Diabetes Health Care Transition Assessment at School: Collaborating with School Nurses for Success

Victoria B. Nicksic, MD; Whitney N. Beaton, MSN; Gretchen S. Forbes, RN; A. Laurel Cornelius, FNP; Timothy S. Markle, MA; M. Tracy Bekx, MD

ABSTRACT

Background: The transition from pediatric to adult care is particularly complex for adolescents with type 1 diabetes because of the demands of diabetes self-management. Transition readiness assessments can provide education, support autonomy, and individualize care; however, limited time and resources may hinder implementation of an optimal transition process. Partnerships between health care and education systems may extend the multidisciplinary transition team into the school setting.

Methods: This study assessed the feasibility of implementing a school-based diabetes transition readiness assessment using a diabetes-specific tool and evaluated changes in student participation over a 2-year period.

Results: Integrating school nurses into the diabetes transition team was feasible. With targeted promotion and program refinements, student participation increased by 68% in Year 2 compared with Year 1.

Conclusions: A school-based diabetes transition readiness assessment using the Readiness of Emerging Adults with Diabetes Diagnosed in Youth (READDY) tool was feasible and associated with increased student participation over time. This model may represent a promising community-based approach to support transition readiness among adolescents with type 1 diabetes.

BACKGROUND

Health care transition, during which adolescents move from pediatric, family-based care to an adult, self-directed model of care, is exceptionally complex for adolescents with type 1 diabetes.[1] Optimally, diabetes health care transition ensures that adolescents have the skills needed to manage diabetes independently and effectively in adulthood. Adolescents with type 1 diabetes are a vulnerable population who experience frequent lapses in care due to adherence challenges, gaps in health care contact, and other life stressors. Despite improvements in glycemic control associated with advancements in diabetes technology, adolescents continue to have higher A1c levels than both younger children and adults.[2,3]

Successful diabetes transition requires a structured, multidisciplinary approach that fosters self-management and health care navigation skills, as recommended by the American Academy of Pediatrics and American Diabetes Association.[3] This process should start in early adolescence to allow for a gradual transition of diabetes responsibilities. Assessing readiness for transition provides opportunities to deliver education, individualize care, and support autonomy.[4] The Readiness of Emerging Adults with Diabetes Diagnosed in Youth (READDY) tool, designed for adolescents with type 1 diabetes aged 15 years and older, is a well-studied 44-item questionnaire that assesses self-confidence in 4 areas: Diabetes Knowledge, Health System Navigation, Insulin Self-Management, and Health Behaviors.[1,5,6] Unfortunately, current health care systems often lack sufficient resources to support the transition process for adolescents with chronic disease during this critical period.

One innovative solution is to partner with school nurses as members of the transition team. School nurses have unique access to students during school hours, a practical time when adolescents use diabetes self-management skills more independently. Despite the National Association of School Nurses noting that school nurses are well positioned to support health care transition,[7] to our knowledge, no prior studies have evaluated the use of a school

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Author affiliations: University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin (Beaton, Bekx, Markle, Nicksic); Madison Metropolitan School District, Madison, Wisconsin (Cornelius, Forbes).

Corresponding author: Victoria B. Nicksic, MD; 600 Highland Ave, MC: 4108, Madison, WI, 53792; email vnicksic@uwhealth.org; ORCID ID 0000-0001-8957-7583

nurse as part of a multidisciplinary transition team. This partnership offers a novel opportunity to integrate transition readiness assessments into the school setting.

This study assessed the feasibility of implementing a school-based diabetes transition readiness assessment using the READDY tool and evaluated student participation over a 2-year period.

METHODS

This study was conducted in middle schools (grades 6-8) and high schools (grades 9-12) in a single public school district. This study was approved by the school system's external research committee and was deemed not to constitute human subjects research by the University of Wisconsin Minimal Risk Institutional Review Board. The study team consisted of diabetes care providers from an academic medical center (2 physicians, 1 clinical nurse specialist, and 1 advanced practice provider [APP]) and public school nurse leaders (1 nurse coach/APP and 1 registered nurse), who met regularly to develop and implement this project. The READDY tool was distributed to middle school and high school students with type 1 diabetes by school nurses at their respective schools. Participation by school nurses and students was voluntary.

Because of concerns related to the length of the READDY tool, in Year 1 the study team abridged the instrument to 5 questions focusing on insulin dosing and blood glucose management. The lead school nurse emailed all middle and high school nurses within the district to describe the project and invite participation. Participating school nurses distributed printed versions of the abridged READDY tool to English-speaking students with type 1 diabetes during the fall and spring semesters. In the spring, a second survey was distributed to both students and nurses to collect feedback and guide changes for the second year. Data collected included (1) the number of students who completed the READDY tool, (2) the number who completed the spring survey, and (3) feedback from participating students and nurses obtained through Likert scales and open-ended questions. Students who completed surveys in both semesters received a $25 gift card.

