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### A Multidisciplinary Diabetes Collaborative

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# A Multidisciplinary Diabetes Collaborative

Baystate Children's Hospital

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## Background

An Endocrine Collaborative was formed in 2018 with staff from Pediatric Endocrinology, Pharmacy, I&T, Nursing & Physician leaders to discuss safety concerns about the care of pediatric inpatients with diabetes.

- Monthly meetings occurred to gather information over the year.
- Practice gaps were identified through yearly needs assessments surveys, SRS's, staff communication, and unit CPC meetings.
- Meetings were held with Pediatric Medication Safety Committee to get pharmacy input.

## Problem

Lack of knowledge in types, actions, and timing of insulins, different pump types & continuous glucose monitoring devices, and lack of standardized ordering processes led to medication errors, provision of care errors, and staff frustration.

## Goals and Objectives

- Improve glucose management and outcomes in pediatric in-patients with diabetes
- Increase nursing staff knowledge & competence via educational opportunities such as in-services, Brown Bag Lunches, and Web-Based Training
- Increase accuracy of provider ordering by implementing a standardized Insulin/Carb Ratio sliding scale in a Power Plan
- Educate providers on long-term insulin ordering
- Increase overall awareness of diabetes management issues

## Methodology

- Nursing staff initially surveyed in 2018; gaps were identified in the following:
  - Knowledge of Insulin pumps and use, types and use of glucose monitoring devices, diabetes knowledge, and knowledge of insulin types
- Identified and trained unit-based champions 2018-21
- Gaps were addressed via educational opportunities:
  - Unit-based in-services on Diabetic Care 2019-21
  - Monthly educational Diabetic Brown Bag Lunch series for staff 2019-21
- Created and implemented annual web-based training 2021
- Created and implemented standardized order set for Insulin/Carb Ratio sliding scale active in CIS 2021
- Created and distributed "Tip Sheet for Ordering Meds" for providers
- Educated providers within their team on medication ordering
- Resurveyed nursing staff in 2021 and 2022

## Results

- Nursing staff participated in 10 educational opportunities specific to Diabetic Care over 24 months
- Participation ranged from 4 to 41 employees, with a mean of 18 at each session
- Increases noted in staff feeling "Competent" (36%) and "Proficient" (27%) in diabetes-related care and knowledge
- 100% use of Insulin/Carb Ratio Power Plan for sliding scales
- Increased overall awareness of diabetes management issues

By Question	Overall comfort in care of Diabetic	Understand different insulin types	Knowledge of patients own insulin pump policy	How to calculate correction factor	Understand carb counting	Understand glucose monitoring devices	Understand insulin pumps
Shift towards:	Proficient	Proficient	Competence	Competence	Competence	Competence	Proficient

  

Medications	Instructions	Dose
	Please select appropriate Carb/Insulin Ratio below. These should be ordered IN ADDITION TO Correctional Insulin (please see additional options at the bottom of this powerplan)	
<input type="checkbox"/>	Carb/Insulin Ratio 1:3 - Give 1 unit of insulin for every 3 gram of carbs	1-66 units, Injection, Subcutaneous Injection, 3 times a day before meals
<input type="checkbox"/>	Carb/Insulin Ratio 1:4 - Give 1 unit of insulin for every 4 gram of carbs	1-49 units, Injection, Subcutaneous Injection, 3 times a day before meals
<input type="checkbox"/>	Carb/Insulin Ratio 1:5 - Give 1 unit of insulin for every 5 gram of carbs	

## Challenges

- Conducting training during COVID-19 was difficult
- There was increased patient census and acuity during pandemic
- There was high staff turnover during pandemic; post-implementation knowledge assessments could not capture original learners
- It was difficult obtaining outcome data to measure improvement
- There was an unexpected increased time to build the program for pharmacy and for IT build into CIS after requested

## Practice Implications

- Increasing staff knowledge & competence when caring for patients with diabetes
- Standardizing ordering processes
- Optimizing safe, quality care
- Preventing medication errors related to Insulin/Carb orders
- Sharing lessons learned to other care areas

## Acknowledgements

- Baystate Pediatric Endocrinology
- Baystate Children's Hospital
- Baystate Pharmacy
- Baystate Pediatric Emergency Department
- Baystate Informatics & Technology

## References

- CDC: Diabetes
- Pediatric Endocrine Society

