Improved Hospital Glycemic Control with eGMS and High-Reliability Strategies

Courtney Harrison, MD; Susan DeAbate, RN, MSN/ED, CDE; Tim Pike, MD; Peggy Braun, RN, BSN, MHA, CENP; Angel Harper-Clarke, BSN, RN, CMSRN; Jordan Messler, MD, SFHM, FACP

Sentara Virginia Beach
Virginia Beach, VA, USA
courtharrison@cox.net

Objective:
Improve utilization of standard order sets for subcutaneous insulin management of hyperglycemia and diabetes, with the elimination of sliding scale and increased use of basal/bolus management. In addition, monitor outcomes such as hyperglycemia and hypoglycemia in subcutaneous insulin patients.

Method:
Sentara Virginia Beach convened a define, design implement improvement team, including executive leadership, CDEs, pharmacy, provider and nursing champions. The team improved integration of an eGlycemic Management System(eGMS), Glucommander, by standardizing workflow and education, revising order sets, and introducing high reliable strategies. Several key strategies included simplification of order sets, a clinician driven process to allow nurses to automatically start eGMS for hyperglycemia, daily monitoring of all insulin-requiring patients, and establishing super users within each unit.

Result:
The utilization of eGMS increased 4.5 times, with subsequent increase in basal/bolus insulin therapy for medical-surgical patients, from an average of 46 per month on eGMS in the 4 months prior to order set changes, increasing to 206 per month in the 4 month period through October 2019. As utilization increased, hypoglycemia and hyperglycemia both reduced. In a similar 4-month period (June to Sept 2018 compared to July to Oct 2019), patients on the eGMS had total BG % for < 40 mg/dl drop from 0.14% to 0.07%, < 70 mg/dl from 2.31% to 1.77%, and severe hyperglycemia >300 mg/dl from 7.33% to 4.78%.

Conclusion:
Standardizing care, with evidence-based practice, technology and high reliable strategies resulted in increased use of basal-bolus insulin management, with improvements in both hyperglycemia and hypoglycemia.