Pediatric Diabetes Education Program at UMC Children's Hospital

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BACKGROUND

Receiving a diagnosis of diabetes mellitus as a child does not just affect the child; it becomes a diagnosis for the whole family. Within a short hospital stay, the child (if able) and the family must learn the complex problemsolving skills required for a safe discharge.³

In the summer of 2019, while caring for a patient and family newly diagnosed with diabetes, a bedside nurse (now the Pediatric Clinical Nurse Specialist [CNS]) recognized the lack of a structured education program as a barrier to patient and family teaching. Literature supports that many patients with diabetes do not receive adequate diabetes education, with **less** than 7% receiving education within the first year of their diagnosis.²

In discussions with providers and nurses, there were concerns that the readmission rate for patients with diabetes was high and that having a structured education program could also help reduce the readmission rates.

PURPOSE

This performance improvement project aimed to develop a structured pediatric diabetes education program for the patients and families and decrease the readmission rates for this patient population.

METHODS

Using the nursing shared governance model and the Institute of Health's plan, do, study, act (PDSA) model, an interprofessional task force was established to develop a patient-centered, skills-based educational experience to support patients in making informed self-management decisions. The task force gathered between June 2019 and March 2021 to design the new standardized Pediatric Diabetes Education Program.

Following the shared governance model, the bedside nurse gathered interprofessional stakeholders to begin discussions. The interprofessionals consisted of:

- Bedside Nurse
- Child Life Specialist
- Diabetic Educator
- Pediatric Nurse Educator
- Nursing Leadership
- Dietician
- Hospitalist
- Intensivist
- Pediatric Endocrinologist
- UMC Healthy Living Institute
- UMC Marketing Team
- Healthclips Patient Video Library
- JDRF (Juvenile Diabetes Research Foundation)
- Zynx Health

