Background

- In 2022, the Centers for Medicare and Medicaid Services (CMS), added Severe Hypoglycemia as a new Clinical Quality Measure. (1)
- Severe Hypoglycemia was cited by CMS as “one of the most common adverse drug events” that can be prevented by “careful use of antihyperglycemic medications”. (1)
- Defined as a blood glucose reading of less than 40 mg/dL, with a hypoglycemic medication being given within 24 hours after the reading. (1)
- As a result, University Hospitals (UH) formed an interdisciplinary Hypoglycemia Reduction Project Team under their Quality Institute, a key part of its “Zero Harm” Initiative.
- UH’s “Zero Harm” Initiative aims to “ensure” that patients have an exception experience”. (2)
- Unifies initiatives to provide Safe and High-Quality Care.
- UH’s Hypoglycemia Reduction Team began a study to investigate determinants for Severe Hypoglycemia in order to guide what practices are best to prevent Hypoglycemic Events in patients.

Methods/Deliverables: The Chart Review Process

Inclusion Criteria

- Be a patient above 18 years old at either UH Ahuja or UH Parma Medical Centers.
- Have at least one blood sugar reading of 95 mg/dL or below.
- Severe Hypoglycemia Episode occurred in an inpatient setting between July 2022 and December 2022.

Title: GLU 55 System
Author: Karen E. Snyder
Date Created: 5/26/23
Number of Patients (Rows): 829

Purpose:
List of patients meeting inclusion criteria for chart review of UH Ahuja and UH Parma Medical Centers.

Table 1: Metadata for Table of Patients Meeting Inclusion Criteria.*

Deliverable 1: Dataset of Review of Chart Through UH Cares Electronic Medical Record

Table 2: Layout and Inputs for Dataset from Chart Review.*

Deliverable 2: R Code Written to Clean Dataset

Deliverable 3: Clean Dataset for RedCap

Early Results

While not yet fully complete, early findings of my chart review indicate:
- Many of the patients experiencing hypoglycemia episodes do not have diabetes and are not on antidiabetic medications
- For those that do have diabetes, there is often insulin given the night before with the episode occurring early in the morning.
- Many patients, if having a severe hypoglycemic episode, have multiple episodes in one visit.

Lessons Learned

- The scale of evidence needed to guide evidence-based practices is large.
- Quality Improvement is a process that takes time, evidence must be collected to drive the change, and habits and protocols must be changed to truly work, all of which takes time.

Future Directions

- Personally, analysis of my chart review is going to take place in a Capstone Project.
- UH will begin to plan and implement Hypoglycemia Protocol changes based on the evidence that is being collected.
- More studies of community hospitals is coming for UH.
- Integration of Best Practice Alerts for UH Epic.
- Justified need for GluCommander, which is AI that can alert providers to abnormal Blood Glucoses.

Public Health Implications

- This is an example of evidence-based medicine, with community health data from a patient population being used to drive health-practices on both an institutional and individual level.
- Quality Improvement is a unifier for both Public Health and Clinical Practices, as clinical policy changes are often done on the institutional and community level.

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References