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The Transition from Pediatric to Adult Diabetes Care Services

Kathleen M. Hanna, PhD, RN and

Home Address: 8650 Jaffa Ct. W Drive, Unit #35, Indianapolis, IN, 317-815-1447. Work Address: Indiana University School of Nursing, Indianapolis, IN, 46202, 317-274-1494

Jason Woodward, MD

Home Address: 5237 Ralston Ave, Indianapolis, IN 46220, 317-254-0908, Work Address: Riley Hospital for Children, 705 Riley Hospital Dr., #1601, Indianapolis, IN 46202, 317-944-4846

Kathleen M. Hanna: kathanna@iupui.edu

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The transition from pediatric to adult health care services is experienced by adolescents and emerging adults with chronic illnesses and special health care needs,^{1, 2} and it is often a challenging process for these youth.^{3–5} For example, there are long-recognized differences between pediatric and adult care services, with pediatric health care providers providing a strong developmental and family focus that does not always exist in adult practices.⁶ Youth with diabetes are also expected to transition from pediatric to adult diabetes services.^{7–9} This transition occurs for youth with diabetes at a time when they are undergoing great developmental change^{7, 10} and may occur within the context of many other situational changes, such as graduating from high school, moving out of parental homes, and beginning a job or enrolling in college.¹¹ Although many articles have discussed the transition in diabetes services^{12–15} as well as general transition principles for youth with chronic illness and special care needs,^{1, 2} diabetes services to facilitate this transition in services has not been well based upon research findings. Health care professionals would benefit from a synopsis of the current evidence, delineating the level of evidence, to guide practice and policy. In addition, this state-of-the-science discussion demonstrates the limitations of existing findings and will guide future research. Thus, we conducted a systematic review of the literature with the specific aims to: 1) identify the level of evidence and 2) describe the evidence on the transition from pediatric to adult health care services among youth with diabetes.

Methods

Literature Search

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA),¹⁶ developed by an international group, provides a guide for the search, screen, and inclusion procedures in systematic reviews. These are outlined in Figure 1 and discussed below. Literature was searched using the search engines of: CINAHL, Medline, PSYCHINFO, and the Social Science Index. The keywords were *diabetes*, *transfer of care*, and *transition in care*. Although readiness for transition is acknowledged as integral to the transition, it was not used as a keyword because the focus would then be more on individual readiness rather

than on the transition in services. Adolescents and young adults were not keywords because the search engines' parameters designated age groups. The search parameters were set to include adolescents, young adults, and/or adults. Because one search engine's age group parameter included 20-year-olds as adults, the parameter "adults" needed to be used and citations beyond emerging adults or young adults (over 30 years of age) were later screened out. In addition, search parameters limited searches to journal articles; written in English; and the years 1991 through June 20, 2012. Only journal articles were used so that they would have been peer-reviewed, a level of evaluation. The search was for a broad span of years because little research has been conducted in this area. The initial search yielded 172 citations. Next, additional articles not identified in the initial search were added, mostly from reference lists of identified literature as well as being known by the author. This yielded 49 additional citations. Duplicates (N= 61) were removed, leaving 160 articles to be screened. Initially, the titles and abstracts of these citations were read, deleting them if the focus was not on diabetes, the transfer from pediatric to adult care, and adolescents or young adults. Often the focus was on chronic illness and not specifically diabetes, resulting in exclusion of 63 citations. The decision to use only citations that focused upon diabetes rather than chronic illness in general was based upon our focus on unique elements of a condition (a categorical approach) rather than common elements across conditions, (a non-categorical approach).¹⁷ For example, outcomes such as glycemic control and diabetes ketoacidosis would be unique to this diabetes condition.