In Year 2, the complete READDY tool was administered to high school students, while middle school students received a 23-item version that excluded less age-appropriate items (eg, driving). Both English- and Spanish-language versions were distributed during the fall semester. In addition, students were asked to select a learning topic from the tool to review with school nurses, as opportunities allowed, utilizing resources organized by the academic diabetes team, including PowerPoint presentations, handouts, and website links.

Participating students completed a follow-up survey in the spring semester focused on their self-identified learning topic and project feedback. Participating school nurses completed a spring survey assessing time commitment, available resources, utility of completing the READDY tool, and the process of identifying learning goals with students.

Table 1. Participation Year 1 vs Year 2

	2023-2024 n	2024-2025 n
Schools		
Middle schools	5	7
High schools	3	6
Students		
Middle schoolers – total	11	12
Middle schoolers who picked learning topic	–	12
High schoolers – total	8	20
High schoolers who picked learning topic	–	16
Nurses		
Total	9	15

Table 2. Student Feedback Year 2

	Middle School (N = 12)	High School (N = 18)
I found it helpful to complete the transition readiness survey.	92%	66%
I found that completing the transition readiness survey helped me communicate with my school nurse better.	83%	66%
I found that completing the transition readiness survey gave me more confidence in my diabetes skills.	92%	56%

During Year 2, all project materials were made available on the school district website. The lead school APP tracked and collected all data in a shared, anonymized spreadsheet. Data collected included (1) the number of students who completed the READDY tool, (2) the number of students who identified a learning topic, (3) the number of students who completed the spring survey, and (4) feedback from participating students and nurses. Participating nurses and students received gift cards. The 2 school nurse leaders received consultation fees.

RESULTS

Five of 8 middle schools and 3 of 5 high schools with students with type 1 diabetes participated in Year 1, with a total of 23 eligible students (11 middle school and 12 high school). All middle school students and 67% (n = 8) of high school students completed the READDY tool. Feedback from 18 students and 9 nurses, as well as input from a high school student advisory group, indicated that this project was feasible. Recommendations included expanding the READDY tool and incorporating an educational intervention.

In Year 2, increases were seen in the number of schools participating (13 vs 8), the number of eligible students (43 vs 23), and the number of students completing the READDY tool (32 vs 19). Most participating students selected a learning topic (middle school, n = 12; high school, n = 16) (Table 1).

The Year 2 spring survey was completed by 12 middle school and 18 high school students. The majority (92% of middle

school students and 72% of high school students) provided clear responses to the question, "What did you learn about this topic?" Many identified the school nurse as their primary learning resource (85% of middle school participants and 67% of high school participants). Most of the middle school students and over half of the high school students strongly or somewhat agreed that completing the READDY tool was beneficial (Table 2).

Thirteen nurses provided feedback, and 85% agreed that participation in this process increased engagement with their students, while 38% found it difficult to find time to meet with students. Nurse engagement with students varied, with most nurses meeting with students twice (range, 1–7 times). Most nurses (77%) found the education materials helpful and reported benefits from establishing relationships with students and observing growth in their diabetes knowledge and confidence. Areas for improvement included additional educational resources for younger and Spanish-speaking students.

DISCUSSION

This study evaluated a novel collaboration between a diabetes health care team and a public school system, representing an important intersection in the management of chronic disease among adolescents. This 2-year study demonstrated that partnering a diabetes health care team with school nurses, who have direct access to students, provided a feasible and well-received model for diabetes transition readiness assessment in the school setting.

Leveraging schools' to students and utilizing school-based resources, particularly school nurses, can expand the multidisciplinary health care team, facilitate type 1 diabetes transition readiness assessment, and potentially reduce lapses in care and diabetes-related complications associated with a poor transition to adult diabetes care.[2,3,8] However, this approach, in which school nurses serve as key facilitators of diabetes education, must be balanced with their existing responsibilities, including acute and chronic disease management, medication administration, and health screening.[9] Indeed, early adoption and engagement among lead school nurses may be the most important determinant of successful implementation of transition readiness assessment within school systems and potentially for other chronic diseases.

Despite the success of this initiative, barriers such as limited time for school nurses, competing academic priorities for students, and the need for greater student engagement impeded full implementation. Strategies to increase student participation and provide additional resources for nurses are needed to address these obstacles. The lack of a tool specifically designed to assess diabetes transition readiness remains a challenge, as the READDY tool, which relies on the self-reported confidence in diabetes-specific skills among high school-aged adolescents, is not linked to objective assessment of those skills.

Ongoing collaboration between health care and education systems is needed to further refine transition programs that are not only school-based but also scalable and adaptable to a variety of chronic conditions. Future phases of this project will focus on overcoming barriers related to resource limitations, time commitment, and student participation, as well as formalizing targeted diabetes education based on identified knowledge gaps.

CONCLUSIONS

The implementation of a collaborative, school-based diabetes transition readiness assessment using the READDY tool is novel, feasible, and, with buy-in from key stakeholders within the school setting, capable of serving increasing numbers of students. This collaboration represents a promising model for community-based approaches that complement and extend the reach of traditional health care settings to enhance chronic disease management.

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