



Insulin Infusion – Medical Surgical Units (Adult)

This protocol is for the management of hyperglycemia only following the Cerner Insulin Infusion (Module) orders.

Site Applicability

PHC: Acute Care Medical-Surgical Inpatient Units

VCH: *Units that can operationally support monitoring requirements:

- VGH: Acute Care Medical-Surgical Inpatient Units
- LGH: Cardiac Unit and Surgical Inpatient Units

Practice Level

Basic Skill: Registered Nurses, Registered Psychiatric Nurses

Need to Know

- Do not use the insulin infusion (module) for diabetic ketoacidosis, hyperglycemic hyperosmolar syndrome or hyperkalemia.
- *Increased staffing may be required to manage patient acuity and increased monitoring requirements.
- Ensure provider discontinues all other insulin and anti-diabetic medication orders while on insulin infusion.
- Stop the insulin infusion if patient's tube feed or total parenteral nutrition (TPN) is stopped - provider order required.
- An [Independent Double Check](#) is required for insulin infusions. Refer to the [PHC](#) and [VCH](#) DST.
- Patients may be transferred from the Emergency Department (ED) to Medical-Surgical units with insulin infusion in progress (running) when clinically stable and appropriate for transfer.
- Insulin infusion information should be communicated as part of nurse-to-nurse handover with the receiving nurse.



Protocol

Assessment

Check Capillary Blood Glucose (CBG) and adjust insulin infusion as per titration instructions (See Insulin Infusion (Module) Orders).

Target Point of Care Capillary Blood Glucose (CBG) = 6 to 10 mmol/L

Frequency of Capillary Blood Glucose Checks	
Q1h	Initially and with any infusion rate change
Q2h	If 2 consecutive Q1h readings with no rate change
Q4h	If 2 consecutive Q2h readings with no rate change

Insulin Infusion

- 100 units insulin in 100 mL 0.9% sodium chloride (1 unit/mL)
- Starting rate 0 units/h (minimum rate), maximum rate 30 units/h titrated based on protocol

Insulin Infusion Titration Protocol

- Start insulin infusion when CBG is greater than 10 mmol/L, initial rate as per provider order.
Maximum rate of 30 units/hour
- If insulin infusion rate is 0.5 units/hour (0.5 mL/hour) or less, contact Most Responsible Provider for ongoing orders