Finally, 97 articles were obtained and read in full, with 56 deleted because the focus was on chronic illness rather than diabetes or they did not address transfer from pediatric to adult care, did not specifically focus on adolescents or young adults, or presented the opinion of individuals. It is acknowledged that individuals authored some excellent reviews of the literature; however, only expert opinions representing organizations were kept because there would be a level of evaluation within the groups of experts. In addition, several articles representing organizations, but written for transfer of care for chronic illness in general, were not kept because they were not specific to diabetes. The final synthesis of evidence is based upon 23 quantitative studies, 16 qualitative and/or mixed qualitative and quantitative studies, and two expert panels representing organizations.

Guideline for Evaluation of Evidence

The American Diabetes Association (ADA) guidelines, categorizing evidence into four levels,¹⁸ was used to identify the level of evidence. Level A is the highest level, with evidence from randomized controlled trials (RCTs). These RCTs need to be well conducted with adequate power so results can be generalized to the greater population, in this case youth with diabetes. The RCTs may be from multicenter trials or from a well-conducted meta-analysis. Level B is the next level of evidence, that from well-controlled cohort studies. Level C is evidence from uncontrolled studies. Finally, Level E evidence is from expert consensus.

Results

Overall Evaluation of Evidence

There were no published studies that were experimentally designed and categorized as RCTs, Level A and no published studies categorized as well-controlled cohort studies, the B Level of evidence. Most of the evidence (95%) was from either quantitative (N = 23) or qualitative/mixed methods (N = 16) studies that were not well controlled, Level C evidence. Of these Level C studies, 27 were descriptive and 12 were evaluations of particular programs. Of the descriptive studies, 11 were qualitative or mixed qualitative/quantitative and 16 were quantitative. Descriptive studies, by design, often are not well controlled so that

a particular situation can be described. Of the evaluation of programs, five were qualitative or mixed qualitative/quantitative and seven were quantitative studies. No evaluation of programs used an experimental design or a well-controlled quasi-experimental design. Programs were evaluated through description of the program's outcomes, comparison of groups who experienced different programs, and pre- to post-evaluation of outcomes. The remaining articles (5%) were at Level E from expert panels.

Limitations of the studies need to be considered. First, the generalizability of the studies is limited. Small sample size is not a limitation of qualitative studies per se, which by design have small samples and purposive sampling, but results of such studies are not intended to be generalized. However, the low participation rates and relatively small sample sizes also limit generalizability of findings from descriptive quantitative studies. Participation rate was 16% in the study by De Beaufort;¹⁹ 51% by Channon;²⁰ and 68% by Eiser.²¹ Quantitative descriptive study sample sizes were as low as 41 youth in one by Frank,²² 43 by Channon,²⁰ 55 by Geddes,²³ and 61 by Masding.²⁴ Another limitation of the studies was the lack of full explanation of methods and data analysis to allow readers to judge the rigor of the methods. Except for the qualitative study by Sparud Lundin²⁵ noting that grounded theory was used, a specific qualitative approach was not identified in the studies. Although studies by Dovey-Pearce,²⁶ Greene,²⁷ Jones,²⁸ Rasmussen,²⁹ and Wilson³⁰ noted a thematic analysis, the description of qualitative data analysis was limited in the qualitative studies. The samples included various stages of development, representing adolescents,^{31–34} young adults,^{22, 23, 25, 27–29, 35–51} and adolescents and young adults.^{20, 21, 24, 26, 30, 52–57} In addition, the studies represented samples from various countries such as Australia,^{29, 37, 43, 53, 57} Canada,^{22, 41, 44, 45, 48, 49, 56} Germany,^{35, 42} Italy,^{47, 52} Spain,⁵⁰ Sweden,^{25, 46} the United Kingdom (UK),^{20, 21, 23, 24, 26–28, 30, 32–34, 36, 38, 39, 54} United States, (US),^{31, 40, 51, 55} and multiple countries.¹⁹ The diversity of countries adds to the potential generalizability of the findings; however, the diversity of health care systems is a potential confounding factor to the findings. Finally, a framework was identified in only four studies: developmental contextual framework by Dovey-Pearce;²⁶ professional support by Markowitz;⁴⁰ psychosocial development by Price,³³ and a development and transition framework by Wysocki.⁵¹