MY DIABETES

EDUCATION

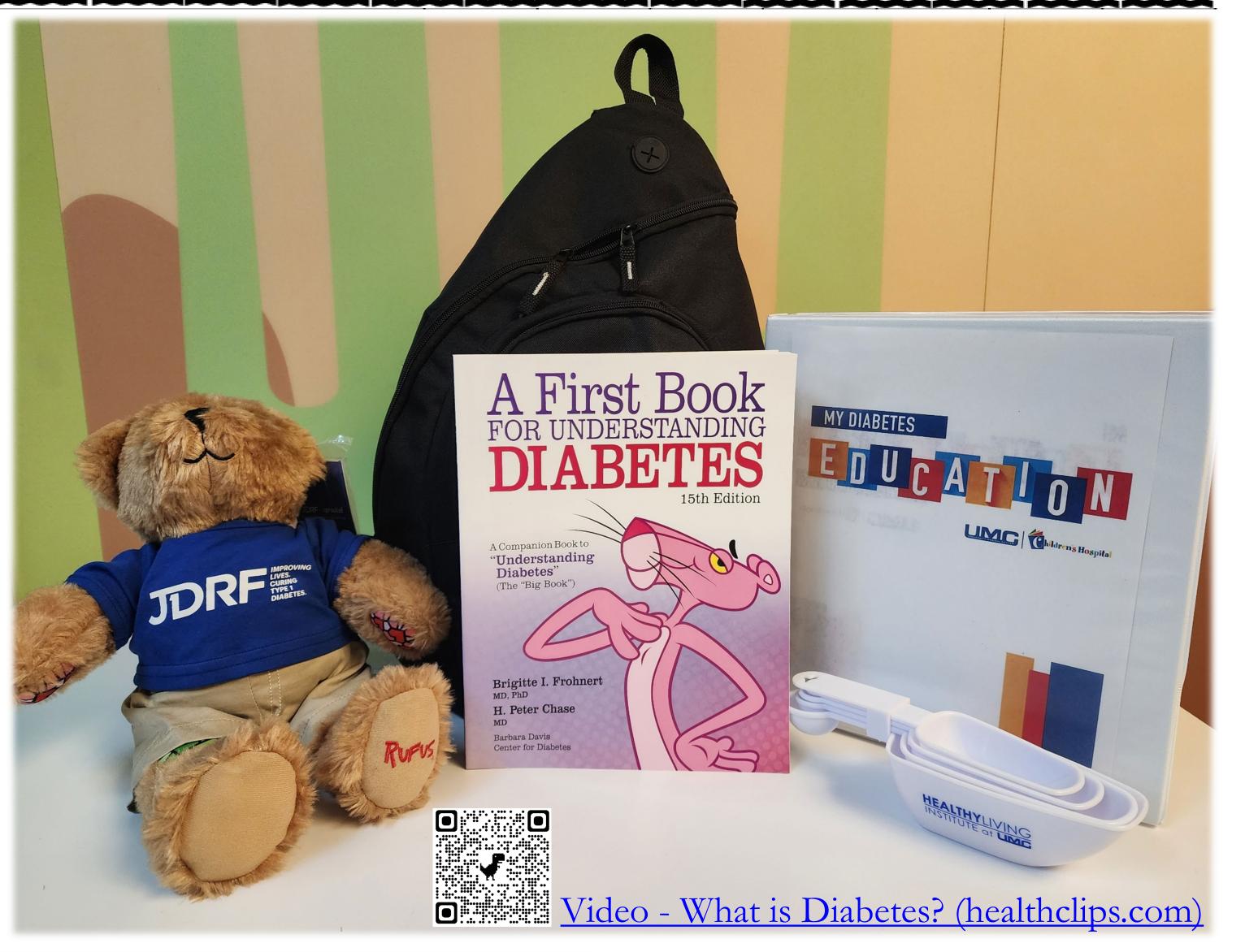


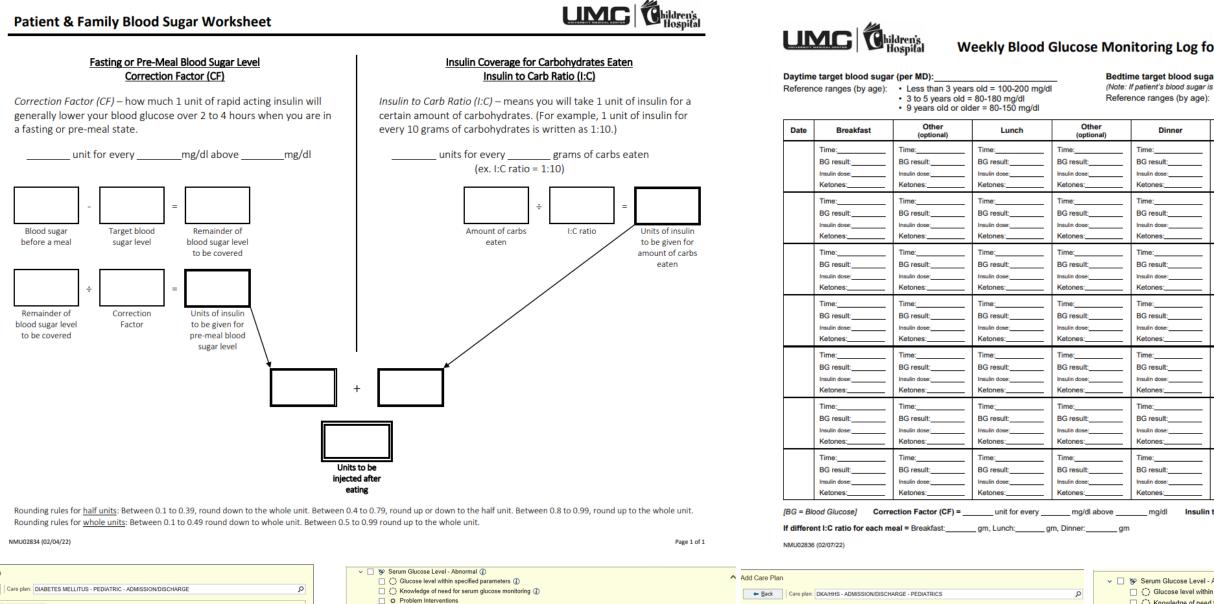
Patient Label

DIABETES EDUCATION CHECKLIST

Primary Caregiver (PC): _____ Secondary Caregiver (SC): _____

ALL PATIENT AND FAMILY TEACHING TO BE DOCUMENTED IN THE ELECTRONIC MEDICAL RECORD ON THE PATIENT <u>EDUCATION TAB</u>





	Units to be injected after eating own to the whole unit. Between 0.4 to 0.79, round up or down to the hal down to whole unit. Between 0.5 to 0.99 round up to the whole unit.	f unit. Between 0.8 to 0.99, round up to the whole unit.		Ketones: Ketones: Ketones: Ketones: Ketones: Ketones: Ketones: Ketones:	Insulin dose: Ketones: Time: BG result: Insulin dose: Ketones: Time: BG result: Insulin dose: Ketones: gr of carbs eaten at meals Page 1 of 1
Care Plan ← Back Care plan: DIABETES MELLITUS - PEDIATRIC - ADMISSION/DISCHARGE Expand All Collapse All Collapse all by default select tems > You must select at least one element from the template. Diabetes Mellitus - Pediatric - Admission/Discharge □ W Immunocompromised () Absence of Infection signs and symptoms > () □ Knowledge of Infection prevention and control procedures () □ Problem Interventions Infection providers capacial ()	Serum Glucose Level - Abnormal ① Glucose level within specified para Glucose level within specified para Knowledge of need for serum gluc Problem Interventions Blood glucose monitoring ① BKAHHS signs and symptoms Communication, diabetes educ Communication, dietitian ① BEducation, DKAHHS signs and Education, Ireatment goals Glucose management ② Hypoglycemia management ①	monitoring () monitoring () symptoms ()	Add Care Plan Egack	Serum Glucose Level - Abnormal ① Glucose level within specified parameters (Glucose level within specified parameters (Frowledge of need for serum glucose mon O Problem Interventions Blood glucose monitoring ① BLOKAHHS signs and symptoms monitoring DKAHHS signs and symptoms monitoring BLOCOMMUNICATION, DKAHHS signs and symptoms BLOCOMMUNICATION, DKAHS signs signs and symptoms BLOCOMMUNICATION, DKAHS signs si	ing ①
□ Infection monitoring - general ① □ Communication, infection control ① □ Education, infection prevention ① □ Oral hygiene care ① □ Skin care ② □ Skin care ③ □ Able to achieve maximum level of psychosocial functioning ③ □ Effective coping >- ① □ Improved psychological status ③ □ Problem Interventions □ Caregiver role strain screening ③ □ Psychosocial distress signs and symptoms monitoring ④ □ Social function assessment ④ □ Communication, Carle management ④ □ Communication, Child Life ④ □ Education, community resources ④ □ Education, stress management ④ □ Education, stress management ④ □ Education, support group ④ □ Coping skills training ④ □ Family participation promotion ④ □ Sensory Perception - Impaired ④ □ Sensory Perception - Impaired ④ □ Sensory Perception - Impaired ④ □ Sensory because injury >- ④ □ Problem Interventions □ Neurosensory assessment ④ □ Pain screening ④ □ Education, impaired sensory perception signs and symptoms ④ □ Education, safety precautions - peripheral neuropathy ④ □ Environmental safety management ④	■ Medical nutrition therapy ① Medical nutrition therapy ① Able to safely transition to next