

A Novel Approach to Adolescents With Type 1 Diabetes: The Team Clinic Model

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The transition of pediatric patients into the adult world is a major medical issue and a high-risk time period (1–4). In patients with type 1 diabetes, glycemic control is at its worst during adolescence and emerging adulthood (5,6). The goal of this study was to investigate the feasibility and acceptability of a novel clinical care approach to the type 1 diabetes transition population that would require no additional resources or staff, would be applicable in all clinical settings, could be sustainable outside of a grant setting, and would not require additional time or appointments for patients and families.

Alternative medical care approaches, specifically shared medical appointments (SMAs), have successfully increased patient and provider satisfaction, maximized billing, and improved outcomes in other challenging patient populations. The SMA model has been used in adults with chronic medical conditions (including diabetes), women receiving prenatal care, patients requiring urgent care visits, and patients needing routine health care maintenance (7–10). Although not reflected strongly in the literature, the SMA model has also been successful in the pediatric population.

In the literature, SMA models have resulted in improved patient outcomes, increased satisfaction of providers and patients, and improved billing and efficiency. Group scheduling has allowed for more

comprehensive visits, with increased screening rates and more frequent educational interventions (e.g., from dietitians, nursing staff, and mental health providers). The SMA model has also been found to be more efficient for medical providers, allowing them to see more patients in the same time period (10).

Research Design and Methods

Based on the success of SMAs in other chronic medical conditions, the Team Clinic SMA clinic was developed for adolescent patients receiving care at a large pediatric diabetes center. A multidisciplinary team of providers caring for patients in the diabetes center, including social workers, dietitians, certified diabetes educators, registered nurses, a physician's assistant, a nurse practitioner, pediatric endocrinologists, and a consultant pediatric diabetes psychologist, was assembled to direct clinic development. The development process occurred over a period of 3–4 months. Because clinics are typically scheduled 3–4 months in advance, promotion and scheduling of Team Clinic occurred during the development period. Clinic managers, schedulers, and medical assistants were also consulted regarding the logistics of scheduling group appointments and the general needs of the clinic.

This report describes the feasibility and acceptability pilot study of Team Clinics that was carried out before beginning a randomized,

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controlled trial of this program. Patients between 13 and 18 years of age being seen in the diabetes center were encouraged to participate, with the exclusion of non-English-speaking patients and patients with severe behavioral or psychological disorders that would make participation in an SMA difficult. Providers were informed of the availability of Team Clinic and recommended the option to patients during routine visits. Flyers were also posted around the center to notify patients and parents of the availability of Team Clinic for subsequent appointments. If patients were interested in participating, they contacted the schedulers or clinic coordinator to schedule their next routine visit in a Team Clinic SMA. Requirements of the institutional review board were met before intervention implementation.

Study Results

Clinic Design

Team Clinic began in January 2013. For the pilot, three to four patients were scheduled with each provider, with one to two providers attending every Team Clinic session (a total of three to eight patients per clinic session). Clinics with fewer than four or five patients scheduled only required one provider.

The structure of Team Clinic SMAs for patients, parents, and providers varied from routine appointments (Figure 1). A nurse practitioner, physician’s assistant, and medical doctor rotated as providers for the clinic. Five ancillary staff (registered nurses, dietitians, and social workers) rotated as facilitators for the group. Team Clinic SMAs were held in an education room that had been rearranged to provide a more relaxing and welcoming environment (e.g.,

no exam table or desk, sofa and bean bags for seating, relaxed lighting, and warmer decorations). Although these modifications enhanced the clinic room environment and required minimal funds, they likely were not necessary and could be omitted to avoid any financial commitment for the facility.

All patients and parents participating in Team Clinic SMAs arrived at the same time and completed a regular check-in with clinic medical assistants, including vital sign assessments and pump/meter downloads. Once check-in was completed, all families gathered in the Team Clinic room for orientation to the clinic process. During the orientation period, patients and parents also completed all necessary institutional review board forms, including forms for consent and assent and one ensuring patient confidentiality during the group format.