Studies Describing Youth's Perceptions

Youths' perceptions of the transition to adult services provide insight into difficulties with this transition of services and into differences between pediatric and adult care (See Tables 1 and 2). Youth report difficulties with the transfer in general,³⁰ particularly noting its abruptness.⁴⁵ Differences between pediatric and adult clinics reported by youth include: a longstanding relationship in pediatrics clinics versus impersonal consultations in adult clinics;²⁸ receiving more support and guidance in pediatric than adult clinics,^{45, 58} and a perception of being "lost in the shuffle" in adult clinics.⁵⁶ Although these youths' comments suggested a preference for pediatric clinics, others expressed a preference for adult care, noting that pediatric clinics "babied" them in contrast to adult clinics, which provided encouragement to be adults in the study by Visentin.⁵⁷

Youth also report difficulties with adult care services such as lack of time to discuss their diabetes management and to access health care providers (HCP) for advice,^{44, 45} as well as lack of information and resources.⁴⁴ Youth also noted general issues with clinic structure and organization such as appointments with different HCP at each clinic visit,²⁶ making appointments too far in advance of what is considered feasible for them,²⁶ lengthy waiting periods,^{26, 45} and having to make appointments too far in advance.²⁶ Finally, these youth see that it is a problem when HCP are lacking in skills, knowledge, or suitable attitudes related to youth.²⁹

Youth also have preferences regarding the care they receive. Care preference reported by youth were that care: be respectful in terms of privacy, confidentiality, and civility;^{26, 53} have continuity of HCPs;^{26, 27, 53} be coordinated between pediatric and adult HCPs;²¹ be individualized;^{26, 27, 33} be developmentally appropriate;^{26, 33} and be supportive.^{26, 28, 53} Specifically, youth want a good relationship with an HCP who continues supporting them when they are young adults.²⁸ In addition, youth want HCPs to provide information related to diabetes, new developments, emergency care, and phone advice.⁵³

Studies Describing Transition of Services

Early research reported when the transfer occurred, most likely as an index of readiness. There is no clear age for transfer, with typical age reported between 15 and 19 years of age,^{21, 22, 31, 35, 37, 44–46, 50} but a wide age range of between 12–20 years.^{21, 31, 45} These ages may reflect that HCPs are individualizing the transfer based upon their assessment of individual patient's readiness. However, it may also reflect policies of clinics.

The transfer is a challenge in ways such as not changing to an adult HCP, delaying adult care appointments, and changing providers. Estimates are that 9% – 37% of late adolescents and emerging adults are still attending pediatric clinics.^{19, 32} In addition, there is a delay in appointment in adult clinics after transfer from pediatric clinics. Depending on the sample, 18%–59% have not attended an adult clinic.^{21, 22, 56} with 27% – 31% delaying more than 6 months.^{44, 45} and with 7 months the typical delay in one study.⁴⁶ There are also indices of difficulties in establishing care, with around 50–52% changing providers after transfer,^{35, 42} 18% having no usual source of care,⁵⁵ 23% having only crisis-driven care,⁴³ and 19% reporting emergency room use.⁵¹ In addition, a minority of youth receive care from a non-diabetes specialist; 15% of youth in Australia reported receiving care from a local medical practitioner⁴³ and 22% of youth in the UK received care from a general practitioner.²⁰

