfast** BOLUS		**Lunch** BOLUS or **Breakfast** BASAL		**Supper** BOLUS		**Bedtime** BASAL

If ALL BG are HIGH (greater than 10.0 mmol/L), Calculate TDD from last 24 hours, Increase TDD by 10-20% and Recalculate all Basal, Bolus and Correction Doses

- If **HYPER**GLYCEMIA **OR HYPO**GLYCEMIA: Discuss with patient to determine if change in activity or oral intake was the cause. If yes, monitor carefully. If otherwise unexplained, increase or decrease doses by 10-20% as per Titration Table above.

Visit **www.bbit.ca** for more information in the "How to BBIT: a prescriber's guide"

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BBIT with Renal Insufficiency

Acute Kidney Injury:
Calculate initial total daily dose of insulin based on renal function and titrate according to patient response

Consider:
GFR 30-60 mL/min: **0.3** units/kg/day
GFR 15-30 mL/min: **0.2** units/kg/day
GFR below 15 mL/min: **0.15** units/kg/day

Insulin doses will require titration every 24-48 hours based on blood glucose

Chronic Kidney Disease:
No special adjustments to home insulin regimen unless the patient experiences recurrent hypoglycemia, or becomes NPO

Visit www.bbit.ca for more information on renal considerations and insulin therapy in the "How to BBIT: a prescriber's guide".

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Improved Glycemic Management in Hospital:
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IN-HOSPITAL BLOOD GLUCOSE TARGET RANGE 5 – 10 mmol/L
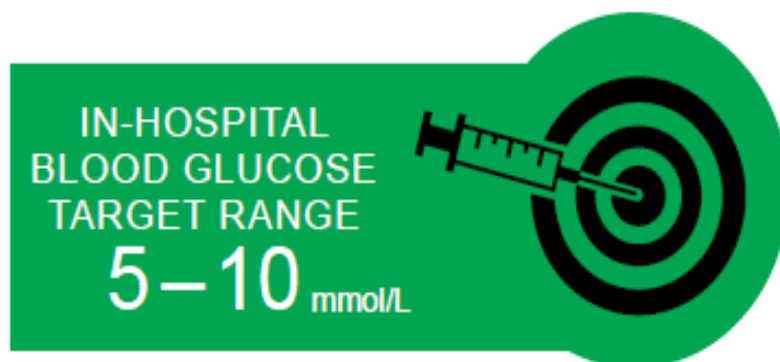
Corticosteroid Treatment & Blood Glucose Monitoring

Did you know the *AHS Provincial Glycemic Management Policy Suite* recommends blood glucose (BG) monitoring for **ALL** patients on corticosteroids, specifically glucocorticoids?

Strategies include:

Patients **with known Diabetes** on glucocorticoids:

- Monitor 4 times daily (QID) before meals and bedtime
- If BG above 10.0 mmol/L, initiate or modify existing glucose lowering therapy

Patients **without Diabetes** on glucocorticoids:

- Monitor 2 times daily (BID) lunch and supper. Monitoring at lunch and supper will align with potential for peaks in BG values following AM corticosteroid administration (eg: prednisone)

- Monitor for 48 hours:
    - If **ALL** BG below 8.0 mmol/L, may discontinue BG monitoring
    - If BG between 8.0-10.0 mmol/L, continue BID (as recommended above)
    - If BG above 10.0 mmol/L, initiate glucose lowering therapy

For more information on subcutaneous insulin therapy for patients on GC therapy see "How to BBIT: a prescribers guide" on www.bbit.ca

Glycemic Management in Hospital:
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Corticosteroid Treatment

- Corticosteroids, specifically Glucocorticoids (GC) frequently cause hyperglycemia even in patients without a known diagnosis of diabetes. These effects are usually transient and reversible upon stopping the GC.

- GC's usually raise the BG 4 to 8 hours after being given orally, or sooner following IV administration.

- Starting Basal Bolus Insulin Therapy (BBIT) **even temporarily while in hospital** will support the patient in achieving their in-hospital targets of 5.0-10.0 mmol/L.

- GC medications include: betamethasone, cortisone, dexamethasone, hydrocortisone, methylprednisolone, prednisone and prednisolone

For more information on subcutaneous insulin therapy for patients on GC therapy see "How to BBIT: a prescribers guide" on www.bbit.ca

Glycemic Management in Hospital:
Basal Bolus Insulin Therapy (BBIT)

BBIT Surgical Considerations
Prescribing Subcutaneous Insulin for Patients with Diabetes

- BBIT replaces insulin in a way that mimics normal physiology
  - BBIT is given proactively to prevent hyperglycemia in hospital
  - BBIT better maintains blood glucose within target
  - BBIT may be used temporarily in the peri-operative period, even in patients not requiring insulin pre-admission or post-discharge

- *BBIT Surgical Considerations* provides guidance for the surgical care team in the perioperative medical management of patients with diabetes

For information on "BBIT Surgical Considerations" visit www.bbit.ca

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Improved Glycemic Management in Hospital:
Basal Bolus Insulin Therapy (BBIT)

Can my patient safely stay on insulin pump therapy (IPT) while in hospital?

- AHS has guidelines to determine if a patient can safely self-manage IPT while in hospital

- If a patient meets the self-management criteria to stay on IPT, there are **4 required forms** to complete

- If a patient cannot self-manage their insulin pump, BBIT or IV insulin should be started within 2 hours to **prevent** Diabetic Ketoacidosis (DKA)

- Patients should be supported to self-manage their diabetes in hospital to meet the targets of 5.0-10.0 mmol/L (or individualized target)

❯ Visit www.ipumpit.ca to view the guidelines and required forms

❯ For more information on switching therapy see page 21 of the IPT guidelines

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Glycemic Management in Hospital:
Basal Bolus Insulin Therapy (BBIT)

IN-HOSPITAL BLOOD GLUCOSE TARGET RANGE 5 – 10 mmol/L

When should I order BBIT?

- Did you know that AHS has a provincial Glycemic Management Policy Suite that supports BBIT ordering in patients that require insulin (even temporarily) during their hospital stay?

  o This is 1 of 14 strategies implemented provincially to support patients in meeting their in-hospital glycemic target of 5.0 – 10.0 mmol/L (or individualized target)

For more information see:

➤ The provincial **Glycemic Management Policy** Suite

➤ **"How to BBIT: a prescribers guide"** on **www.bbit.ca**

Transitioning from BBIT and Discharge Planning

- Discharge planning around diabetes management should begin as early as possible during the hospital admission.

- *How to BBIT: a prescriber's guide* provides a transition algorithm with steps to consider when transitioning a patient from BBIT in-hospital to a safe and appropriate home regimen.

> **For more information on transitioning from BBIT and discharge planning see "How to BBIT: a prescriber's guide" on www.bbit.ca**

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Glycemic Management in Hospital:
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BBIT Surgical Considerations
Peri-operative Blood Glucose Targets for Patients with Diabetes

- The blood glucose target in the peri-operative period for most patients is 5.0-10.0 mmol/L

- Blood Glucose above 10.0 mmol/L is associated with adverse post-operative outcomes

- *BBIT Surgical Considerations* provides guidance for the surgical care team in the perioperative medical management of patients with diabetes.

For information on "BBIT Surgical Considerations" visit www.bbit.ca

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