*See table below

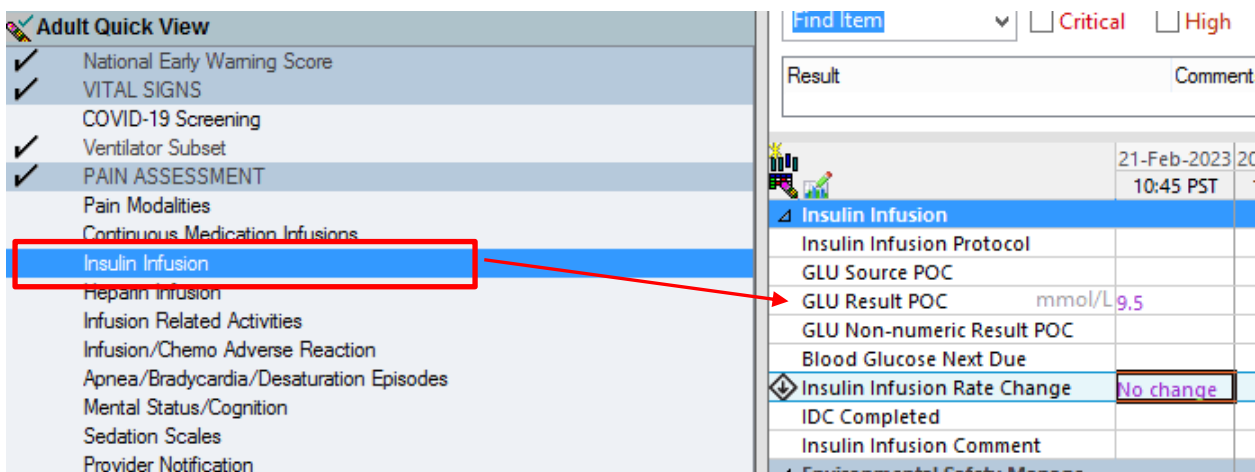
Current CBG	Titrates infusion	
Less than 4 mmol/L (or below 3.3 mmol/L in Pregnancy)	<ul style="list-style-type: none">• Stop infusion• follow Hypoglycemia Management in Adults Nurse Independent Activity• Notify Most Responsible Provider	
4 mmol/L to 5.9 mmol/L OR falls by greater than 4 mmol from previous reading	Current Rate	Interventions
	Less than 2 units/h	Decrease by 0.5 units/h Recheck blood glucose in 1 hour
	2 to 9.5 units/h	Decrease by 1 unit/h Recheck blood glucose in 1 hour
	10 to 19.5 units/h	Decrease by 2 unit/h Recheck blood glucose in 1 hour
	20 units/h or Greater	Decrease by 4 unit/h Recheck blood glucose in 1 hour Notify provider for further instruction
6 to 10 mmol/L Target Range	Continue current infusion rate	
Greater than 10 mmol/L	Current Rate	Interventions
	Less than 2 units/h	Increase by 0.5 units/h Recheck blood glucose in 1 hour
	2 to 9.5 units/h	Increase by 1 unit/h Recheck blood glucose in 1 hour
	10 to 19.5 units/h	Increase by 2 units/h Recheck blood glucose in 1 hour
	20 units/h or Greater	Increase by 4 units/h Recheck blood glucose in 1 hour Notify Provider for further instruction

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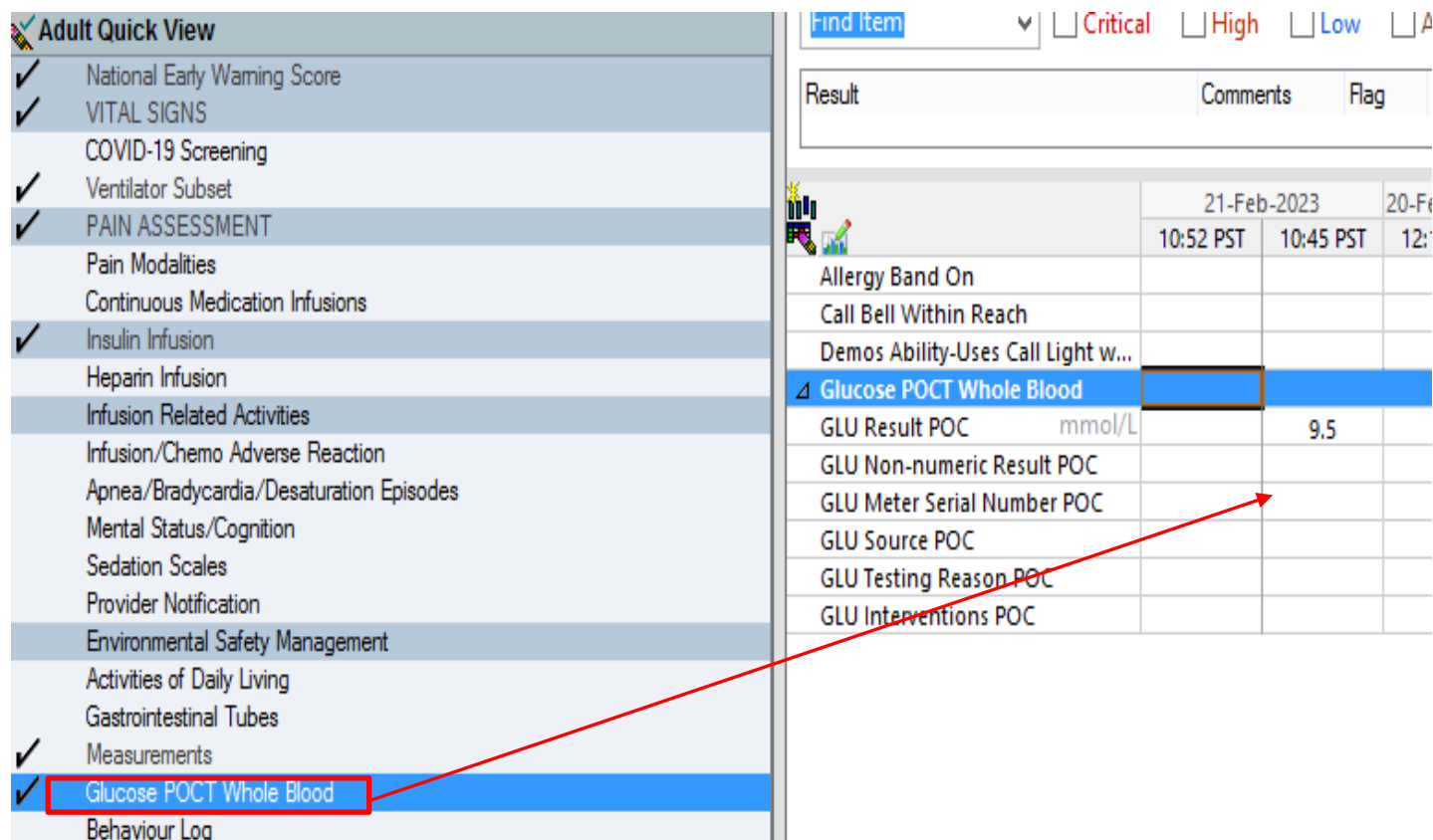
Documentation