Clinic attendance is a problem; on average, it is less than ADA guidelines of every-3-month appointments for adolescents⁹ or emerging adults with poor glycemic control,¹⁸ which is typical of this age group.⁵⁹ Attendance at all clinic appointments was 80% among 18–24 year-olds in study by Geddes,²³ and attendance at two or more clinic appointments in the past year was 88.9% among 18–22 year-olds in a study by Wysocki.⁵¹ When clinic attendance was examined pre- to post-transition of services, attendance decreased from 52% to 36% in the study by Johnston⁵⁴ and from 98% to 61% in the study by Kipps.³⁸ Rather than the portion attending appointments, some studies reported the number of clinic appointments. From pre- to post-transition of services, the average number of visits decreased from 8.5/yr. to 6.7/yr. post-transfer in a study by Busse³⁵ and from 3.6/yr. to 2.7/yr. in the study by Sparud-Lundin,⁴⁶ whereas the mean number of missed appointments increased from none to two in the study by Channon.²⁰

Clinic attendance has been examined in association with the transfer as well as diabetes outcomes. The evidence is conflicting in regard to glycemic control. For example, glycemic control did not differ at transfer in the study by Channon,²⁰ was worse pre-transfer for poor attenders in the study by Kipps,³⁸ was worse among poor attenders in the studies by Dyer³⁶ and by Frank,²² and had no relationship between appointment attendance before or after transfer in the study by Busse.³⁵ It needs to be noted that clinic attendance was conceptualized and measured differently in these studies. For example, clinic attendance in a year's period of time was calculated as the mean in the study by Dyer;³⁶ the patient was categorized as an attender if 75% of clinic visits were attended in the study by Channon;²⁰ the patient was categorized as a complier if one appointment was kept in the study by Frank;²² and attendance was categorized as good (1 missed visit), moderate (2 missed) or poor (3 missed) in the study by Johnston.⁵⁴

Studies Evaluating Transition Programs

Programs and/or services have been developed with multiple components to address issues related to care or transfer. Young adult and/or transition clinics had various components as follows: a Saturday morning clinic option and an adult care physician attending pediatric clinic in the study by Johnston;⁵⁴ appointment reminders and after-hours support service for sick day management in the study by Holmes-Walker;³⁷ an evening adult clinic held monthly with a team approach; a transition clinic held three times a year with discussion groups, joint pediatric and adult health care provider consultation, and letters summarizing the clinic visit sent to young persons as well as general practitioners in the study by Logan;³⁹ coordination of health care providers, focus on readiness, goal setting and contracting, and group and individual follow-ups in the study by Vidal;⁵⁰ a weekend residential program focused on becoming an independent adult in the study by Cuttrel;⁶⁰ and communication of expectation of transfer and privacy, introduction to an adult physician with collaboration between adult and pediatric physicians, and young adult-friendly clinics in the study by Vanelli.⁴⁷

Evaluation of these clinics and/or programs related to diabetes-related outcomes was done retrospectively, with comparisons pre- to post-clinic and/or program. It is not clear if such programs had an impact on clinic attendance. Clinic attendance, categorized as good (0 or 1 missed visit), moderate (2 missed), or poor (3 missed), was reported as good by 52% prior to transfer, with 36% reporting the same after the transfer in the study by Johnston.⁵⁴ Glycemic control appeared to be better after the programs. Prior to transfer to the Young Adult Clinic Program, 55% had poor control (HbA1c > 9.0%), and 26% had poor control post-transfer in the study by Johnston.⁵⁴ In the study by Logan,³⁹ glycemic control levels were better at the third clinic visit (HbA1c = 9.7%) than at the first clinic visit (HbA1c = 9.0%) in the program. Glycemic control significantly improved from pre- to post-programs in the studies by Vanelli⁴⁷ and Vidal.⁵⁰ There were other positive outcomes of these programs: Post-program there was a significant decrease in diabetic ketoacidosis admissions in the study by Holmes-Walker,³⁷ and there was a significant improvement in aspects of diabetes management (carbohydrate counting, insulin adjustments) in the study by Vidal.⁵⁰

There were also other programs that focused more on a specific element of the transfer. One such was a Navigation Program that provided systems navigation services, with support to deal with barriers accessing care.^{48, 49} First, the program was evaluated in terms of feasibility and acceptability and was reported to be used by the targeted youth.⁴⁹ In a second report,⁴⁸ the investigators compared two cohorts: Individuals in Cohort 1 were age 18, receiving the program as they graduated from pediatric care, whereas those in Cohort 2 were ages 19–25 and did not receive the program as they graduated from pediatric care. Fewer of Cohort 1 (11%) who experienced the program had dropped out of care than those in Cohort 2 (40%).

