

## Purpose

The purpose of this presentation is to review the impact of hypoglycemia on the hospitalized patient and to discuss strategies to improve inpatient documentation of hypoglycemic events and treatment protocols in a large teaching hospital.

## Background

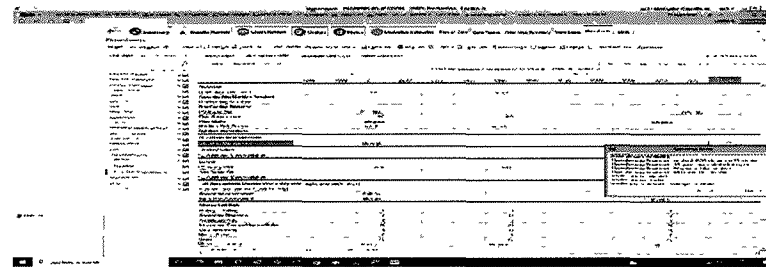
In-patient hypoglycemia (<70 mg/dL) can lead to increased morbidity, mortality, length of stay, patient dissatisfaction, and increased cost (Shelton et al., 2021). Additionally, hypoglycemia increases mortality rates by as much as 60%, and severe hypoglycemia increases this rate by 105% (Moore & Azganni, 2019). It is, therefore, imperative that hospitals reduce inpatient hypoglycemia events, through implementation of prevention and intervention measures to improve patient outcomes and decrease health care costs. Upon evaluation of hypoglycemia rates and events at TGH, a 1,041-bed teaching hospital, the Diabetes Education Team performed a root cause analysis using BJC Healthcare's HEAT (Hypoglycemia Event Analysis Tool) to identify risk factors and to develop interventions and preventative measures for hypoglycemia (Milligan et al., 2015). The findings indicated that there was a lack of standardization for documenting hypoglycemia events.

## Why Documentation is Important

Patients who experience severe hypoglycemia are at risk for recurrent events if these events are not identified and addressed through proper documentation (McCoy et al., 2018). Furthermore, documentation of hypoglycemia in the electronic medical record (EMR) ensures that prevention and intervention measures are consistently being performed by hospital nursing staff. Ensuring proper documentation of hypoglycemia at TGH would allow for identification of risk factors, tracking quality metrics, and reduce hypoglycemia adverse events.

## Discussion

9/2020 - Diabetes education team used BJC Healthcare's HEAT tool for data collection and discovered issues with inconsistent hypoglycemia charting (Milligan et al., 2015)  
 4/2021 - Developed a hypoglycemia flow sheet  
 5/2021 - Piloted the flow sheet on Med Surg unit, RN's provided feedback, and changes to flow sheet were implemented  
 8/2021 - Presented Hypoglycemia Flow Sheet to Nurse Practice Council for approval  
 Interdisciplinary team and Nursing Shared Governance composed of IT, Epic trainers, Diabetes Education Dept, Hypoglycemia Task Force, and Nurse Practice Council members assisted with final development of the Hypoglycemia Flow Sheet



## Causes of Hypoglycemia Identified at TGH

- NPO with no dose adjustment of basal/rapid acting insulin
- IV insulin administration
- Timing of glucose testing with insulin administration
- Steroid taper without insulin adjustments
- Late tray after mealtime insulin administration
- Insulin stacking
- Issues with tube feedings causing interruptions
- Poor appetite resulting in fluctuating food intake
- Insulin dose adjustments
- Use of Sulfonylurea
- Multiple co-morbidities such as renal failure, liver failure, gastroparesis, nausea/vomiting, sepsis

## Results

The Diabetes Education Team recognized the need for improvements to practice and modified the HEAT tool to align it closer to practice at TGH. The result was a standardized, simplified form that was presented to Nurse Practice Council. The next step was to convert the form to an electronic format into EPIC on a flowsheet row for nursing use. Currently, the positive outcomes for this hypoglycemia documentation flowsheet are:

- IT and Epic trainers assist with upgrades and modifications
- It has provided a standardized location for charting hypoglycemia events, treatments, and outcomes
- Can track reports for quality metrics

## Conclusions

Although, the Team developed a standardized format of documenting hypoglycemia in EPIC, as of this date, it is not being utilized as it was intended because there are numerous steps involved. Due to this fact, it requires continuous education for nursing staff to use consistently. The Diabetes Education Team plans to improve this documentation process in the future by adding a reminder for nursing staff in EPIC as a "brain task" as part of their daily work list.

## References

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