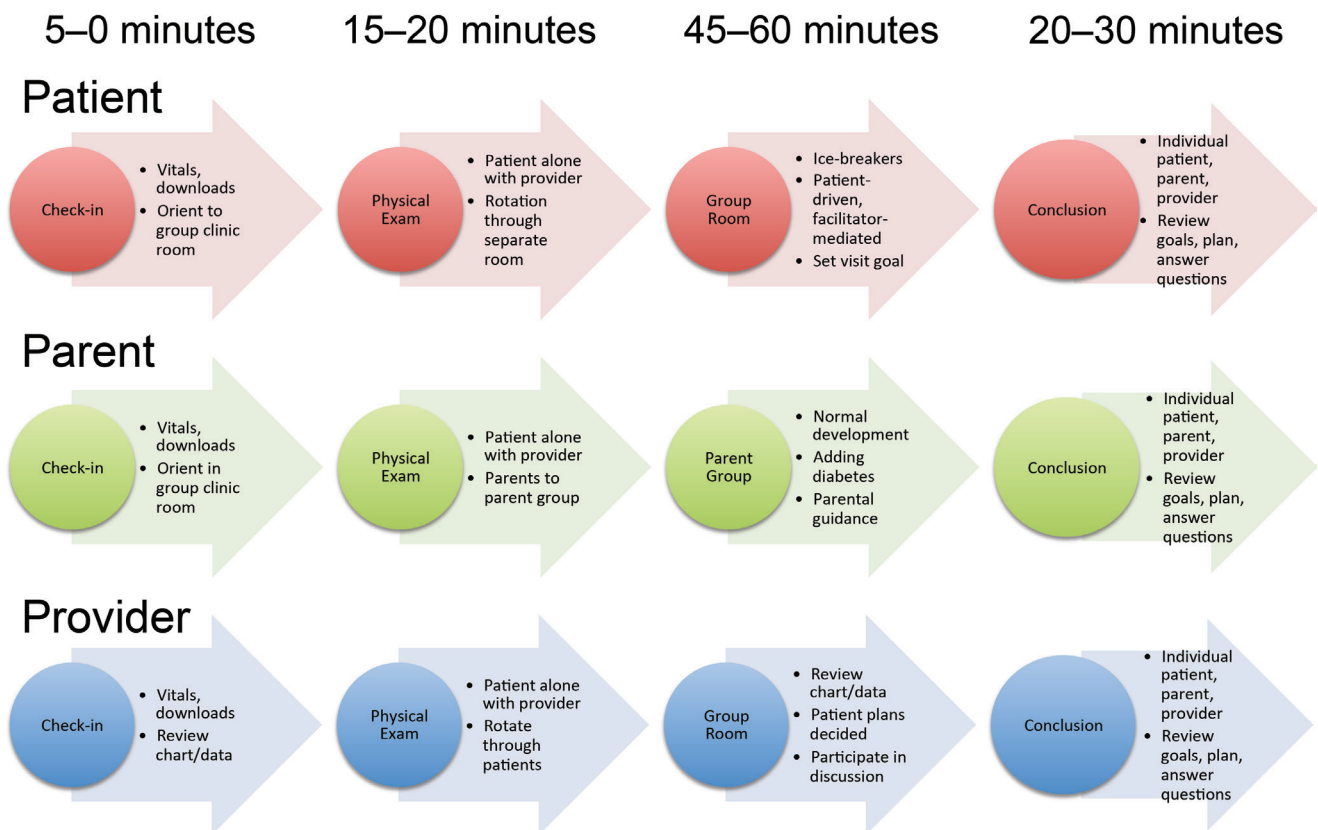


FIGURE 1. Description of patient, parent, and provider experiences during Team Clinic SMAs. First row, time for completion of each portion of the visit; second row, patient experience; third row, parent experience; fourth row, provider experience.

After orientation, parents left for their own group appointment, which was held in a separate conference room, and patients remained in the Team Clinic room. Patients then completed individual physical exams with the medical provider in an exam room located near the Team Clinic room. Once all individual physical exams were completed, adolescents participated in a patient-driven, facilitator-directed discussion. The group discussion ended with patients setting goals for their next appointment.

The visit then concluded with each patient and his or her parent having an individual discussion with the provider. During this time, the provider reviewed the plan for the visit, the patient relayed his or her goal for the next appointment, and the parent(s) asked any additional questions.

Patient Group Discussions

The patient group discussions started with an introductory ice-breaker led by the facilitator, during which patients gave their names and answered a few questions about themselves. To begin the patient-driven discussion, group members submitted written questions to allow participation in a nonconfrontational, anonymous manner. Patients then rotated reading and answering questions and were encouraged by the facilitator to ask questions of each other. If patients did not have questions, the facilitator began the discussion with general stories and questions regarding diabetes management. Facilitators directed discussions in six different focus areas, including 1) diabetes myths and facts; 2) diabetes in school; 3) high-risk issues such as alcohol, drugs, and driving; 4) social activities, including dating, sex, and friends; 5) diabetes management during exercise; and 6) balancing diabetes responsibilities and the desire for independence with parents. If there was interest, additional topics were discussed, including college, leaving home, dietary questions and concerns, diabetes research, and dia-

betes technology (e.g., insulin pumps and continuous glucose monitors). Patient group discussions provided educational information, addressed self-efficacy and self-advocacy, and provided peer support.

