

MEMO

To: YHHHS Providers, Nursing (add/edit list per COVID Incident Command)
 From: YNHHS FIC Endocrine Subcommittee
 Subject: YNHHS GLYCEMIC MANAGEMENT FOR COVID+/PUI INPATIENTS
 Date: 12-10-20

Situation: In excess of 35% of our COVID+ inpatients have diabetes and/or stress or medication-induced hyperglycemia. This is especially the case with more widespread use of dexamethasone. It has been identified that there is potential to minimize staff exposure and conserve personal protective equipment (PPE) in the glyceemic care of these patients.

Background: We are learning non-traditional ways to manage hyperglycemia in COVID+/PUI patients. These methods incorporate best practices learned from colleagues throughout the country, as well as those we have learned through our own experiences. We anticipate that these practices will evolve as we continue to learn more. Our goal is promote good but not necessarily intensive glyceemic management, balancing the effects of hyperglycemia, the need to avoid hypoglycemia, the lack of prospective evidence that stringent glucose control improves outcomes in COVID-19, and limited staff resources and PPE. Importantly, severe hyperglycemia must be avoided and treated promptly.

Assessment: During the COVID-19 pandemic, more liberal target blood glucose range (i.e., <200 mg/dL), alternative medication regimens to manage blood glucose, and the availability of early expert advice are being recommended for COVID+/PUI patients with diabetes to support quality glyceemic care while enhancing staff safety and preserving PPE.

Recommendations:

Virtual Glycemic Management Consult Service (YNHH only)

Yale endocrine fellows, supervised by a diabetes attending, will surveille Epic for COVID+ patients w/ significant hyperglycemia, focusing on those with BGs >250 x 2 in a 24 hr period. Those patients for whom glyceemic control is not a pressing issue (i.e. end of life care), those already followed by our consult services, and those in whom appropriate therapeutic changes have already been made will be excluded. Advice for consideration will be placed into Epic as an "Evaluation note" and the primary team will be alerted to this by a MHB message. Note that the VHSS' input is one time only and does not imply that the endocrine service or diabetes team is following the patient (as one would if a formal consult had been requested).

General Glycemic Care Considerations:

Type 2 diabetes or newly hyperglycemic patients on basal insulin (e.g. glargine) once daily only and/or oral diabetes medications

- CHECK POC glucose AM + HS ONLY (and PRN for symptoms of hypo- or hyperglycemia).
- Consider eliminating HS POC glucose testing if BGs are stable with no results less than 100 mg/dL x 3 days and no major change in clinical status, including starting or stopping steroids, nutritional support, etc.

Type 2 diabetes or newly hyperglycemic patients using correction scale and/or prandial rapid-acting insulin (e.g. lispro:

- CHECK POC glucose BEFORE EACH INJECTION + HS (and PRN for symptoms of hypo- or hyperglycemia).
- After ensuring that the patient does NOT have type 1 diabetes, if all BGs are < 180 mg/dL, consider stopping mealtime insulin and pre-meal POC glucose testing.

If patient with Type 2 diabetes or new hyperglycemia is eating and clinically stable:

- CONSIDER linagliptin 5 mg PO QD in combination or in lieu of insulin.
- Watch for hypoglycemia when adding any oral agent to insulin.

Anticipate hyperglycemia with initiation of steroids (e.g., dexamethasone), tube feeds, TPN, and hypoglycemia with their discontinuation; be *proactive*.

Call your hospital's endocrine/diabetes team for help at any time.

Room Service meal delivery was suspended on COVID units at YNH effective 11-23-20 to allow for clustering of care.

Additional NOVA Stat meters and “docks” have been deployed to allow meters to be left at the bedside. Wireless connectivity allows for results to flow directly to Epic.

In addition to clustering nursing care, when administering “correction” (sliding scale) insulin, **use a “buddy system”** whenever possible, with one RN performing POC glucose testing in the patient room and a 2nd RN drawing up and handing in syringe with appropriate insulin dose. This limits the need for one nurse to enter and exit the room twice to complete this process and is preferable to single RN “pre-drawing” syringe to maximum dose and discarding partial dose at time of administration as errors are more likely with this method.

Insulin Infusion Recommendations

A reminder: the **YNHHS COVID Insulin Infusion Protocol (IIP)** should be used when IV insulin is needed in COVID+/PUI patients, typically in the critical care setting. This IIP was built on the footprint of the standard YNHHS IIP which our staff are well familiar with, with variations specific to this population. These **variations from the standard YNHHS IIP** include:

- Q 2 hour blood sugars (allowing for decreased staff exposure and PPE use)
 - Nurses will need to **divide BG change (mg/dL) by the number of elapsed hours** to calculate hourly rate of BG change (mg/dL/hour)
- Target BG range of 150-199 mg/dL (safer given less frequent testing)
- Should be employed when **severe persistent hyperglycemia is not responding to aggressive titration of SQ insulin dosing.**
 - ≥200 mg/dL for ICU
 - >300-350 mg/dL in non-critical care areas (**YNHH only**)

Appendix: Endorsements

Individual Stakeholder Name	Month/Day/Year
Yi Hao Yu, MD	12-10-20
Silvio Inzucchi, MD	12-10-20
Sachin Majumdar, MD	12-10-20
Robert Gelfand, MD	12-10-20