A structured versus unstructured manner of transition was compared in a study by Cadario.⁵² Transitions were categorized as an unstructured type when youth received only a letter, whereas the transitions categorized as structured provided youth with a transition coordinator, communication of expectation of transfer, coordination and continuity of HCP, and the last visit without parents. Outcomes were positive, with 100% of youth who experienced structured transition having an adult care clinic visit within a year of transfer, while only 31% of youth who experienced the unstructured transition had a visit. In addition, glycemic control significantly improved from pre- to one year post-transfer for those in the structured transition group, while glycemic control did not significantly improve for youth in the unstructured group.

Continuity of care with health care providers (HCP) was examined in relation to diabetes outcomes in the study by Nakhla.⁴¹ Pediatric providers' methods of transition of care were categorized as 1) without continuity when youth were transferred to a new physician and health care team or transferred to a new physician with no team and as 2) with continuity when youth were transferred to a new physician but with the same health care team, no change in physician or team, or a new team but remaining with the same physician. The outcomes were positive; youth who had continuity of care after the transition in services had a significantly decreased risk for diabetes-related hospitalization in comparison to those without continuity of care.

The most recent program was a support group for young adults with diabetes in a study by Markowitz.⁴⁰ This program was for young adults and involved five monthly professionally led support group sessions. This program did screen out participants who had un-managed mental illnesses, an element of control in the study. At the final group session, diabetes problems had significantly decreased and diabetes self-care was trending toward improvement, but not significantly. Clinic attendance did not change from pre- to post-support group program, and there was no relationship between changes in glycemic control and clinic attendance.

Some programs have been evaluated in terms of satisfaction and, overall, these programs are seen as positive. Participants were highly satisfied with the programs in the studies by Cuttrell,⁶⁰ Logan,³⁹ and Vanelli.⁴⁷ In addition, as noted above, the Navigator System was seen as useful in the study by Van Walleghe.⁴⁹

Level E Evidence Articles: Expert Opinion on the Transition of Services

There are two expert consensus statements providing Level E evidence (see Table 4). In summary, they recommend that the transfer be planned; there is collaboration among patient, family, and providers; there is preparation for self-management and for differences between pediatric and adult providers; and there is provision of support and resources such as a written summary and directory of health care providers with an interest in youth.^{8, 9}

Discussion

In summary, based upon this review of studies, there is minimal research evidence to guide the Clinical Nurse Specialist in developing policies and procedures for the transition from pediatric to adult diabetes services. Most of the evidence is at Level C, reflecting uncontrolled studies. This is not to say that the uncontrolled studies were of poor quality. By their nature, descriptive studies usually are not well-controlled because of the need to describe a situation without controlling it. However, reflecting early scientific effort in the area, some quantitative studies, had limitations such as low participation rates, small sample sizes, and lack of a full description of methods. No evaluation of programs used an experimental or quasi-experimental design that would be considered well controlled. It needs to be kept in mind that experimentally designed studies are challenging in a health care setting where the focus is on providing the best care to everyone and when randomization to control and experimental groups is difficult.

