

# Perioperative Point of Care (POC) Glucose management: A Collaborative approach

Team Leaders: Emylene Untalan, MSN,RN,CCRN,CPAN, Rachel Curran, BSN,RN,CNOR

Baylor University Medical Center, Dallas, Texas

Team Members: Paolo Cardenas, BSN, RN, Charlotte Denise Pauletti, MSN, RN

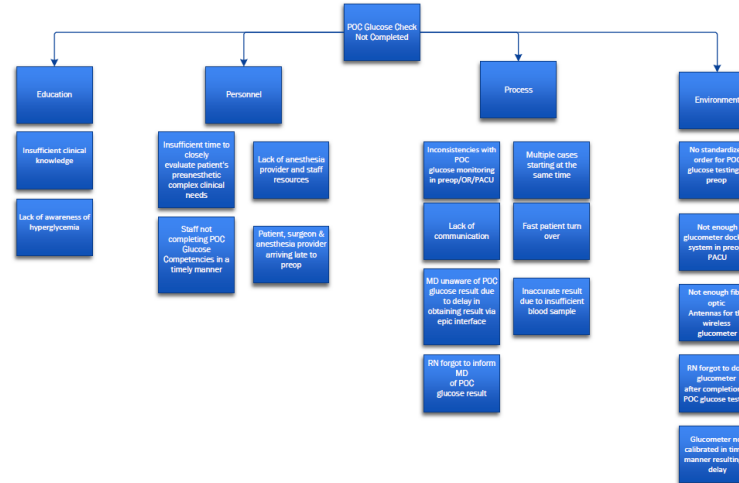
## Background

There is substantial evidence demonstrating links between perioperative hyperglycemia and adverse clinical outcomes such as surgical site infection, increased rate of myocardial infarction and stroke in patients with diabetes. The stress of surgery and anesthesia also alters the homeostasis between hepatic glucose production and utilization of glucose in peripheral tissues. Preoperative carbohydrate loading with Enhanced Recovery After Surgery (ERAS) was found to decrease the catabolic state during fasting, increase insulin sensitivity and decrease the incidence of postoperative hyperglycemia. All patients on ERAS pathways at our facility have orders for preoperative glucose testing. Routine glucose testing on patients not on ERAS pathways was not a standard prior to this project, leading to inconsistent preoperative glucose testing of ERAS patients. This project aimed to improve testing in ERAS patients by expanding point of care (POC) glucose testing of surgical patients. Prior to March 2022, the compliance average rate of POC glucose performed in patients on ERAS pathway was 55%.

## Objective

The goal of this project was to improve preoperative phase of care POC glucose testing compliance by 20% in ERAS patients from period March to July 2022

## Identified Issues



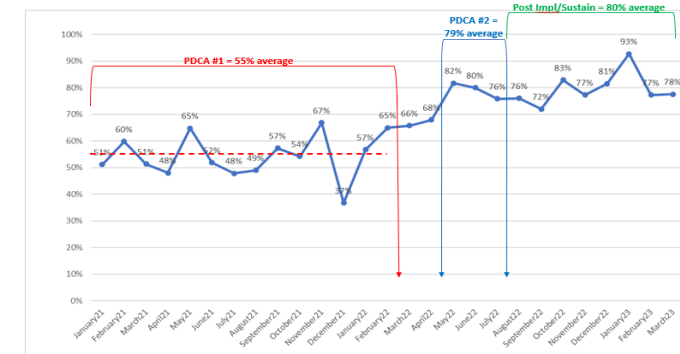
## Implemented Change

The implementation process consisted of:

- Education on placing orders for POC glucose testing that were disseminated to surgeons and surgery clinics.
- Macros in electronic health records were created providing reminders for anesthesia providers to test glucose.
- Additional docking stations and glucometers were obtained and placed in the preoperative and Recovery areas.
- POC glucose testing was extended to non-ERAS surgical patients, with weekly data shared to key stakeholders for follow up.

## Results

Total number of patients tested for POC glucose from March to July 2022: N=1261  
 80% of patients without diabetes diagnosis  
 20% of patients with diabetes diagnosis  
 18% of patients who were hyperglycemic in preop did not have diabetes diagnosis & would have not been tested prior to this project.  
 The measure of success in the compliance of POC glucose testing for ERAS increased from 55% to 79% & sustaining 80% compliance post implementation.



## Implications for Advancing the Practice of PeriAnesthesia Nursing

The incidence of hyperglycemia is common in surgical patients with and without a history of diabetes. Standardizing the process of POC glucose testing in surgical patients decreased inconsistency which enables early detection and implementation of intervention.

## References

- Duggan, E., Carlson, K., Umpierrez, G (2017). Perioperative Hyperglycemia Management. An Update. *Anesthesiology* 126 (3), 547-560  
 Hancer, A., Yilmaz, M. (2023). The Effects of a Checklist for Perioperative Hyperglycemia Management on Surgical Site Infections: A Randomized Control Trial. *Journal of PeriAnesthesia Nursing* 38, 108-117. DOI: <https://doi.org/10.1016/j.jopan.2022.05.088>

