

Reduction of Hypoglycemia Episodes

With Initiation of the Blood Sugar Algorithm

NHA Quest For Excellence Award

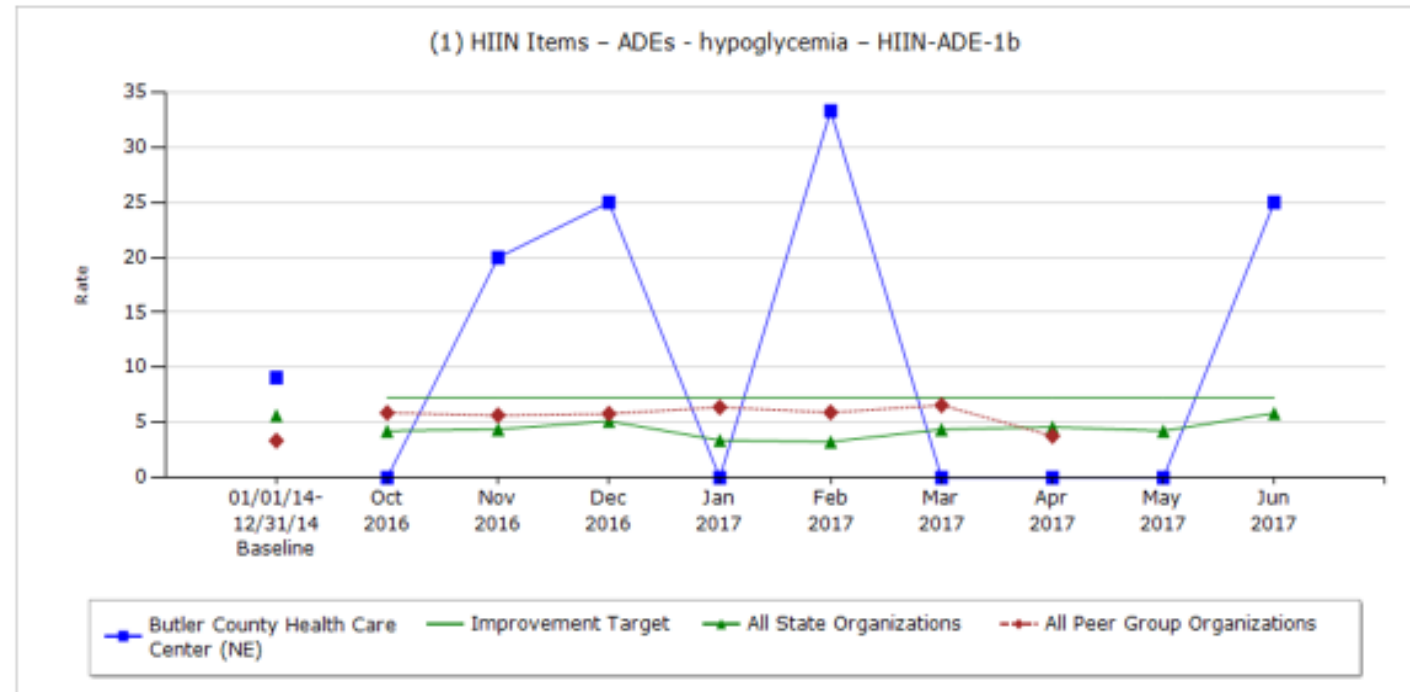
Butler County Health Care Center

July 25, 2019

The Need

Hypoglycemia Reduction

Hypoglycemia ADE's (Blood Sugars < 50)



- There were 5 hypoglycemia adverse drug events in the 9 months prior to the start of the project.
- 38% of the diabetic inpatients had at least one blood sugar less than 70 in the 6 months prior to the start of the project.
- The estimated cost of ADE's is \$5,000 per event.
- The estimated increased length of stay for every hypoglycemia event < 70 is 2.5 days.
- Hypoglycemia in the hospital is associated with increased odds of inpatient death and death within one year of discharge.

Up-to-Date.com, July 2017

JAMA

Agency for Healthcare Research and Quality

The Process

Hypoglycemia Reduction

- ▶ Identified the Need.
- ▶ Exposed the need, created a sense of urgency, and got buy-in from the following groups: Medical staff, Quality Improvement Committee (QIC), Board of Directors, and nursing staff.
- ▶ Made blood sugar management a focus of the QIC and developed a blood sugar sub-committee to do the leg-work.
- ▶ The blood sugar subcommittee consisted of: Dietician, diabetes educator, pharmacy, director of nurses, quality and safety nurse, informatics nurse, and other staff as needed.
- ▶ Subcommittee:
 - ▶ Performed gap analysis
 - ▶ Made a worklist based on identified needs from the gap analysis
 - ▶ Performed much of the work of developing new processes before taking it to QIC and the medical staff for approval.

