The Inpatient Pediatric Diabetes Consult Nurse: A Trailblazing Model For Decreasing Length of Stay

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Background

Pediatric patients admitted with a diagnosis of new onset Type 1 Diabetes (T1DM) require time-intensive education and care coordination prior to discharge. Hospital occupancy constraints created a challenge to completing education and led to delayed admissions and prolonged length of stay for patients. As a result, if a bed on the unit specialized in T1DM education was not available, nurses from that unit were requested to complete teaching elsewhere in the hospital. The ability for the nursing staff to meet this off-unit need was limited by availability. Even when they were able to provide education, it was compressed and variable. Previous attempts to train "superusers" for other units had been unsuccessful. It was identified that education provided outside of the unit specializing in T1DM was inconsistent and inequitable.

Hospital Occupancy
Percentage of time spent in High Occupancy

		FY 2021	FY 2022	FY 2023	FY 2024
General Care	7E	39%	75%	89%	91%
	11W	50%	84%	93%	94%
	12E	51%	88%	94%	96%
	12W	57%	87%	92%	95%
ICU	NICU	64%	76%	83%	78%
	PCTU	18%	55%	71%	74%
	PICU	15%	28%	38%	33%
Psych	Child Psych	82%	75%	46%	32%

4% — 100%

High occupancy is defined as occupancy at or above:
85% General Care
90% ICUs
80% Women

Clinical Question

Will the implementation of a "Pediatric Diabetes Consult Nurse" (PDCN) specializing in T1DM education achieve the following aims below compared to current state?

1. Provide equitable and standardized education
2. Improve care coordination
3. Decrease the inpatient length of stay (LOS)
4. Shift discharge time to earlier in the day
5. Increase percentage of patients discharged from Children's Emergency Services (CES)

Literature Review

The following themes were identified from the literature:

1. **Self-management education is critical** for empowering patients and families with T1DM (BMC Medicine, 2023; Ergun-Longmire, et al., 2021)
2. **Standardized** diabetes **education** is recommended to improve outcomes and quality of life (Ergun-Longmire et al., 2021)
3. Education that is provided is limited based on **staff expertise and availability** (Nassar, Montero, & Magee, 2019)
4. A **dedicated inpatient diabetes educator** could be used for consults (Nassar, Montero, & Magee, 2019)

Design and Methods

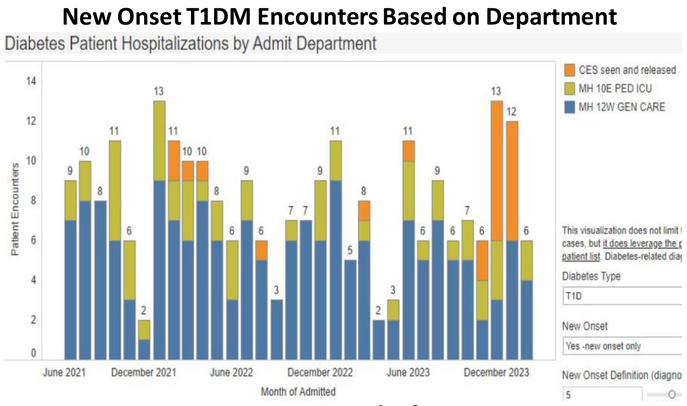
To create, implement, and evaluate this role:

1. A nursing leadership team and a systems analyst created an electronic medical record derived dashboard to assess education needs and evaluate length of stay.
2. The PDCN role responsibilities were defined.
3. The role was created as a 0.9 full time equivalent (FTE) scheduled Monday – Friday.
4. A nurse from the inpatient unit specializing in T1DM education was selected for the role.
5. An order to consult the "Pediatric Diabetes Nurse" was developed.
6. Education provided on role to units and medical teams in January 2023
7. Role Go-live date –February 1, 2023
8. The dashboard was utilized to track the number of consults placed for the role from all areas of the hospital (as well as length of stay, hourly discharge time, etc.)
9. Pre-Implementation Data Timeframe: January 3, 2020 – January 31, 2023
10. Post- implementation Data Timeframe: February 1, 2023 – March 12, 2024

