

Adapting Pediatric New Onset Diabetes Education for Health Literacy Needs

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Background

- Type 1 diabetes affects approximately 1 in 400 children less than 20 years of age in the United States. Diabetes mellitus requires intensive self-management.
- Parents/caregivers with limited health literacy may not understand health information and education pertaining to the care needs of their child, which may lead to negative outcomes for youth with new onset diabetes mellitus.
- Understanding caregiver health literacy needs can help the care team identify best practices for providing family-centered care and education.
- Through the implementation of a formal health literacy assessment, the Inpatient Diabetes Program at Boston Children's Hospital has established methods to tailor new onset diabetes (NODM) education to address caregiver health literacy levels.

Evidence Synthesis

Evidence supports the implementation of health literacy practices to improve the communication of health information to patients and families with findings of:

- Increased patient/family comprehension
- Increased engagement in care
- Enhanced safety, quality, and experience of care
- Improved self-management and decision making
- Improved child health outcomes
- Reduced health disparities

Practice Innovation

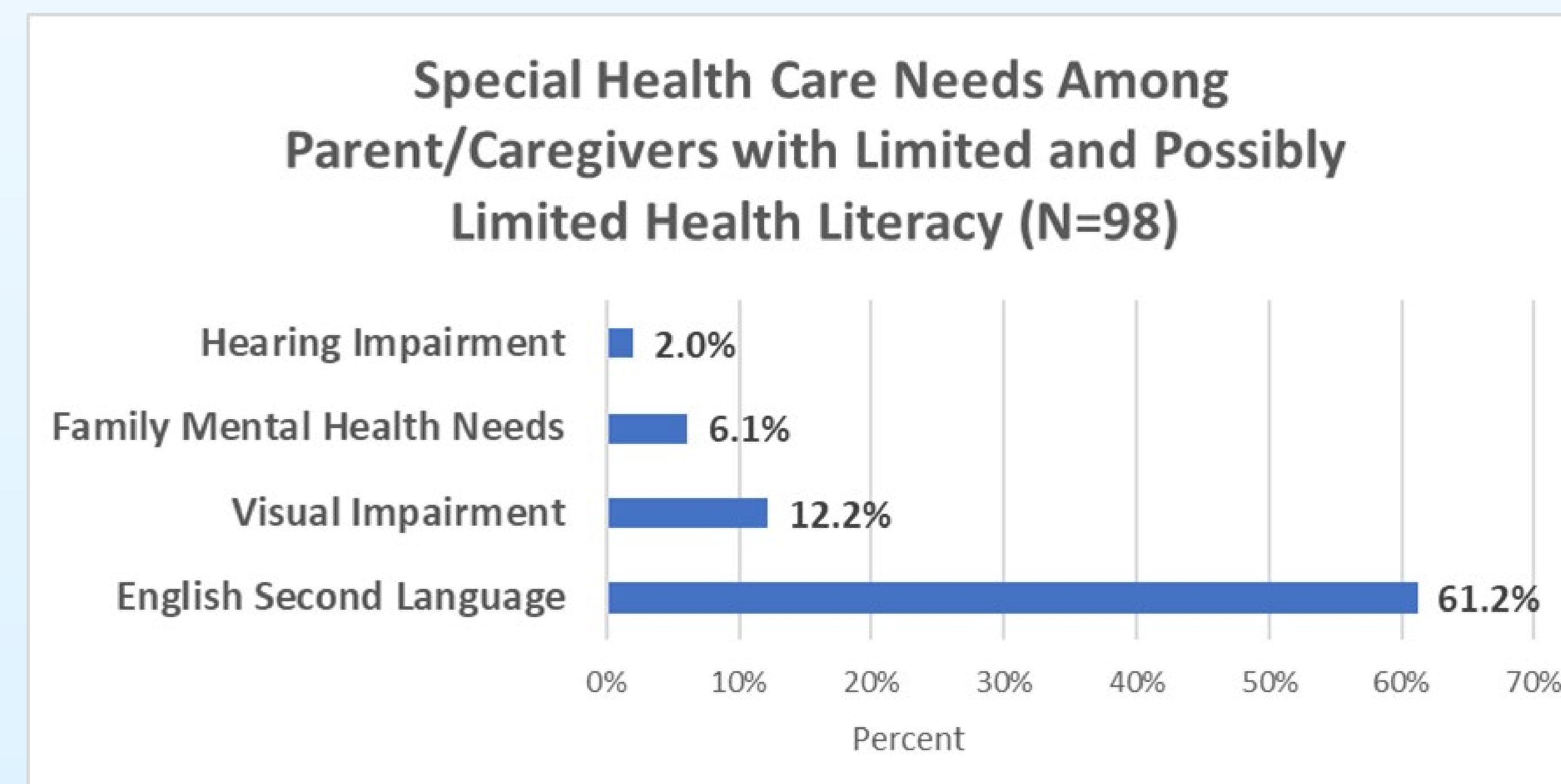
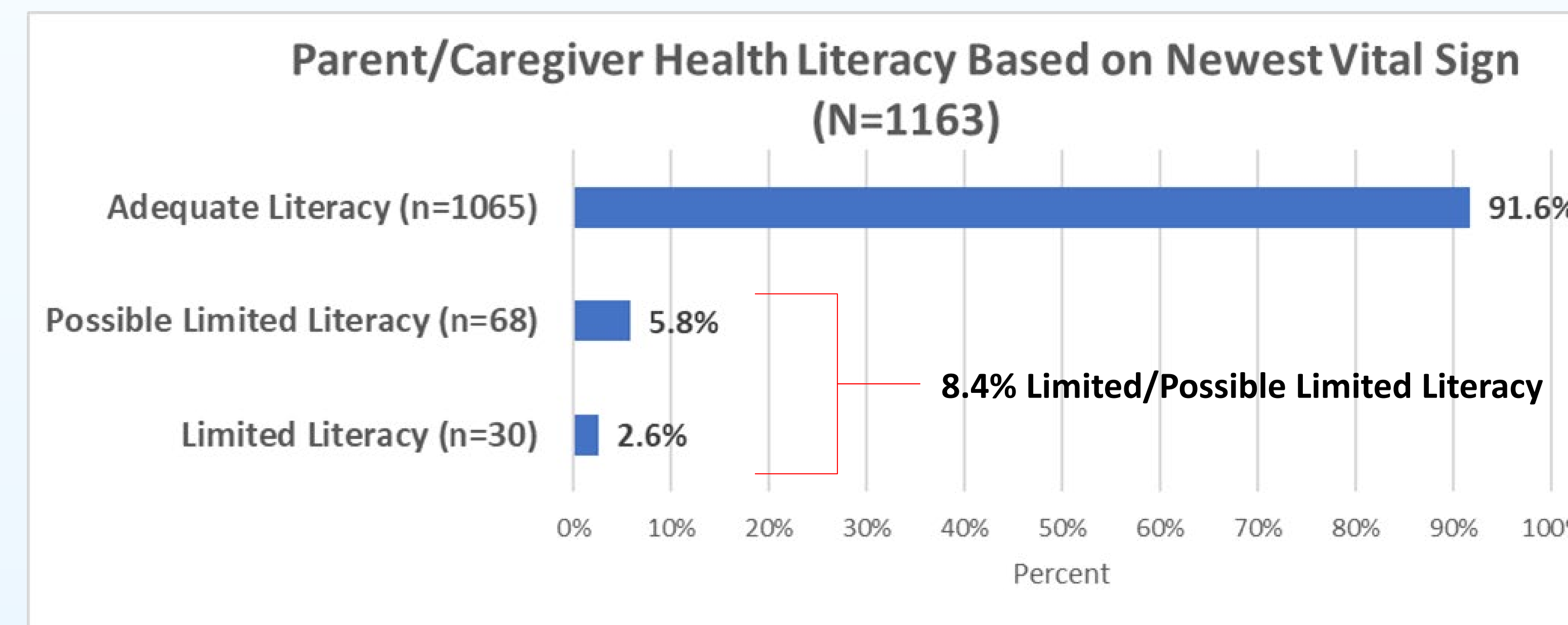
To incorporate formal assessment of health literacy into the admission assessment of special healthcare needs for parents/caregivers of NODM patients in order to improve the ability to provide timely and individualized diabetes education.