The scientific findings do indicate that the transition in services for youth with diabetes is a problem needing further research. However, the findings about the poorer diabetes-related outcomes associated with the transfer of services could possibly have other explanations. First, the transfer in services is seen as difficult by youth, with some not transferring to adult health care providers and having a delay receiving care in the adult clinics. Second, clinic attendance is a problem, with average attendance less than ADA guidelines.^{9, 18} However, factors other than the transition in services may explain the poor clinic attendance among

these youth such as those associated with developmental issues. For example, in comparison to adolescents, emerging adults tend to have fewer clinic visits in general. The estimated mean number of clinic visits per year is 3.6 for 11–18 year-olds;³² 2.2 for 20–28 year-olds;³² and 1.6 for adults averaging 28 years old.³⁶ In addition, a potential confounding variable that was not controlled was that these youth may have transferred to HCPs other than adult diabetes specialists; 15% of youth received care from a local medical practitioner in the study by Northam,⁴³ and 22% of youth received care from a general practitioner in the study by Channon.²⁰ There are also other possible explanations for poor glycemic control. It is known that glycemic control worsens over adolescence in studies of early to middle adolescents⁶¹ and early to late adolescents,⁶² with poor control peaking around 18–19 years,^{32, 63} and that it becomes better in young adulthood, by 22–24 years of age.^{32, 63} Further, there are different patterns of glycemic control documented by different researchers; among early to middle adolescents, one group had good and stable control and another had poor and deteriorating control,⁶⁴ and among middle to late adolescents and emerging adults, one group had moderate control, another had optimal control, and a third had deteriorating control.⁵⁹ Characteristics that contribute to these patterns may also contribute to clinic attendance; for example, the deteriorating control group had more missed appointments.⁶⁴

Some of the transition services that have been developed show promise for the future. Overall, these programs and clinics are seen as acceptable and useful. Many are addressing the many issues noted by youth in the qualitative studies. Because most of the programs have multiple components, it is difficult to determine which specific component contributed to a specific outcome or if all components are needed for positive outcomes. Further, other potential factors that could be associated with the improvements were not controlled in the studies. As noted above, glycemic control improves with age and age was not controlled. It is possible that other factors contribute to the poor clinic attendance. Adolescents and emerging adults are going through cognitive, emotional, and biological developmental changes,⁶⁵ as well as graduating from high school, moving out of parental homes, and going off to a job or college.^{66, 67} All of these could contribute to poor clinic attendance and other outcomes during the transition to adult services.

At the present time, Clinical Nurse Specialists can be guided by expert opinion related to care for youth with diabetes. Expert panels specific to diabetes recommend a planned transition to adult services that involves collaboration among patient, family, and providers; preparation for self-management; preparation for adult provider services; and provision of support and resources such as a written summary and directory of health care providers with an interest in youth.^{8,9} The recommendation for planning and preparation advocated by diabetes experts is consistent with best practices recently outlined by the American Academy of Pediatrics, the American Academy of Family Physicians, and the American College of Physicians Transitions Clinical Report Authoring Group.⁶⁸ In addition, many of the action steps recommended in this report address issues identified by youth with diabetes and their families in qualitative studies, such as lack of communication among providers, the “abrupt” process, and lack of time at the first appointment with adult providers.

Limitations of this review need to be considered. The potential bias of the author’s a priori readings that were added as additional sources to review is acknowledged as a limitation. However, this was weighed against the potential bias in not reviewing pertinent articles that were not identified with the keywords in the search. In addition, this synthesis reflects potential biases of the authors, who have been conducting research in the area of youth making transitions and providing transition care to these youth.

Conclusions

Expert opinion, an important component of nursing evidenced-based practice,⁶⁹ is the guide for policy and procedure in this context until more research is conducted. More research is needed to further understand factors that influence the transition in services and to guide development of experimental and quasi-experimental studies that are well controlled. Theoretical/conceptual frameworks or models are needed to guide understanding of and strategies to promote successful transfer. For example, little is known about the best time for the transition in services; however, theoretical writings on life events assume that the cumulative effect of multiple transitions is stressful and requires adaptation.⁷⁰ If this is the case, the transition in services would best occur at a time when these youth are not also graduating from high school and beginning work or enrolling in college. Practices and programs need to evaluate the effect of the individual components of transition care on patient satisfaction and clinical outcomes. It is essential that researchers design and implement rigorous research studies to identify specific transition services that promote improved clinic attendance, better glycemic control, and other important health-related outcomes for emerging adults with diabetes. One should keep in mind that science is in the beginning stages and there is little evidence to guide such trials. In addition, there are many challenges to doing intervention studies on this topic: It is difficult to randomize groups within a setting; it is difficult to do multiple-site studies where various clinical procedures would need to be the same; and this age group is difficult to follow given the many changes noted above that they are experiencing.

