Impact of Continuous Glucose Monitoring on Compliance and Clearance Time in Orthopaedic Medical Optimization Program

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BACKGROUND

- Diabetes is a known risk factor for postoperative infections in Total Joint Arthroplasty (TJA) (Mcmahon et al., 2022)
- Effective Preoperative blood glucose optimization is crucial in mitigating this risk.
- Traditional methods often fall short , leading to surgical delays.
- Continuous Glucose Monitors provides real time tracking of blood glucose levels, potentially enhancing glycemic control and expediting surgical readiness.
- Research indicates that CGM usage can improve patient adherence to medication and dietary recommendations and improves patient outcomes (Montero, 2021).

SMART OBJECTIVE:

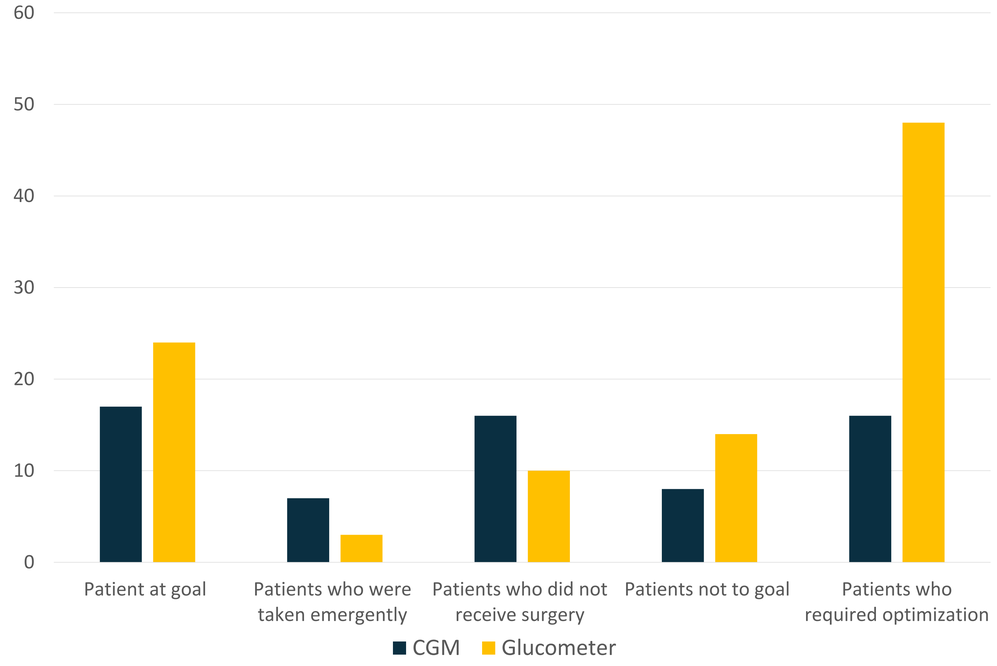
- Patients using CGM devices will increase compliance and decrease optimization time, within three months of initial optimization appointment.

IMPROVEMENT ACTION PLAN WITH ACTIONS TAKEN

- Nursing Education: Train staff on CGM indications, applications, and patient eligibility criteria.
- Patient Identification and Implementation: Screen surgical candidates for diabetes. Provide CGM education during clinical visits. Collaborate with primary care providers to facilitate CGM prescription.
- Follow up Monitoring: Conduct regular follow-up calls to review CGM data. Offer standardized education for both CGM and traditional blood glucose monitoring patients (Yang, Jiang, Li, 2019).

RESULTS:

- Patients who had HbA1C values above 7% were included
- Total patients screened 56 CGM and 99 Glucometer patients
- Exclusions- patients who were taken emergently or who were at goal prior to initial optimization surgery.
- Total of 16 CGM patients and 48 glucometer patients were included .
- Patients who used CGM devices were able to expedite time to surgery when compared to the traditional fingerstick group.
  - Average of 22 days difference between the two groups.
  - CGM Users- 80 days
  - Fingerstick- 102 days
- Workflow helped continuity of care between OMOP clinic and PCP



SCALE UP PLAN:

- Integrate CGM education into routine staff training across all preoperative clinics
- Assess CGM Eligibility to proactively manage uncontrolled diabetes.
- Deliver education through in-person or virtual sessions.

SUSTAINABILITY PLAN:

- Conduct annual staff education to reinforce CGM guidelines.
- Implement competency assessments for patients to ensure proper device usage.

LESSONS LEARNED:

- While effective, CGM devices may not be financially accessible to all patients.
- Continuous monitoring enhances patient compliance
- Outcomes are contingent on patient adherence, necessitating additional education and support.
- Further research is needed to evaluate CGM's roles in perioperative diabetes management.

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