Right from the Start: Improving Glycemic Outcomes Through Standardized Diabetes Education - A QI Project

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Background

Patients with newly diagnosed diabetes mellitus, particularly those requiring insulin therapy, face multiple barriers to effective management that may contribute to poor glycemic outcomes. A systematic review and qualitative synthesis performed of 79 studies identified two overarching themes in regards to self management of Diabetes: First being, socioeconomic barriers to diabetes self-management; and second being facilitators of diabetes self-management, including lifestyle and goals, support from healthcare providers and informal support.

This QI project aimed to systematize diabetes education and care for pediatric patients and their families/caregivers following a new diabetes diagnosis, using standardized teaching topics and scheduled check-ins offered in person or virtually to accommodate diverse needs, preferences, and access to care.

Objective

Primary Goal:

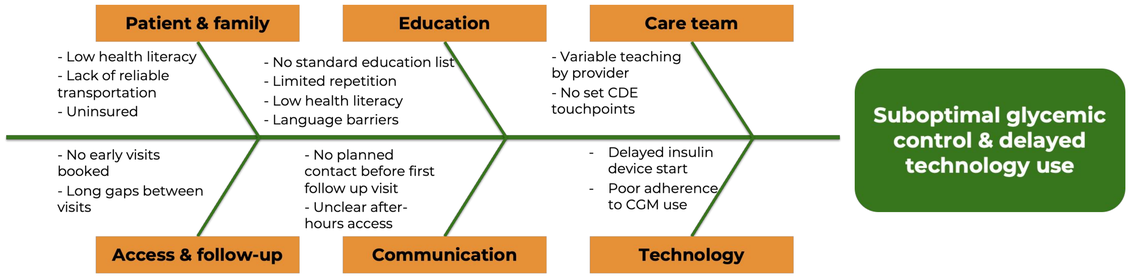
- Improve glycemic outcomes and decrease complications for new onset diabetes patients at the 1 year post diagnosis mark.

Secondary Goal:

- Promote early technology use (i.e, CGMs, smart pens and insulin pumps).

Methods

Fishbone analysis: contributors to suboptimal early outcomes



Setting & population: University of Miami Pediatric Endocrinology clinic; children and adolescents with new-onset diabetes (T1DM, T2DM) started on insulin at diagnosis.

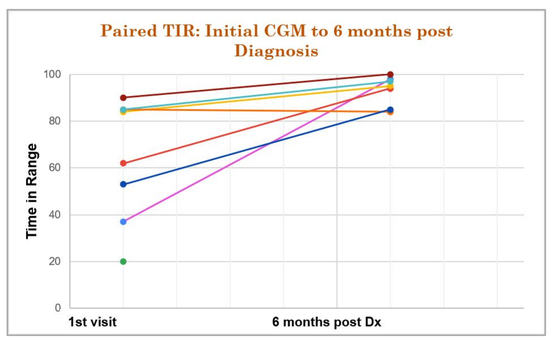
Interventions: (1) Standardized topic list reviewed by physicians and CDEs at every visit until understanding was confirmed; (2) CDE visit within 1 week of diagnosis and then Q1-2 weeks until physician visit. Then as needed (3) daily calls for week 1 and a 24/7 fellow on-call line.

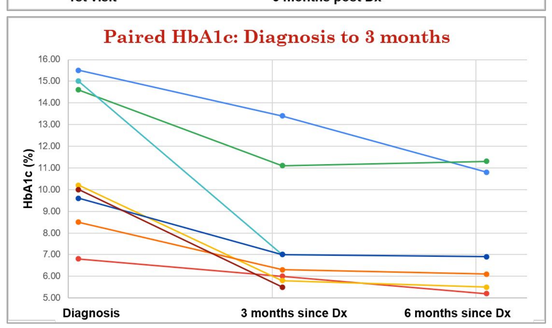
Measures: HbA1c and time in range (TIR) at baseline, 3 and 6 months; number of visits; time to CGM and insulin device start; CGM wear; number of DKA; number of severe hypoglycemia episodes.

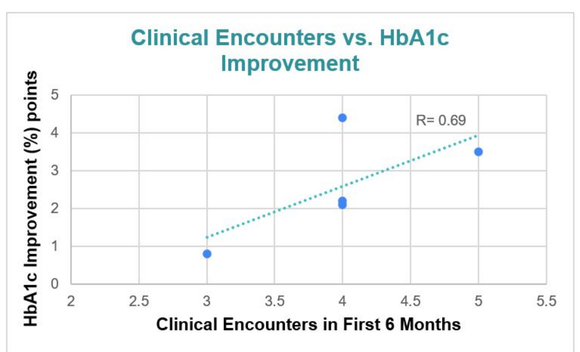
Results

Total of **12 patients.**

Self Reported Gender	**Female** 33%	**Male** 66%
Age	Range 2-18 y/o	
Self Reported Ethnicity:	**Black /African American** 58.3%	**Hispanic** 33.3%
	White/ Non-Hispanic 0%	**Asian** 8.3%
Diagnosis	**T1DM** 50%, **T2DM** 50%	All started on insulin at Dx
A1c at diagnosis	**Range** 6.8%- >15.5%, **Mean** 11.2%	
Time since Dx	**Range** 1m- 13m	







Result Analysis

At the 6 month mark post diagnosis, we found:

Glycemic control:

- Mean HbA1c change of -3.0 percentage points.
- Mean TIR change of +18.5 percentage points.
- Too early to analyze association and correlation between number of visits and changes in HbA1c, however exploratory analysis suggests positive association.

Technology use

- All patients had CGM placed upon diagnosis, and 83% wore their CGMs consistently to the 6 month mark.
- Only 2 patients were started on insulin delivery technology by 2 months post diagnosis.

Adverse events:

- No severe hypoglycemic event in any patient.
- No DKA admissions for any patient.

Future

Next Steps:

- Modify current strategies and continue expanding cohort.
- Compare outcomes with New onset Diabetes patients prior to current process established.
- Assess whether improvements in glycemic outcomes are sustained at 6 and 12 months after diagnosis.

References

American Diabetes Association Professional Practice Committee for Diabetes*. 1. Improving Care and Promoting Health in Populations: Standards of Care in Diabetes-2026. Diabetes Care. 2026 Jan 1;49(Supplement_1):S13-S26. doi: 10.2337/dc26-S001. PMID: 41358887; PMCID: PMC12690171.