Recognizing that elevated glucose levels lead to higher incidence of post-operative infections, delayed wound healing, and increased length of stay, a multidisciplinary team was formed to design protocols to improve our practice of caring for our perioperative patients. 

Our goal of this initiative was to reduce the rate of post-operative infections in high risk patient groups via increased staff awareness and education about hyperglycemia and tightened blood glucose control in our perioperative patients. 

The team developed an insulin administration protocol, glucose control checklists and insulin order sheets. We emphasized the importance for diligent blood sugar screening, weight and BMI calculations. Blood sugar levels were measured throughout the patient’s perioperative stay. Nursing staff recorded these key measures: pre-operative, intra-operative, and postoperative blood glucose levels. Orders, written by anesthesia, utilized weight based glargine SQ dosing, as well as intravenous regular insulin used for hyperglycemic correction.

Of 6,425 patients enrolled in the first six months, 3,742 (58%) were at risk for hyperglycemia. Post operative hyperglycemia (> 140 mg/dl) occurred in 69% of Bariatric patients, in 54% of colorectal, in 50% of GYN patients, and in 21% of Total Joint patients. Among those at risk, 1,252 were treated with insulin, 610 were treated with long acting insulin. Hypoglycemia (≤ 60) was observed in 45 persons, most often on arrival, with 19 related to the insulin protocol (1.6% of those treated). In a nested case control study of GYN patients, hyperglycemia was found more often in infected cases, with the infected group averaging 175 (+/- 48) compared to 143 (+/- 35) in the control group.

Collaboration between anesthesia and the diabetic resource nurses has increased delivery of individualized hyperglycemic control for our perioperative patients.