

Implementation of an Inpatient Pediatrics Diabetes Sickday Pathway

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Pathway

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Background

- Implementing protocols that guide medical workup and management *using high quality evidence*, standardizes patient care and improves care delivery.
- Patients who have ketosis without severe acidosis and don't quite meet Diabetic Ketoacidosis criteria are known as 'sickday' patients and do not have a standardized way of being treated.
- This pilot QI project looks at two general outcomes
 - The factors that influenced the efficiency and success of the pathway implementation
 - The effectiveness and safety of this treatment pathway at treating pediatric sickday patients on the inpatient floor

Problem Statement

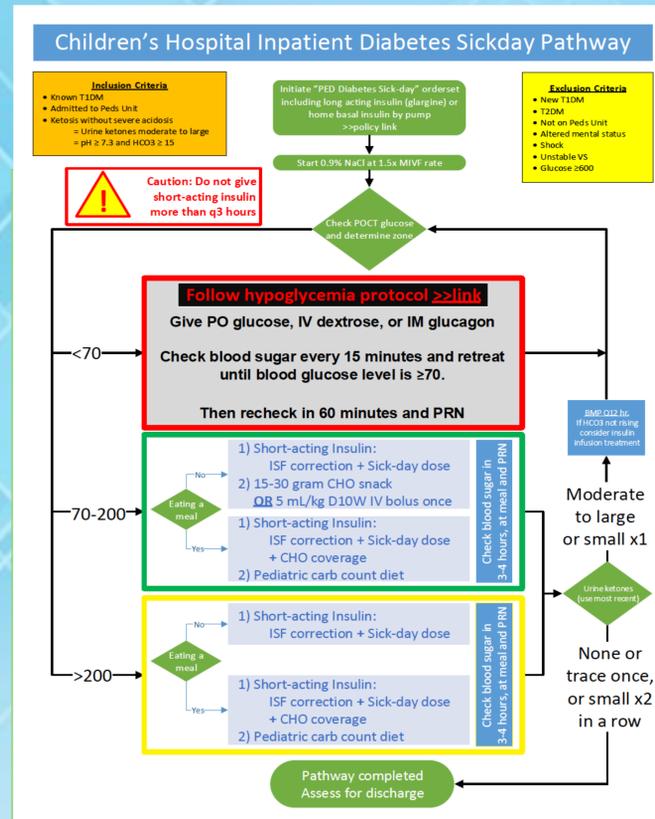
This pilot QI project aims to evaluate the stakeholder experiences as well as effectiveness of implementation of a pathway for inpatient management of sickday children with Type 1 Diabetes Mellitus.

Methods

- The Inpatient Diabetes Sickday Pathway was implemented at Lehigh Valley Children's Hospital (LVCH) October 26, 2018.
- Patient data was collected prospectively for rollout to January 31, 2019 - a 3 month period - through chart review via Electronic Medical Record (EMR).

Process	1. Ease of using the pathway clinically (Phone interviews)
Outcomes	1. Rate of patients requiring higher level care (Physician Notes, PSRs) 2. Episodes of hypoglycemia (POC results) 3. Time to resolution of ketosis (POC results)
Efficiency	1. Length of stay (Chart review) 2. Ease of access to the pathway (Phone interviews)

- Phone interviews with nurses and residents were also conducted using a standardized set of seven questions.
 - Responses to these questions were paraphrased and typed in real-time during the interviews.



Results

Demographics

- A total of nine patients were treated with the pathway over a 3 month period.
- Mean age 10.4 (3 - 15) years old.
- 88.9% of patients were male (8/9).
- 88.9% of patients had a primary diagnosis related to glucose derangements (8/9).

Effectiveness and Safety

- The mean Length of Stay is 34.95 hours.
- The mean ketone clearance time is 18.48 hours.
- One patient required elevation of care (11.1%), i.e. transfer from inpatient floor to the PICU.
 - insulin pump needle not properly placed in the subcutaneous needle.
- One hypoglycemic event that resolved quickly with treatment without complications.

Efficiency and Success

- Nurse education, and stakeholder buy-in are strengths of the process.
- Making the pathway more accessible with handouts, adjusting the pathway for patients with insulin pumps, and having more EMR resources on hand to introduce new orders are areas for improvement.

Discussion

- Overall pathway implementation was a success
- A major contributor of success was the interprofessional collaboration and buy in
 - From the perspective of nurses, being able to bring forward their opinions and concerns, shape the pathway, and receive thorough education about the pathway and the science it is based on was extremely important for their buy-in and arguably the entire success of the pathway.
 - Other key stakeholders were hospitalists, residents and endocrinologists
- In a review 16 studies, higher emotional intelligence in physicians was positively correlated with better teamwork and communication skills, increased organizational commitment and leadership, and better physician-patient relationships.¹
- Attainment of the necessary resources for pathway implementation is a major factor of efficiency.
 - For our institution, creating new epic order sets was a key bottleneck and delayed the rollout of the pathway.

Conclusion

- Creating and successfully implementing a management pathway is a complex and time consuming task that requires organizational awareness, relationship management, stakeholder buy-in, and interprofessional collaboration.
- Through feedback and future PDSA cycles, there is potential for the pathway to expand to include more patients and improve the quality and cost of care given to our patients.

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