CST Cerner: Document glucose point of care testing (POCT) whole blood readings in iView.

NOTE: The blood glucose results documented in the **iView** section for **Insulin Infusion** will flow to the **Glucose Blood Point of Care** section, or vice versa (see below).

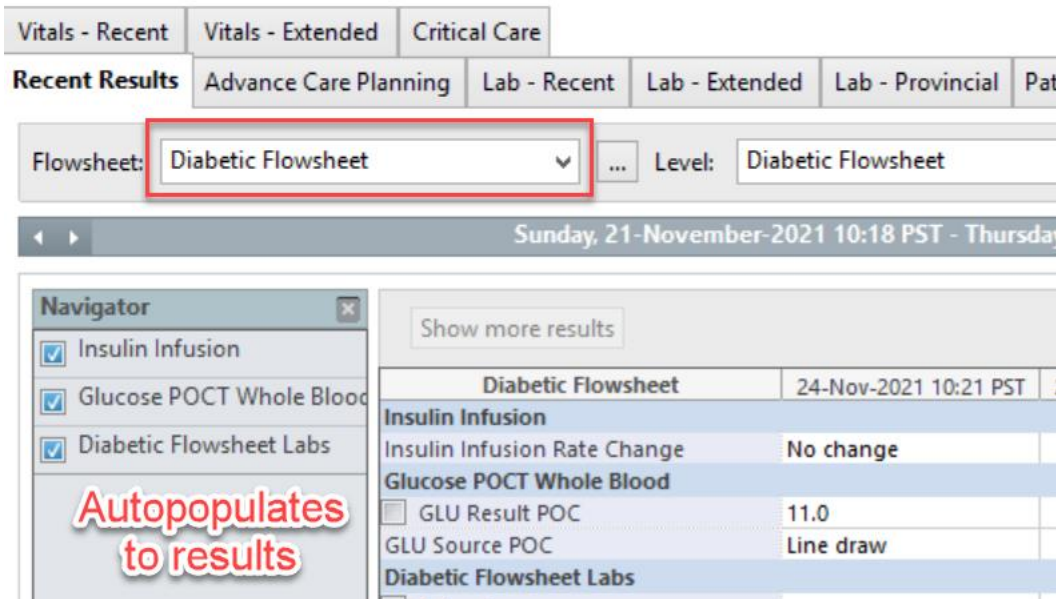


Find Item	Result	Comment
Insulin Infusion		
Insulin Infusion Protocol		
GLU Source POC		
GLU Result POC	mmol/L 9.5	
GLU Non-numeric Result POC		
Blood Glucose Next Due		
Insulin Infusion Rate Change	No change	
IDC Completed		
Insulin Infusion Comment		



