

# Utilizing a Dietary Information System to Improve Insulin Administration Within 60 Minutes of Obtaining a Capillary Blood Glucose Level



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## BACKGROUND

Through Patient Safety Reports a problem was identified that mealtime and sliding scale insulin were being administered without a timely finger stick being obtained. Historically meal trays were delivered at set times for patients with diabetes.

Current practice allows patient to utilize room service and order meals at their convenience. The practice of the timing of finger sticks did not change with the updated meal ordering system which led to increased hypoglycemic events and inconsistency with insulin administration timing. Hypoglycemia is defined as a Capillary Blood Glucose (CBG) level less than 70 mg/dL.

According to the American Diabetes Association (ADA) Standards of Care, the timing of meal delivery and mealtime insulin administration should be coordinated, based on the time the patient eats, the amount of carbohydrates the patient consumes, and the type of insulin used for prandial dosing.

## SMART OBJECTIVE

10% decrease in hypoglycemic events by decreasing the amount of time between a CBG result and insulin administration in relation to the delivery of the meal tray with goal of less than 60 minutes on all Adult Inpatient Units by April 2022

**Associated Flowsheet Rows**

Time taken: 2/9/2022 1100 Responsible Restore

If no new assessment is needed, check the box to link flowsheet rows to the previous assessment.

**OTHER**

Accu-Check Trigger  Accu-Check Results

Accu-Check Result

Result Date/Time

## IMPROVEMENT ACTION PLAN

A Pilot Study was implemented in collaboration with 8W Medical Surgical Unit Comprehensive Unit Based Safety Program (CUSP) and Nursing Administration CUSP Teams.

Patient population included any patient who was ordered finger sticks, sliding scale and/or mealtime insulin.

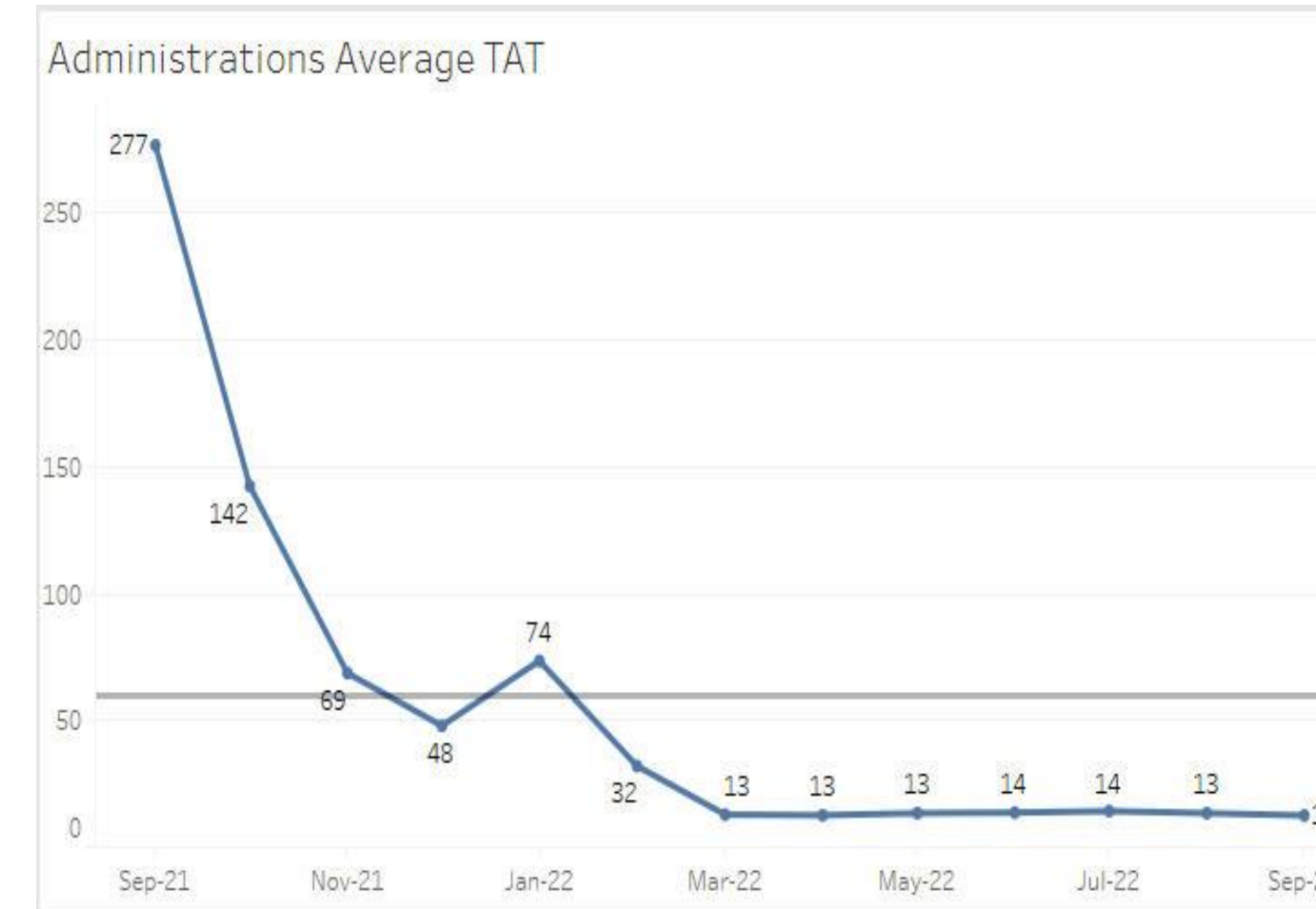
A barrier that was identified was nursing staff being unaware of meal tray delivery times. Through collaboration between CUSP Teams, Information Technology (IT), and Nutrition Services the Vision System Technologies (VST) was identified as an already existing tool to facilitate tracking of meal trays. In addition, VST allows the user to see the status of the trays for patients with active mealtime and sliding scale insulin orders. VST was installed on all nursing computers