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Biographies

Dr. Hanna is Professor of Nursing at Indiana University. Her expertise is in the area of adolescent and family health with a specific interest in chronic illness. She conducts research in the area of transitions to young adulthood among youth with diabetes.

Dr. Woodward is an Assistant Professor of Clinical Medicine and Pediatrics at Indiana University and provides clinical care and research in a transition program for youth and young adults with chronic conditions: The Center for Youth and Adults with Conditions of Childhood (CYACC).

Figure 1.
Search, Screen and Inclusion Process

Table 1

Level C Evidence: Qualitative or Mixed Methods Descriptive Studies

Source, Design, Framework, and Methods	Findings
<p><i>Source:</i> Busse et al.³⁵ <i>Design:</i> Mixed descriptive (no specified qualitative approach) <i>Framework:</i> none <i>Methods:</i> N = 101 (out of 161) young adults > 18 years of age (M age = 22) in Germany; structured interview; and a priori categories for qualitative data analysis.</p>	<p><i>Age of transfer:</i> M = 18 years <i>Change in HCP after transfer:</i> 53 (52%) <i>Clinic attendance:</i> M = 8.5 visits/year prior to transfer; 6.7 visits/year post transfer <i>Pre- to post-transfer:</i> no statistically significant difference in clinic attendance and HbA1c. <i>Perceptions of transfer:</i> considered negative by 57% and criticized for lack of arrangements and information for transfer</p>
<p><i>Source:</i> Dovey-Pearce et al.²⁶ <i>Design:</i> Qualitative Descriptive (no specified qualitative approach) <i>Framework:</i> Developmental contextual <i>Methods:</i> N = 19 youth (16–25 years old) in UK; semi-structured interview; follow-up focus group; themes identified</p>	<p><i>Themes:</i> 1) Experiences of and 2) suggestions for services. <i>Descriptions:</i> youth noted the following as important: continuity of staff; care style adapted to age of patient; positive staff interactions (civility, rapport, listening, allowing choices, being non-judgmental, providing feedback, facilitation of coping, and holistic care). Problems with accessing services were related to transportation and advanced appointments.</p>
<p><i>Source:</i> Greene²⁷ <i>Design:</i> Qualitative descriptive (no specified qualitative approach) <i>Framework:</i> none <i>Methods:</i> N = 5 (18–26 year olds) in United Kingdom (UK); semi-structured interviews; field notes; and themes identified</p>	<p><i>Themes:</i> 1) supporting youth making healthy life choices; 2) supporting youth's social network; 3) code of conduct; 4) continuity with appointments; 5) giving advice incongruent with youth's need is unrealistic; 6) shock tactics by HCP increases stress; 7) diabetes groups help feel less isolated; 8) diabetes groups lessen stigma; 9) independence needs to be individualized; and 10) need for family support when there is diabetes fatigue.</p>
<p><i>Source:</i> Jones et al.²⁸ <i>Design:</i> Qualitative descriptive (no specified qualitative approach) <i>Framework:</i> none <i>Methods:</i> N = 16 (18–25 year olds); transferred to adult services in UK; interview; and thematic content analysis</p>	<p><i>Themes:</i> 1) changing impact of diabetes; 2) importance of good HCP relationships; 3) and need for continued support as young adults. <i>Perception of transition:</i> all saw as difficult where one moved from long-standing relationship in pediatric to impersonal consultations in adult clinics</p>
