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Implementation of an Inpatient Diabetes Team: Impact on Hypoglycemia Recurrence

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Introduction / Background

- Hypoglycemia among inpatients with diabetes (DM) can lead to complications, transfers to higher levels of care, increased length of stay, and mortality (Draznin et al., 2014; Tisminetsky et al., 2014).
- A substantial portion of hypoglycemic events are not followed by proper adjustments to medications or carbohydrate intake, leaving inpatients who experience hypoglycemia at high risk for recurrence (Cook et al., 2007; Maynard, Huynh, & Renvall, 2008). Some hospitals have instituted specialty teams to help manage patients with DM.

Purpose

To evaluate the impact of a quality improvement program consisting of a DM-specialty team (nurse practitioner and RN-Certified Diabetes Educator) on rates of hypoglycemia recurrence during hospitalization.

Aim

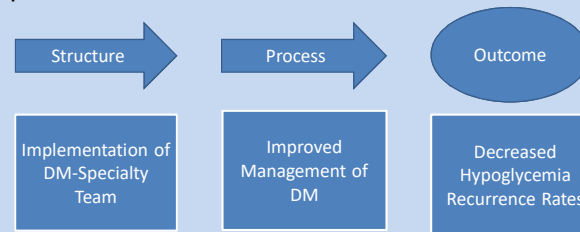
To describe and compare rates of hypoglycemia recurrence pre- and post-implementation of the DM-specialty team.

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Theoretical Model

- Donabedian's (1988) *Structure, Process and Outcome* model for health care quality provided the framework for this study.
- The DM-specialty team was conceptualized as a structural element supporting the performance of care delivery processes linked to improved patient outcomes.



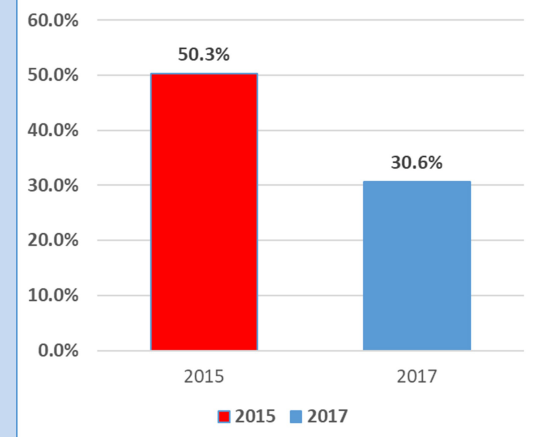
Methods

- Design: Descriptive comparative.
- Sampling: Purposive sample of inpatients with DM who experienced at least 1-episode of hypoglycemia (blood glucose <70 mg/dl).
- Data Collection: Retrospective. Medical records of patients hospitalized during a 1-month period in 2015 prior to the implementation of the DM-specialty team, and those of patients seen by the DM-specialty team during a 1-month period in 2017, were extracted.
- Analysis: Data from 2015 was compared to 2017 on age and risk for mortality using a validated comorbidity index (Charlson Comorbidity Index). The rate of hypoglycemia recurrence (recorded episodes >15 minutes apart) was calculated.

Results

- In 2015, 89 patients experienced hypoglycemia, in 2017 there were 71.
- The average age in 2015 was 65.5 years ($sd=13.9$), in 2017 it was 63.4 years ($sd=15.3$). The groups did not differ significantly on age ($t(142)=.862, p=.390$).
- Patients in 2017 had significantly higher comorbidity index scores ($M=7.5$) compared to 2015 ($M=5.6$), ($t(120.217)=-2.820, p=.006$).

Comparison of Hypoglycemia Rates



Conclusions

- Patients seen by the DM-specialty team had substantially lower rates of hypoglycemia recurrence despite a significant increase in the risk for mortality associated with comorbidities.
- Quality and safety in the care of patients with DM may be improved through the addition of such teams within hospital settings.