Another barrier was the availability of the CBG to the bedside Registered Nurse (RN). An additional strategy that was adopted was displaying the most recent CBG result within the Medication Administration Record (MAR). The most recent CBG was linked to the mealtime or sliding scale insulin administration and will alert the nurse if the CBG is outside of a 60-minute window. This is a prompt to obtain a timelier CBG.

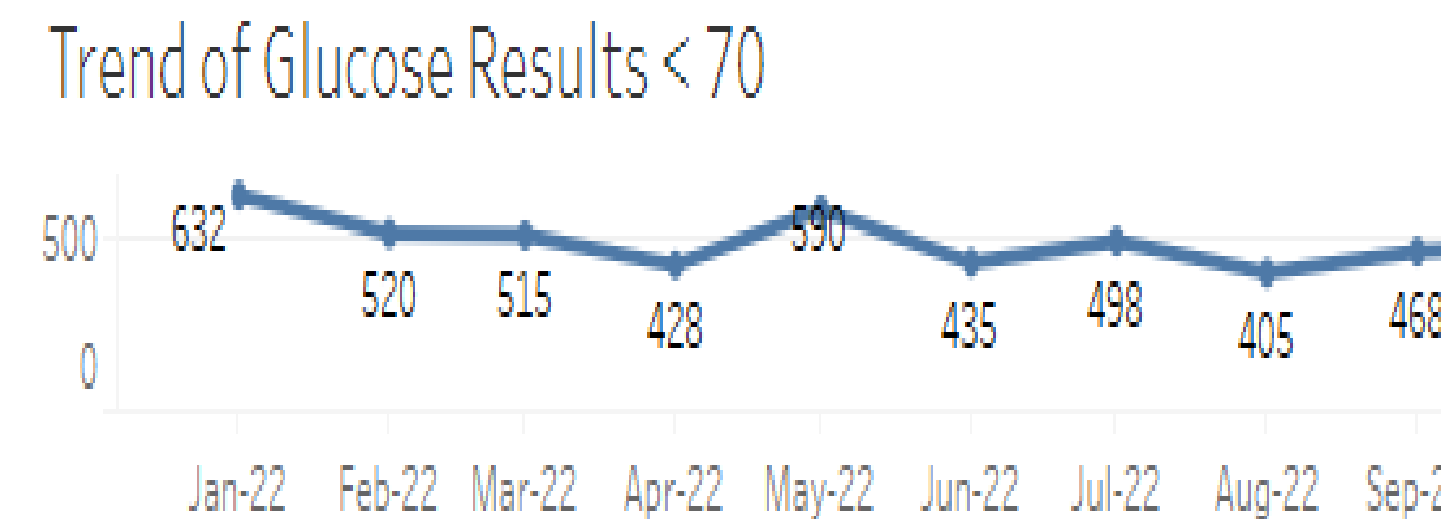
The goal for the insulin administration window was 60 minutes or less after obtaining CBG which is referred to as the Turnaround Time (TAT).

## RESULTS

The average TAT for all Adult Inpatient Units decreased from 277 minutes to 13 minutes



The rate of hypoglycemia has decreased by a minimum of 20%



## SCALE UP PLAN

Currently this practice is being used on all Adult Inpatient Units within our hospital. Future plans include working with other hospitals within the system to adopt this entire process.

## SUSTAINABILITY PLAN

Monthly compliance reports are being sent out to Nursing Leadership that address the TAT, hypoglycemic events, and compliance with obtaining a CBG within 60 minutes prior to insulin administration.

The data is being discussed at all monthly CUSP meetings.

Future plans include working with IT to incorporate the delivery time of the meal tray in the reporting system.

## LESSONS LEARNED

The timing of CBG, mealtime and sliding scale insulin administration in correlation with meal tray deliver is crucial to prevent hypoglycemia.

In the future if dietary delivery systems change, the process for obtaining CBG needs to be addressed as well.