Effects of Coordinating Glucose Monitoring with Subcutaneous Insulin Dosing and Meal Tray Timing (Insulin Bundle) on Glycemic Control and Insulin Errors

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Purpose/Background:

Insulin is classified as a high-alert medication by the Institute for Safe Medication Practices (ISMP) due to its increased risk of causing significant patient harm if administered or used in error. Correctly administering subcutaneous insulin involves the coordination of the point-of-care (POC) glucose, insulin administration, and meal tray. The 2017 ISMP Guidelines for Optimizing Safe Subcutaneous Insulin Use in Adults encourage this coordination of the insulin process in order to reduce the number of errors that occur with prescribing, distribution, and administration of subcutaneous insulin. In response to these updated guidelines and a local increase in insulin errors, Sentara RMH Medical Center implemented a pilot study in one unit of the hospital with high subcutaneous insulin utilization. The results of the study showed significant improvement in the timing of the blood glucose testing and insulin administration, as well as a positive response from the nurses in the unit.

Objective:

The objective of this study is to evaluate the effects of implementing a hospital-wide meal-time insulin administration process (aka insulin bundle) on glycemic control and the rate of insulin errors.

Methods:

This study evaluates the effects of the insulin bundle implementation at Sentara RMH Medical Center. A control arm consisting of patients admitted between January 1, 2018 and March 31, 2018 (prior to implementation of the insulin bundle) who received subcutaneous prandial insulin are compared to an intervention arm consisting of patients admitted between January 1, 2019 and March 31, 2019 (post-implementation of the insulin bundle) who received subcutaneous prandial insulin. The primary outcome is the time in minutes from point-of-care glucose to insulin administration. Secondary outcomes include nursing satisfaction, global hypoglycemic rates, and reported subcutaneous insulin errors. Global hyperglycemic rates will be reviewed as an exploratory outcome.

Results:

To be determined

Conclusion:

To be determined