Implementation

- Prior to the initiation of diabetes education with caregivers, the inpatient Diabetes Nurse Educator (DNE) completes a health literacy assessment using the *Newest Vital Sign* (in English or Spanish).
- Health literacy assessment facilitates early identification of caregiver health literacy limitations and needs.
- Health literacy assessment alerts DNE of necessity to modify diabetes education interventions.

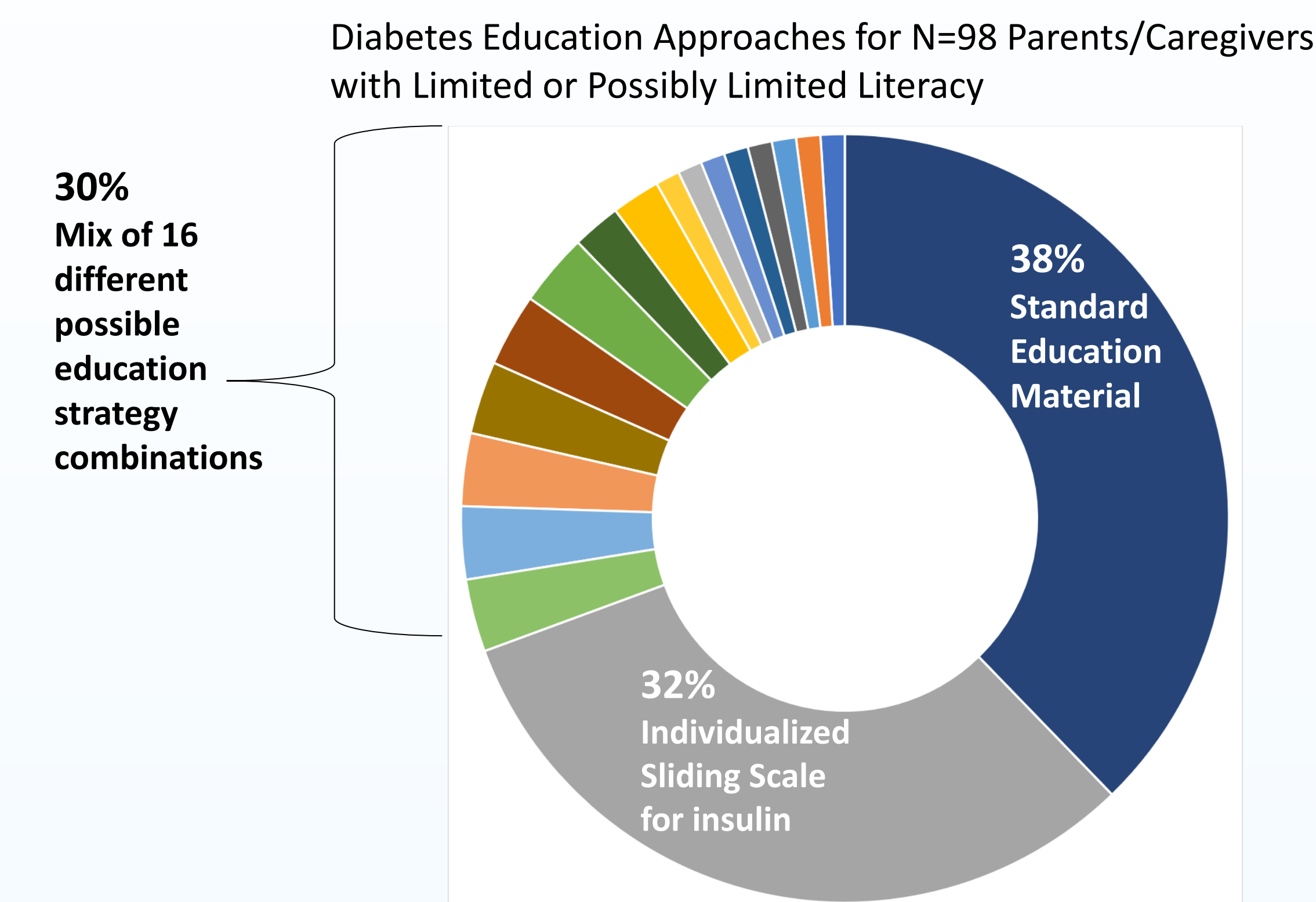
Five-Year Overview (2018-2022)

- 1,198 NODM patients
- Mean age 10.2 +/- 4.8 years
- 46.3% Female
- **97% (N=1163) completion of *Newest Vital Sign***



Diabetes Education Resources

- Diabetes education strategies are adapted to meet the individual health literacy needs of parents/caregivers
- Teach-back method aids with assessment of outcomes and need for additional diabetes education modifications.



Example Individualized Sliding Scale for Insulin

Humalog Insulin Regimen Combining Carbohydrate Coverage and Blood Glucose Correction						
Blood Glucose	Not eating	10-20g carbohydrates	21-40g carbohydrates	41-60g carbohydrates	61-80g carbohydrates	81-100g carbohydrates
70-150 mg/dL	0	2 units	3 units	5 units	7 units	9 units
151-200 mg/dL	2 units	3 units	5 units	7 units	9 units	11 units
201-250 mg/dL	4 units	5 units	7 units	9 units	11 units	13 units
251-300 mg/dL	5 units	7 units	8 units	10 units	12 units	14 units
301-350 mg/dL	7 units	8 units	10 units	12 units	14 units	16 units
351-400 mg/dL	9 units	10 units	12 units	14 units	16 units	18 units
>400 mg/dL, Ketones <1.0	9 units	11 units	12 units	14 units	16 units	18 units

Example Diabetes Education Resources

Family Education Sheet

Blood Glucose Scale

300 (red arrow up, sad face) OR Check Urine Ketones OR Check Blood Ketones OR If ketones positive, call

70 (green arrow down, happy face) 3 to 4 glucose tablets OR 1/2 cup OR Wait 15 Minutes OR Recheck

Family Education Sheet

Ketone Results

NEGATIVE (0 mg/dL) TRACE (5 mg/dL) SMALL (15 mg/dL) MODERATE (40 mg/dL) LARGE (80 mg/dL, 160 mg/dL)

0.9 or less (green arrow down, happy face) Less than 1.0 1.0 or greater (red arrow up, sad face) 1.0 or greater

Family Education Sheet

's Daily Plan/Schedule Date: _____

Meal Time Blood Glucose Humalog Insulin Lantus Insulin

Breakfast Snack Lunch Dinner Bedtime

Conclusions

Formal assessment of health literacy facilitates individualized diabetes education to meet parent/caregiver health literacy and special health care needs and contributes to the delivery of safe, efficient, equitable, and high-quality care.

Special thanks to Olivia Sterns, MPH, Quality Improvement Consultant, Division of Endocrinology, Boston Children's Hospital for assistance with data analysis.