Primary Outcomes

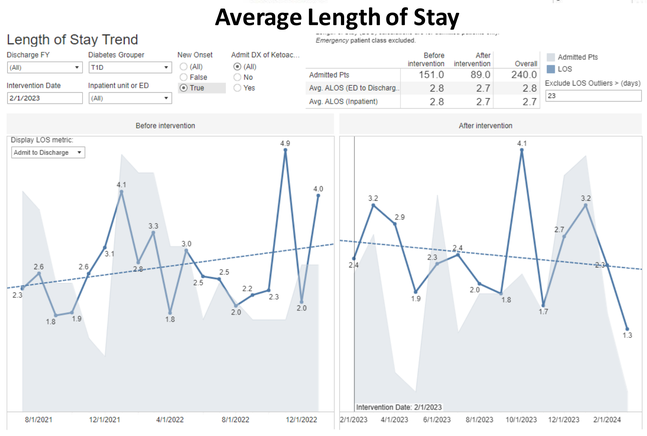
Data for patients with New Onset T1DM	Outcome Achieved
Reduced LOS by **2.4 hours** (2.8 days to 2.7 days)	☑
Increased percentage of discharges occurring before 5 PM (58% to 60%)	☑
Increased percentage of patients discharged from Children's Emergency Services (CES) from 18% to 24%	☑
Standardized education and care coordination from being variable and limited based on unit and staff availability to **equitable, standardized and able to be completed on any unit**	☑

New Onset T1DM Encounters Based on Department

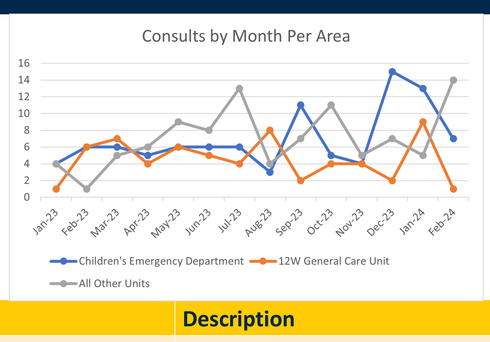


90 inpatient hospital days saved by patients being admitted and discharged from the Children's Emergency Department

Average Length of Stay



Process Metrics



Outcome	Description
Standardized education and care coordination for other Pediatric Endocrinology patients. About 60% of the consults in 2023 were for Endocrinology patients who did not have a New Onset TIDM diagnosis.	Type 2 Diabetes, Cystic Fibrosis Related Diabetes, Medication-Induced Diabetes, Diabetic Ketoacidosis readmissions requiring re-education, hyperinsulinemia, adrenal insufficiency, and more
Resource for nursing staff	Assistance with high risk, low frequency patients and maintaining policies
Nursing representative	Attend meetings (hospital and institution wide) Policy and resource evaluation and process improvement
Bridge inpatient and outpatient Endocrinology settings	Improved care coordination and communication Facilitate process to order a Continuous Glucose Monitor (CGM) Complete the Diabetes Medical Management Plan (DMMP)
Equitable care for other patients during high occupancy	As a result of the PDCN being able to go to any unit, hospital was able to approve other cases for patients who require specific inpatient beds and care.

Conclusion

The inpatient Pediatric Diabetes Consult Nurse role has helped ensure that the patients, families and caregivers being served are provided with standardized and consistent diabetes self-management education no matter where the patient is being cared for in the hospital. It has eased transition gaps from the inpatient and outpatient settings and safely reduced length of stay while education quality and time spent, increased. In addition, the role has expanded to serve other Endocrine populations beyond T1DM.

The goals of the pilot were met, and opportunities were identified where further work can be done to reduce length of stay and improve outcomes.

Future Considerations

Consider opportunities to decrease length of stay and shift discharge times to earlier in the day:

- Attempt to set up supply delivery from the Durable Medical Equipment company to patient home instead of to hospital
- Utilize donor provided "Diabetes backpack" to discharge home with (includes 2 weeks of Diabetes testing supplies)

Utilize ongoing communication, seek feedback, and facilitate process improvement on all units to assess the role's efficacy and to ensure needs are being met

Identify interventions to decrease the length of stay for patients admitted with Diabetic Ketoacidosis

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