The Process (Continued)

Hypoglycemia Reduction

- ▶ Subcommittee, QIC, and med staff worked together to develop new processes, policies, standard work, etc.
 - ▶ Having open communication between staff and providers while working in cooperation to meet the needs of the patients and maintaining high quality care was vital to the process.
 - ▶ Listening to feedback and making adjustments (PDSA) to new processes played a major role in fine-tuning the process and maintaining buy-in from the staff.
- ▶ Prioritized the needs on the worklist and worked on one item at a time.
- ▶ Made it easy. The algorithm that was developed allowed for a quick reference on what staff need to do for their patients.

Major Areas of Focus

Hypoglycemia Reduction

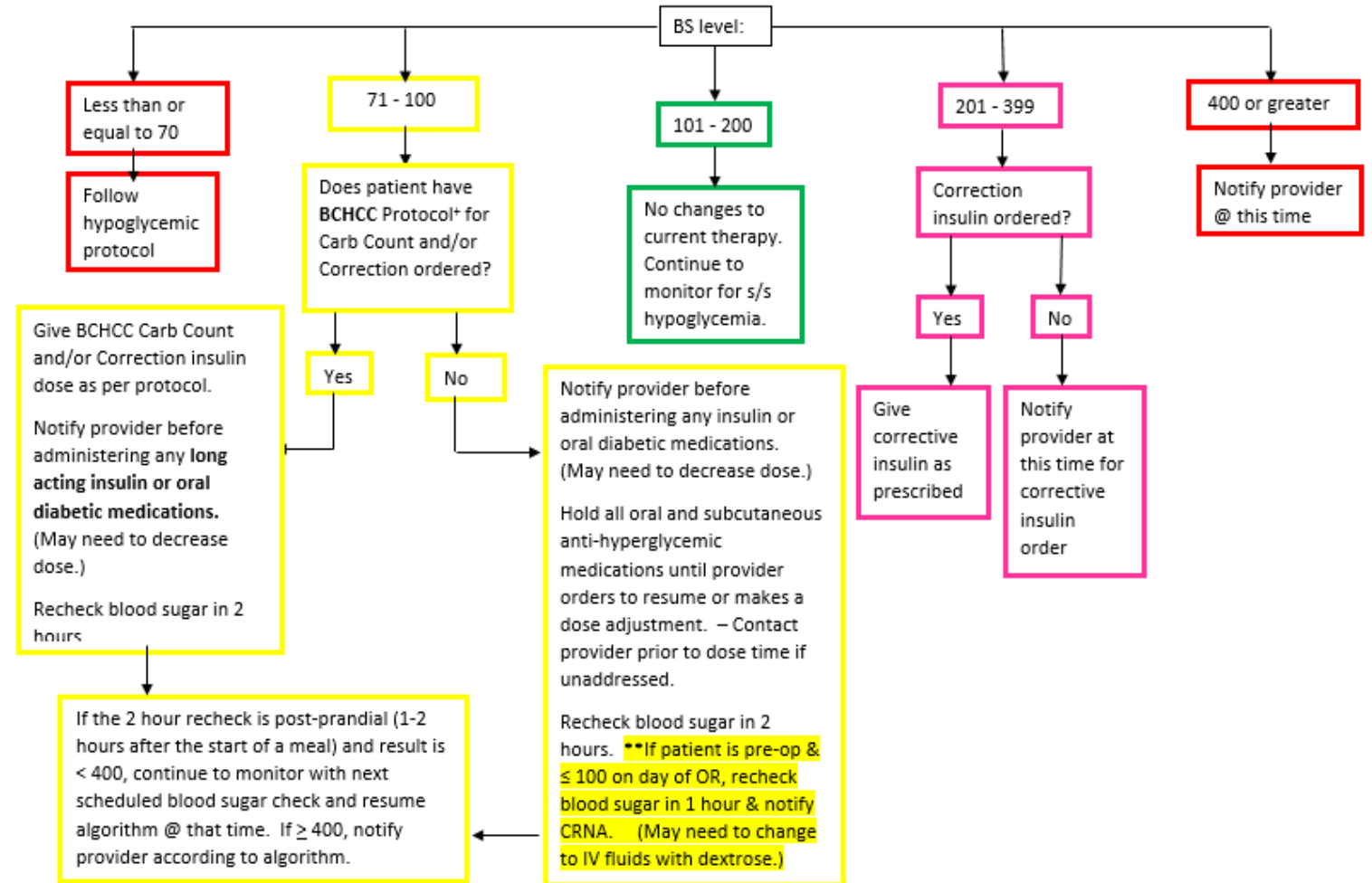
1. Define a facility-wide blood sugar goal.
2. Define when to notify a provider that a blood sugar is out of acceptable range.
3. Standardize blood sugar checks for patients that are eating and those that are NPO.
4. Standardize blood sugar rechecks when out of range.
5. Reduce insulin dose-stacking by promoting use of insulin protocols.
6. Increase use of insulin drips when appropriate.
7. Update hypoglycemia protocol for EBP and ease of use.
8. Update guidelines for surgical patients.

