Measure Abbreviation: GLU 01

Data Collection Method: This measure is calculated based on data extracted from the electronic medical record combined with administrative data sources such as professional fee and discharge diagnoses data. This measure is explicitly not based on provider self-attestation.

Measure Description: Percentage of glucose labs with perioperative glucose > 200 mg/dL with administration of insulin or glucose recheck within 90 minutes of original glucose measurement.

NQS Domain: Effective Clinical Care

Measure Type: Process

Measure Summary:
The Treatment of Perioperative Hyperglycemia measure will tell you the percentage of cases that you administered insulin or checked a glucose level within 90 minutes of when the documented glucose level was greater than 200 mg/dL. The purpose of this measure is to prevent prolonged periods of hyperglycemia. Acute hyperglycemia in the perioperative period is known to increase the incidence of wound infections, as well as overall mortality. For this quality measure, we selected a relatively high threshold glucose level (greater than 200 mg/dL) to alleviate concerns that patients undergoing general anesthetics are at risk of overtreatment and hypoglycemia.

There are two measurement components for GLU 01. ASPIRE can only report on GLU01b for sites contributing PACU data.

GLU 01a: Percentage of intraoperative glucose labs with perioperative glucose >200 with administration of insulin or glucose recheck within 90 minutes of original glucose measurement for the time period between Anesthesia Start and Anesthesia End.

GLU01b: Percentage of glucose labs with perioperative glucose >200 with administration of insulin or glucose recheck within 90 minutes of original glucose measurement for the time period between 2 hours before Anesthesia Start to 2 hours after Anesthesia End.

Inclusions:
- All patients with glucose level greater than 200 mg/dL between
    - GLU 01a: Anesthesia Start and Anesthesia End
    - GLU 01b: 2 hours before Anesthesia Start to 2 hours after Anesthesia End
- Patients with **and** without diagnosis of diabetes

Exclusions:
- ASA 5 and 6 cases
- Patients < 12 years of age.
- Glucose measurements > 200 mg/dL within 90 minutes before Anesthesia End for GLU 01a
- Outpatient cases with Anesthesia Start to Anesthesia end time less than 4 hours long
- Obstetric Non-Operative Procedures- CPT 01958, 01960, 01967

- Obstetric Non-Operative Procedure Rooms (Rooms tagged as OB-GYN – Labor and Delivery)
- Obstetric Non-Operative Procedures with procedure text: "Labor Epidural"

Success:
- Administration of insulin within 90 minutes (either IV or sub Q routes) or
- Recheck of glucose level within 90 minutes

Threshold: 90% success.

Responsible Provider: The provider signed in at the first glucose recheck or first administration of insulin. If neither occurred, then the responsible provider is the one signed in 90 minutes after the high glucose measurement.

Risk Adjustment (for outcome measures):
Not applicable.

References:
Frisch A, Chandra P, Smiley D, et al. Prevalence and Clinical Outcome of Hyperglycemia in the Perioperative Period in Noncardiac Surgery. Diabetes Care 2010;33(8):1783-1788. doi:10.2337/dc10-0304.

Ramos M , Khalpey Z , Lipsitz S , Steinberg J , Panizales MT , Zinner M , Rogers SO2008 Relationship of perioperative hyperglycemia and postoperative infections in patients who undergo general and vascular surgery. Ann Surg 248:585–591

Gandhi GY1, Nuttall GA, Abel MD, Mullany CJ, Schaff HV, Williams BA, Schrader LM, Rizza RA, McMahon MM. Intraoperative hyperglycemia and perioperative outcomes in cardiac surgery patients. Mayo Clin Proc. 2005 Jul; 80(7):862-6.