Parent Group Discussions

The parent group discussions started with a focus on normal adolescent development, with continued discussion of diabetes' impact on normal development. Conversations centered on approaches to challenging adolescent situations and methods to assist developing teens with type 1 diabetes. Parent groups were initiated by a facilitator but often continued without a facilitator. The amount of facilitation time required for the parent group was minimal (i.e., a maximum of 15–20 minutes). When two facilitators were not available, the patient group facilitator started the parent group before meeting with the adolescents, while the adolescents were completing their individual physical exams. Parent questions and concerns were addressed both during the group and also individually, when each child and his or her parent(s) met with the provider separately at the end of the visit.

Patient, Parent, and Provider Satisfaction

Between January and October 2013, 92 patients participated in Team Clinic (mean age 15.82 ± 2.1 years, 43% female, 60% non-Hispanic white, 24% Hispanic/Latino, 6% black; reflective of the overall clinic population). Appointments lasted ~2 hours each, with an average of 4 patients/group (± 1.05). A self-administered satisfaction survey from patients indicated that 96% felt more supported, 82% better understood information compared to during regular appointments, 82% felt more comfortable asking questions, 88% would recommend Team Clinic to others, and 84% wanted to attend another Team Clinic. Sixty-six percent of patients scheduled another appointment in Team Clinic.

Parent surveys indicated that 92% felt more supported, 92% felt more comfortable asking questions, and 92% better understood information compared to during regular visits. Ninety-two percent of parents said they would recommend Team Clinic to others, and 92% wanted to attend another Team Clinic.

Provider satisfaction levels were also high. All participating providers stated that they enjoyed Team Clinic, felt it provided needed education to patients and families, and wanted to participate again. When compared to general clinic appointments, 75% reported that the quality of care was higher in the Team Clinic SMAs.

Conclusions

Team Clinic SMAs are a feasible, sustainable clinical care approach for adolescents with type 1 diabetes. Group clinics were successfully scheduled in a busy pediatric diabetes center without issue. Patients were seen in a more efficient manner by staff and providers, and participation did not require additional time for patients or parents. Participants received more education compared to during standard visits, and providers were able to provide education to a greater number of patients in a more effective and efficient manner compared to during their usual clinic visits. Team Clinic was instituted without additional resources or funding, making it an excellent model for clinics searching for a new approach to their adolescent transition population. Team Clinic SMAs can be completed without grants, donations, or additional clinic staff. In fact, Team Clinic maximized staff and provider time.

The Team Clinic model is generalizable and applicable to any diabetes practice (e.g., academic hospitals, private practices, or small hospitals). The only requirements are a diabetes care provider, a facilitator, and a room suitable for the group, making the Team Clinic model significantly different from previous transition

interventions requiring additional clinic staff, funding, and time. In pediatric diabetes clinics that are already short-staffed and poorly compensated, the Team Clinic model may be appealing because it is cost-effective, does not require additional resources, and is easy to implement.

Perhaps most importantly, patients reported high levels of satisfaction with Team Clinic. They felt more comfortable in the clinic and more comfortable asking questions, would recommend the clinic to others, and desired to return to Team Clinic for future appointments. These results suggest that adolescents may come to Team Clinic more willingly and regularly than they do to their regular appointments and that they may be more likely to ask for help when it is needed in this setting. Further study is needed to determine whether these findings translate to improved glycemic control during this challenging transition and, eventually, to a more successful transfer to adult medical care.

As pediatric care providers, we cannot cure adolescence, but, thankfully, it is only a temporary condition. If we keep our adolescents actively engaged in their medical care until they are developmentally ready to manage their diabetes (11), they may transition to the adult world and adult medical care system more successfully. The main issue for adolescents with type 1 diabetes is not

the eventual transfer to adult care; providing effective clinical care at this time, whether they are in the pediatric or the adult medical setting, should be our focus. Team Clinic may be one approach to improving care, and eventually outcomes, in our challenging adolescent and young adult population. Continued research investigating adherence, glycemic control, and frequency of follow-up with the Team Clinic model is needed.

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Duality of Interest

No potential conflicts of interest relevant to this article were reported.

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