level of care ① Knowledge of care transition plan ① Participation in care planning ① Problem Interventions Immunization screening ① Living conditions assessment ① Readmission risk assessment ① Communication, child-development specialist ① Communication, disease management ① Communication, social services ① Communication, social services ① Communication, social services ① Education, blood glucose monitoring ① Education, diabetes mellitus ① Education, diabetes mellitus ② Education, diabetes mellitus ② Education, diabetes mellitus elf-management · exercise ① Education, diabetes mellitus self-management - exercise ① Education, hyperglycemia prevention ①	■ Education, hypoglycemia self-management () ■ Education, immunization → () ■ Education, iffestyle changes () ■ Education, medical alert identification - diabetes mellitus () ■ Education, medication management - insulin () ■ Education, medication management - insulin () ■ Education, oral hygiene () ■ Education, opstdischarge follow-up () ■ Education, postdischarge follow-up () ■ Education, when to call provider () ■ Education, The importance of education in diabetes () ■ Education, The importance of education in diabetes () ■ Education, Feelings/adjustment at diabetes onset () ■ Education, Feelings/adjustment at diabetes onset () ■ Education, Feelings/adjustment in the toddler/preschooler () ■ Education, Special challenges of the teen years () ■ Education, School or work and diabetes () ■ Education, Child-sitters, grandparents and diabetes () ■ Education, Carb Ratio Worksheet () ■ Education, Blood Sugar Log () ■ Education, Home Supplies prior to discharge () ■ Education, subcutaneous insulin injection ()	□ Problem Interventions □ Laporatory () □ Laboratory () □ Laboratory () diagnostic results monitoring () □ Urine ketone monitoring () □ Education, safety precautions () □ Oxygen administration () □ Cerebral Edema () □ Cerebral Edema () □ Communication, respiratory therapy () □ Head of bed elevation () □ Incontinence management () □ Nasogastric suction () □ Patent airvay maintenance () □ Reality orientation () □ Reality orientation () □ Electrolytes within specified parameters () □ O Problem Interventions □ Electrolyte minimal and symptoms of () □ Electrolytes within specified parameters () □ O Problem Interventions □ Body weight monitoring () □ Electrolyte minimal and symptoms monitoring () □ Electrolyte replacement ()	Transition Readiness ()	■ Education, home supplies ① ■ Education, blood glucose monitoring ① ■ Education, continuous subcutaneous insulin infusion ① ■ Education, diabetes mellitus ② ■ Education, diabetes mellitus self-management ① ■ Education, diabetes mellitus self-management - exercise ① ■ Education, DKA/HHS causative factors ① ■ Education, DKA/HHS prevention ① ■ Education, DKA/HHS signs and symptoms ① ■ Education, pta/HHS signs and symptoms ② ■ Education, immunization → ② ■ Education, imfection prevention ① ■ Education, medication management - insulin ③ ■ Education, prescribed diet ③ ■ Education, subcutaneous insulin injection ③ ■ Education, venous thromboembolism signs and symptoms ③ ■ Education, when to call provider ① ■ Education, community resources ③ ■ Education, long-distance travel ③

