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Standardizing Glycemic Management in High-Risk patients with Diabetes having outpatient procedures

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Abstract

Introduction:

Patients with Type 1 diabetes, history of total pancreatectomy, or utilizing of an insulin pump are considered high-risk patients as they can experience poor glycemic control during outpatient procedures. At MD Anderson Cancer Center (MDACC), we had several safety events related to hyperglycemia and development of diabetic ketoacidosis in the postoperative setting for high risk patients undergoing longer outpatient procedures due to lack of standardized monitoring and treatment in the perioperative setting and inadequate communication between teams. After developing a standardized workflow in procedural areas with longer procedures (Interventional Radiology and Operating Room), our baseline analysis showed 62% non-compliance rate to Standard Workflow.

Hypothesis:

Implementation of a standard workflow with standardized EHR documentation, improved communication and a standardized audit

process can help decrease non-compliance rate.

Methods:

A fishbone diagram (Figure 1) helped identify the various issues involved related to identification of the high risk patients placement of appropriate monitoring and treatment orders and communication within teams. A process flow map (Figure 2) helped capture several variations with outpatient care and facilitated identification of opportunities for improvement.   A Prioritization Matrix Tool was used to prioritize improvement efforts that would have greatest impact. A variety of changes were implemented to aid with improving identification of high-risk patients including specific questions to patient medical history and standardization of survey questions in the pre-procedural visit. Standardized preoperative and postoperative monitoring and treatment order sets were developed and several methods of communication using email, calendar reminders and EPIC smart phrases were utilized to improve communication between treating teams. A standard audit process using a Qualtrics Survey tool was developed to track non-compliance rate.

Results: Results(Graph 1) were graphically displayed in a p-Control Chart used to monitor variation and track non-compliance rate. The results showed the process becoming more controlled and by the end of February 2021, and the mean non-compliance dropped from 62% to 21%, surpassing the aim of 31%. To measure sustainability of the changes made, a 30, 60, 90-day assessment were monitored with the following results: (May) Mean 12%: 60 Day (June) Mean remained at 12%; and (July) Mean 25%. During this time period, we continued to track any submitted safety events related to perioperative procedures in high risk patients and the number of events decreased by >80% with no events that were high harm.

Conclusions:

Development of a standardized workflow helped reduce patient safety errors related to high-risk patients undergoing perioperative procedures. The various methods used to improve identification of these patients and creating standardized order sets for monitoring helped to improve communication between provider teams. In order

to sustain improvement, on-going continuous monitoring is necessary

Figure 1

Cause & Effect Diagram

ID as High Risk DM

Orders for Management

Information from Survey tool: Variation in how/when sent to pt & questions asked & who/when results are reviewed

Endocrine Consult, Variation in reasons for consulting & knowledge of Procedure Length

Schedule does not Accommodate Consult visits for enough time w patients or allow for the needs of High Risk DM patient

Information from Provider Is captured in Pt Hx w variation of specificity/accuracy & consistently transferred into Problem list

Information from Pt may be compromised; Not willing or inability to share; Not keeping up w current tx Post Sedation, Not asked, Family not present due to COVID restrictions

Referring Provider outside of MDA may not include DM Management in Orders

Variation Management of High Risk DM Pt in Outpatient Procedural Areas

Unclear re Care: Often pages to Endocrine for recommendations when no Treatment Plan

Variation in tool used & questions asked

Variation with who writes orders, who monitors, who does POC and Administers Insulin

Variation: when & who disconnects/reconnects Insulin Pump

Variaton with who, when, and how patients are communicated with

Patient Noncompliance with MDA Policy to remove pump

Discharge - lacking specified instructions

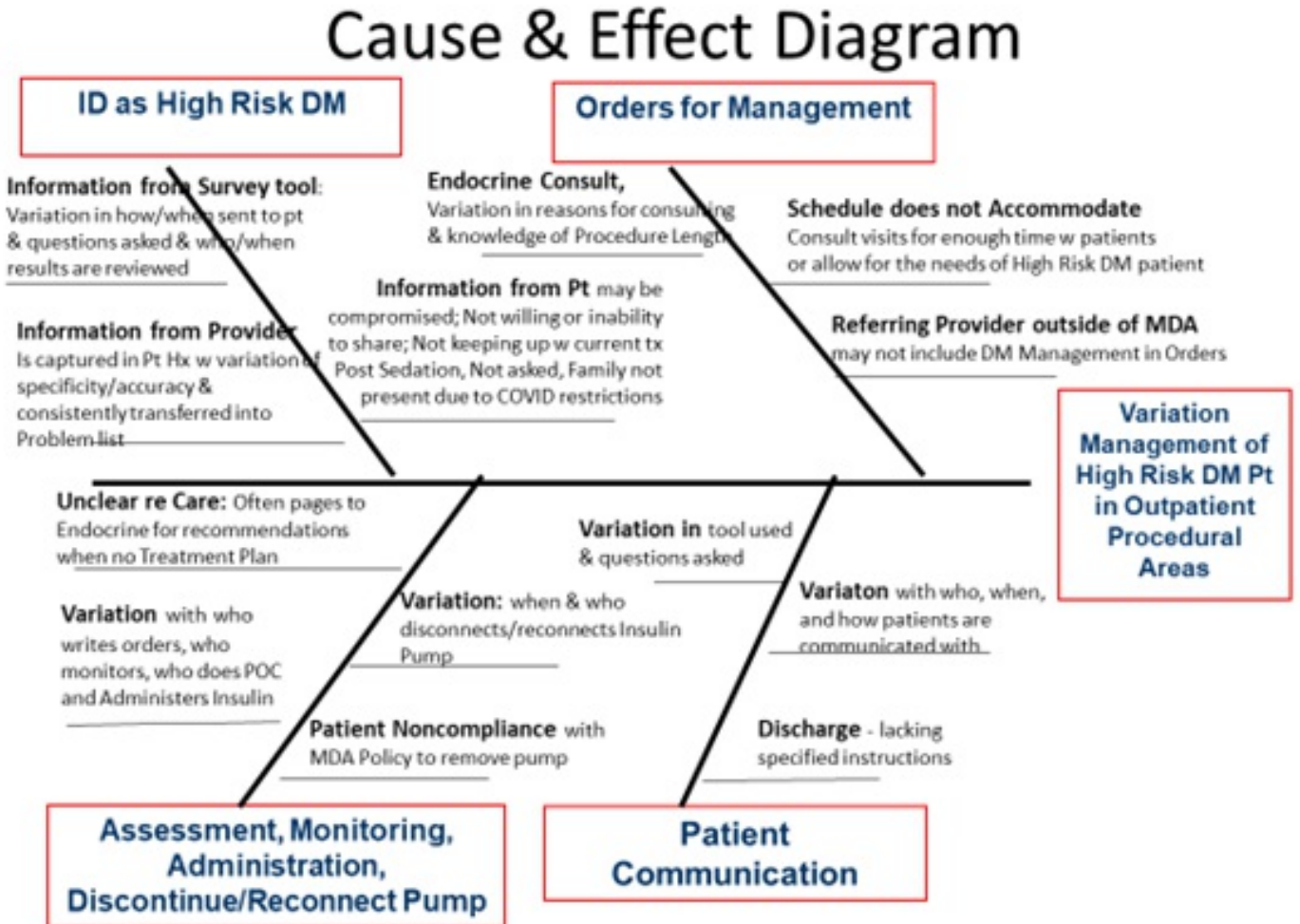**Assessment, Monitoring, Administration, Discontinue/Reconnect Pump**

Patient Communication

Figure 2

Graph 1

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