Blood Sugar Algorithm

Hypoglycemia Reduction

Butler County Health Care Center
Blood Sugar Algorithm for Patients with Diabetes

- This algorithm outlines many of the new processes developed during this project.
- The algorithm was instrumental in our success as it provides a quick reference and is easy to follow.



*If on insulin drip, follow drip protocol.

**May notify provider at any time the patient's condition warrants in addition to as directed above.

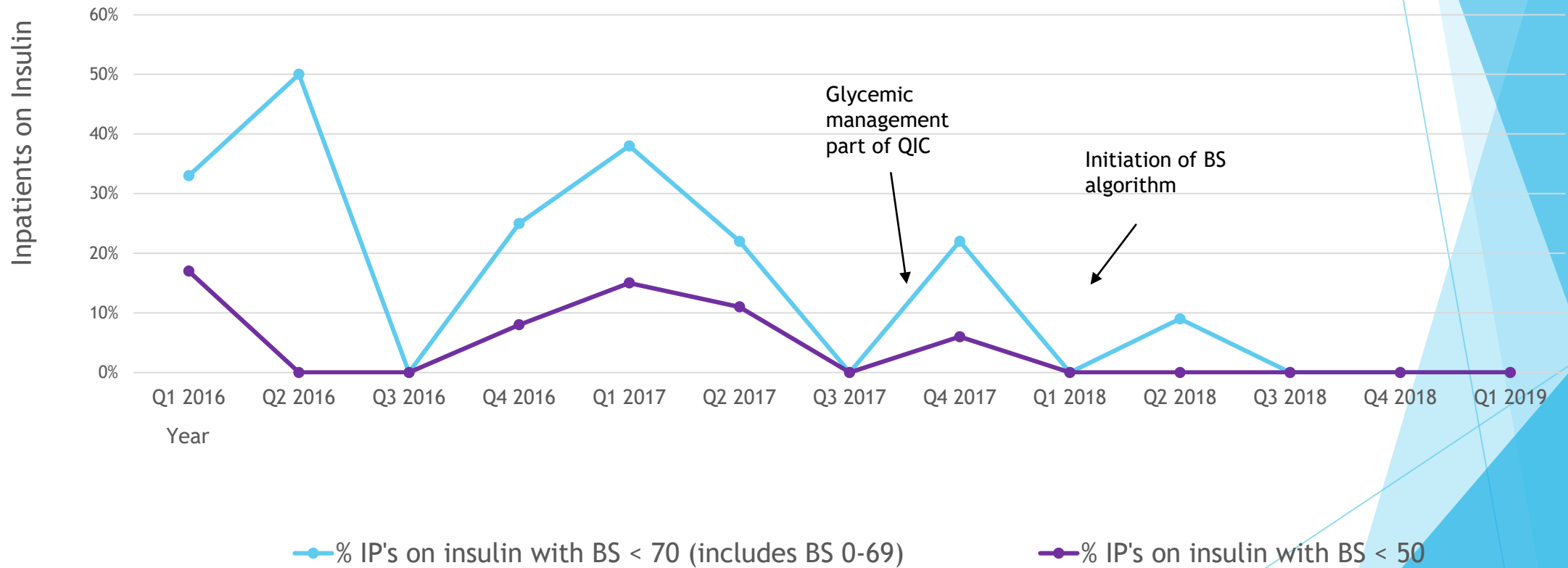
+Long acting Insulin examples – Lantus, Levemic, Toujeo, Tresiba, or Basaglar.

+BCHCC Protocols have adjustments for BG < 100 build into the protocol. Adjust dose accordingly and continue to give as ordered.

Results

Hypoglycemia Reduction

Inpatients on Insulin with Hypoglycemic Episodes



Results (continued)

Hypoglycemia Reduction

Inpatients (Jan 1, 2018 - March 31, 2019):

- ▶ No hypoglycemic ADE's (BS < 50)
- ▶ Only 1 episode of hypoglycemia (BS < 70)
- ▶ The decreased episodes of blood sugars less than 70, specifically less than 50, had a huge impact on patients:
 - ▶ Decreased risk of inpatient death and death within 1 year of discharge
 - ▶ Estimated decrease length of stay of 25 total days
 - ▶ Estimated cost savings of \$18,750