RESULTS

Throughout the 21-month process, with delays secondary to COVID-19, the interprofessional team developed a patient-centered, skills-based educational program for the patient. The program consists of the following standardized resources:

- ©JDRF Bag-of-hope, which includes the primary teaching book A first book for understanding diabetes (the book is also available in Spanish)
- ©UMC's My Diabetes Education Binder, which includes (in both English and Spanish)
 - ➤ Diabetes Education Checklist
 - Patient and Family Blood Sugar Worksheet
 - > Weekly Blood Glucose Monitoring Log for Patients
- Learning how to take care of my diabetes daily routine
- ©Measuring cups/spoons from UMCs Healthy Living Institute
- ©Pediatric-friendly educational videos from Healthclips
- ©Evidence-based practice interprofessional plans of care from Zynx Health ©An interprofessional education team includes the Pediatric APRN-CNS,

Bedside Nurses, Dietician, Child Life Specialist, and Physicians/Residents.

All pediatric nurses are trained through online modules on the topic of diabetes and diabetic ketoacidosis and attend a four-hour in-person workshop to learn about the patient and family education program, practice scenarios, documentation practices, and communication with the interprofessional team.

CONCLUSIONS

The patient-centered, skills-based educational program was implemented into practice in April 2021. Each patient and family receives individualized patient-centered education incorporating the values, beliefs, needs, and preferences into the educational experience. Patient and family feedback on the program is essential to its success. Adaptations have been made to the program based on this feedback, such as adding the measuring cups/spoons and providing sample math sheets for high and low blood sugars.

The readmission rates from April 2021 to August 2023 have only seen <u>one</u> 30-day readmission for patients who received their initial diagnosis and <u>zero</u> 60, 90, or 120-day readmission.

The Pediatric APRN-CNS will continue to monitor the program and conduct a retrospective study of readmission rates before the program and after for both new diagnoses and established.

REFERENCES

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4. Vasireddy, D., Sehgal, M., & Amritphale, A. (2021). Risk Factors, Trends, and Preventive Measures for 30-Day Unplanned Diabetic Ketoacidosis Readmissions in the Pediatric Population. *Cureus*, *13*(11), e19205. https://doi.org/10.7759/cureus.19205



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