**Cardiac Glucose Control**

**Interdisciplinary Team Work Out**

**New ICU Protocols**

- **Cheaper pathways**
- **Use of Novolog vs. Regular Humulin**
- **Classification of bolus doses**
- **Elimination of insulin and falling biases**

**New Telemetry Protocols**

- **New Telemetry Scale Designed Specifically for Cardiac Surgery Patient’s Needs**

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**Measure Critical to Quality**

\[
Y = \frac{\text{# of patients with glucose } \leq 200 \text{ at 6am POD 1 and POD 2}}{\text{Total # of eligible patients}}
\]

**Baseline Measure – What is the Process Capability?**

\[
Y = \frac{47 \text{ patients with glucose } \leq 200 \text{ at 6am POD 1 & POD 2}}{55 \text{ eligible patients}} = 0.85\%
\]

**Define**

- Lack of consistent Glucose Control in postoperative cardiac surgery patients
- Root causes were varied
- Evidence-based practice to reduce or eliminate surgical infections
- Publicly reported measure
- Contributes to Value-Based Purchasing Score

**High Level Process Map**

**START: Patient Arrives to ICU From Surgery**

- Initial Accuchek Done
- Patient Placed on Appropriate Protocol
- Accucheks and Insulin Administration as indicated
- Patient is Exubated and Starts on Liquids
- If diabetic, patient is given Lantus at 6am POD 1
- If applicable, drip is discontinued 2 hours after Lantus
- Patient transferred to Telemetry
- Patient is placed on Hospitalist Sliding Scale

**END: Glucose Results 6am POD 2**

**Analyze**

- Lantus was not given at recommended time or dose
- Recommended dose was not AACE recommendations
- The ICU protocol was confusing & open to interpretation
- Hospitalist scale was not effective on Telemetry
- Documentation of bolus doses was incomplete; the workflow was not user friendly
- Variation in insulin ordering practices of consulting MDs
- Knowledge deficits - glucose control importance in this population
- Lead to hesitation to give Lantus in recommended dose

**Results**

- Implemented new protocols and processes in February
- Continue to work closely with interdisciplinary team for continued improvement
- Improved Sigma and DPMI

**Critical to Quality**

- If of patients with glucose \( \leq 200 \text{ at 6am POD 1 and POD 2} \)
- Total # of eligible patients

**Analyze**

- **Chi Square**

**Root Causes**

- **Significant? p value**
- **Statistically**
- **Improves**
- **Chi Square**
- **Process**

**Defects per million opportunities (DPMO)**

\[
\text{DPMO} = 0.1454545 \times 1,000,000,000 = 145,454
\]

**Defects per total opportunities (DPO)**

\[
\text{DPO} = \frac{8}{55} = 0.1454545
\]