Find Item	Result	Comments	Flag
Glucose POCT Whole Blood			
GLU Result POC	mmol/L 9.5		
GLU Non-numeric Result POC			
GLU Meter Serial Number POC			
GLU Source POC			
GLU Testing Reason POC			
GLU Interventions POC			

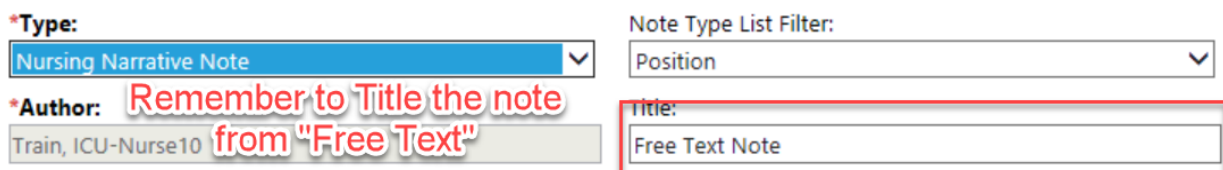
Information will flow directly and auto populate to the Results Review



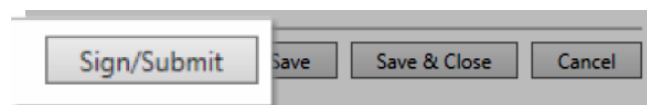
All documentation for hypoglycemia or hyperglycemia events is done using narrative notation and includes the interventions taken and the outcome.

Service Date/Time	Subject	Type	Facility	
24-Nov-2021 12:26:16 P...	Hypoglycemia Event	Nursing Narrative Note	SPH St Pauls	1
24-Nov-2021 10:14:00 P...	Allergy Rule	Allergy Rule - Text	SPH St Pauls	1

Remember to change the title of “Free Text Note” with something that will describe the event, e.g. Hypoglycemia event.



Remember to sign off the note using *Sign and Submit*. Saving will not submit the information to the chart and other staff will not be able to see.





Patient and Family Education

Provide patient and family with information about the purpose of insulin infusion and blood glucose monitoring as needed

Ask patient to report any signs of hypo or hyperglycemia (if able)

Related Documents

PHC

- [B-00-13-10081](#) – Close or Constant Care: Decision Making Process
- [B-00-13-10135](#) – Close or Constant Care: Providing
- [B-00-07-10098](#) - Independent Double Check of Medications

VCH

- [D-00-07-30354](#) - Independent Double Check (IDC) of Medications

PHC-VCH

- [BD-00-12-40009](#) – Capillary Blood Glucose Monitoring Using the Nova Blood Glucose Meter (StatStrip or Xpress)
- [BD-00-13-40096](#) – Hypoglycemia Management in Adults

PHSA

- [C-03-11-50354](#) - Independent Double Check and Double Check of Medication Administration (BCMHSU)
- [C-0506-11-60285](#) – Independent Double Check for Medication Administration C&W

References

CST-Cerner *Insulin Infusion (Module)*, February 2022

CST-[Cerner Help](#)

Definitions

Independent Double Check (IDC) is a process by which two clinicians work separately to verify the accuracy of the order and medication related care to be delivered. The two clinicians perform the verification process independent of one another, without assistance from each other and without knowledge of their steps followed. Once verifications are complete, results are compared and discrepancies, if any, must be resolved before any action is taken



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Approved By: <i>(committee or position)</i>	PHC	VCH
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