

## **Glucostabilizer Protocol**

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## Glucostabilizer Protocol

Indianapolis University Health (IU Health) uses a glucostabilizer programmed on tablets stationed in each patient's room. The program is based on a sliding scale that determines how much insulin the patient should receive. The policy outlining glucostabilizer use requires nurses to input the patient's blood sugar into the glucostabilizer and the carbohydrates consumed. IU Health's protocol requires that all patient data be manually inserted into the program, such as name, date of birth, medical record number, room number, and other patient information (Indiana University Health, 2012). IU Health must change its policy since experience has shown that the glucostabilizer does not decrease hyperglycemia or hypoglycemia from occurring. Furthermore, the protocol takes a significant amount of time to execute, which can cause adverse effects on a patient's health.

### Stakeholders

The nurses and patients are affected the most by the Glucostabilizer protocol since the biggest issue with it is time. During orientation, the nursing staff is told the time needed to input a patient's data into the tablet can take up to ten minutes (S. Harvey, personal communication, March 27, 2022). Since the sliding scale is set within the program, it will not provide the amount of insulin needed for a patient until their blood sugar level is entered.

A nurse can spend a lot of time navigating the number of steps necessary to input the information required before retrieving the data needed to provide the correct amount of insulin. The time spent on setting up the Glucostabilizer or troubleshooting it can negatively impact the nurse as it will place them behind schedule on other duties they must accomplish throughout the day. A nurse who has fallen behind with work is at risk of creating medication errors, can cause

patient falls, can cause improper use of infection techniques, and can miss alerts or alarms indicating their patient's safety is in jeopardy (Oliveira et al., 2017).

Time is also an issue when the patient is experiencing hypoglycemia. Suppose the doctor has placed an order for D50 because of a hypoglycemic event. In that case, the Glucostabilizer requires staff to enter the blood sugar level before it shows the amount of D50 to be administered, causing a delay in care during a critical situation that could harm the patient. Additionally, if the patient's blood sugar is 50 and the glucostabilizer suggests that a nurse should deliver 5 mL of D50, experience has indicated that the dose is inadequate to bring the patient's blood sugar above a safe therapeutic range.

Decision makers such as nurse leaders, advanced practice registered nurses (APRN), physicians, and other leadership team members are impacted by the adverse events associated with the Glucostabilizer. These negative events affect the quality, safety, scores, and core values of IU Health. These decision-makers must revisit the protocol to develop a better process and reduce the risks associated with the time it takes to apply appropriate glucose interventions.

### Policy Options

The Glucostabilizer is connected through a secure network that can be used wherever the patient is within the hospital. The Glucostabilizer has an alert system to remind nurses or nursing assistants to check the patient's blood sugar, increasing adherence to a set protocol (Alamri & Seley, 2018). Although the stabilizer has an alert system to improve compliance, the alarm is often not addressed for various reasons, keeping the nurse from being compliant with blood sugar checks. At IU Health, the Glucostabilizer is not used anywhere other than in the patient's assigned room. Therefore, patients have experienced hyperglycemia or hypoglycemia in the operating room, at interventional radiology, or while receiving hemodialysis.

A timely blood glucose level and an appropriate amount of insulin are critical to achieving a positive outcome in preventing a hyperglycemic event (Groysman et al., 2020). Studies have shown that glucose management technologies have not significantly prevented hyperglycemic or hypoglycemic events compared to a sliding scale printed on paper (Salinas & Mendez, 2019). It has been shown that the Gluco-stabilizer has only decreased hypoglycemic events from occurring by 0.01% (Juneja et al., 2008). Using the glucostabilizer versus a printed sliding scale does not increase the chances of preventing a hyperglycemic event due to human behavior. Even though a glucostabilizer has alarms for a blood sugar check, it does not mean the patients will be checked promptly, especially if other priorities are more critical.

An alternative to the Glucostabilizer is a printed sliding scale for insulin dosage. A sliding scale insulin therapy is based on a range of blood sugar levels, and it considers the number of carbohydrates consumed by an individual. The insulin dosages for each field are fixed and pre-determined by a glucose algorithm. For example, if a patient's blood sugar is between 140-150, they will receive one unit of insulin; however, if their sugar is between 151-160, they may receive two units of insulin (Flaherty, 2022).

This therapy method is the easiest and fastest way for a nurse to administer insulin. The sliding scale saves a nurse time since they retrieve a patient's blood sugar, look at the sliding scale, and give the amount of insulin needed that falls within the range. The negative of using a sliding scale is factoring in a patient's weight. A patient who weighs 130 pounds and a different one who weighs 180lbs get the same dose, then the heavier one may not receive the adequate amount of insulin to place them in a therapeutic range. Furthermore, the sliding scale doesn't consider how sensitive a patient is to the effects of insulin (Watson, 2020). For the nurse, one negative of using a sliding scale is compliance, ensuring the patient is checked as scheduled and

administering the proper dosage on time. No alarms indicate that a patient's blood sugar needs to be matched with a sliding scale, so the nurse must be mindful of time.

Another alternative to the Glucostabilizer is basal insulin, which helps keep insulin levels stable. Basal insulin involves long-acting insulin, whereas the sliding scale uses short-acting insulin. The negative of using this treatment method still includes short-acting dosages to normalize blood sugar after eating (Watson, 2020). Nurses would still save time using this method over the glucostabilizer.

#### Advanced Practice Registered Nurse Role

One of the duties of an APRN is to collaborate with other interprofessional healthcare members and influence change (DeNisco, 2021). One way the APRN can be a change agent is to work with physicians, nurses, residents, and physician associates in creating a study that shows how a Glucostabilizer takes too much time to set up, manage, and use compared to the alternatives. To influence change, an APRN must show that the excess time to manage the Glucostabilizer can cause harm to a patient's safety since it causes nurses to fall behind schedule.

To create organizational change, it is vital that an APRN works with decision-makers and follows through with reviewing the Glucostabilizer protocol, investigating its shortcomings, providing solutions, and adjusting (DeNisco, 2021). The APRN needs to be a system innovator by effectively communicating with the interprofessional team and continuously looking to improve the performance of the glucostabilizer; therefore, improving the function of a nurse in providing quality, safe, and appropriate care for their patients (Institute of Medicine, 2014).

#### Factors of Influence

Diabetes is a chronic condition that affects millions of people and contributes to the increase in healthcare costs (Groysman et al., 2020). Factors that influence regulatory directives include

identifying the inefficiencies and messy delivery system of the Glucostabilizer (Institute of Medicine, 2009). Resources needed to change the Glucostabilizer protocol will involve evidence-based practices showing ways the policy can be improved, the use of alternatives, and its impact on patient outcomes.

### Conclusion

The Glucostabilizer is supposed to help reduce hyperglycemia or hypoglycemic events; however, personal evidence and research show that this program has not minimized these adverse outcomes. Other alternatives have shown to be more efficient, with nurses managing their time more effectively in providing insulin coverage for diabetic patients. APRNs must collaborate with other healthcare providers in making changes to the current protocol in managing a patient's diabetes while providing the right tools for nurses to accomplish their tasks promptly when caring for these clients.

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