<p><i>Source:</i> Pacaud et al.⁴⁴ <i>Design:</i> Mixed (no specified qualitative approach) <i>Framework:</i> none <i>Methods:</i> N = 135 out of 372 youth transferred to adult clinic in Canada; mailed survey; and analysis of comments not given</p>	<p><i>Average age of transfer:</i> 18 years <i>Delay in care after transfer:</i> 27 % delayed care more than 6 months <i>Difficulty with transfer:</i> 50% had either a delay or loss in follow-up or self-reported problem. <i>Significant differences in transfer problems:</i> Those with problems more likely to see > 2 physicians compared with those without problems <i>Perceptions of transfer:</i> A few (% not given) perceived transfer positively --more efficient, greater awareness of complications and self-care responsibility while most (% not given) had negative comments -- feeling insecure as well as HCP not concerned, lacked of time to discuss management; lacked of care coordination, and lacked of physical exams.</p>
<p><i>Source:</i> Pacaud, et al.⁴⁵ <i>Design:</i> Mixed (no specified qualitative approach) <i>Framework:</i> None <i>Methods:</i> N = 79 out of 154 youth (M age = 21) transferred to adult care in Canada; mailed surveys; and analysis of comments not given</p>	<p><i>Average age of transfer:</i> 17 years <i>Delay in Care:</i> 31% reported greater than a 6-month between last pediatric and first adult care visit. <i>Loss to follow-up care:</i> 11% received care > 12 months post transfer. <i>Difficulties with transfer:</i> 52% reported problems or had delay in care > 12 months or no current care. <i>Perceptions of care:</i> some (% not given) perceived transition positively (no problems and more control over their lives) while some (% not given) perceived it negatively (abrupt, less accessibility and guidance); problems were lack of information and resources, lack of coordination between HCP, difficulty accessing HCPs for questions, and lengthy appointment waiting periods.</p>
<p><i>Source:</i> Rasmussen et al.²⁹ <i>Design:</i> Qualitative (no specified qualitative approach) <i>Framework:</i> none <i>Methods:</i> N = 10 youth > 18 years of age in Australia; semi-structured interviews; and identification of themes</p>	<p><i>Themes:</i> 1) access to HCP; 2) transition from adolescence to adulthood, and 3) transition into becoming a mother. <i>Transfer-related descriptions:</i> difficulties with adult care in clinics for both type 1 and 2 diabetes and that HCP do not have skills, knowledge or attitudes to deal with youth, leading youth to feel isolated.</p>
<p><i>Source:</i> Scott et al.⁵⁶ <i>Design:</i> Mixed descriptive (no specified qualitative approach) <i>Framework:</i> none <i>Methods:</i> N = 75 (out of 226) youth (17–25 year olds) with diabetes in Canada; mailed questionnaire; telephone interviews with a subsample of 19; Ethnograph Software used, but details of qualitative data analysis not given.</p>	<p><i>Type of clinics:</i> 89% pediatric diabetes clinic and 41% adult diabetes clinic. <i>Perceptions of clinics:</i> Pediatrics seen as positive (staff supportive, knowledgeable and created a positive environment) <i>Perceptions of transfer:</i> Negative in terms of sense of abandonment when relationships ended; being lost in shuffle; general dissatisfaction with adult clinic environment and services.</p>

Source, Design, Framework, and Methods	Findings
<p><i>Source:</i> Sparud Lundin ²⁵</p> <p><i>Design:</i> Mixed descriptive (grounded theory noted as qualitative approach)</p> <p><i>Framework:</i> none</p> <p><i>Methods:</i> N = 13 youth adults and parents; N = 2 pediatric and 2 adult clinics; N = 104 youths (18–24 years old) in Sweden; interviews; medical records; observations; and website chat data.</p>	<p><i>Care differences between pediatric and adult clinics:</i> received multidimensional support in pediatrics while became less visible in adult clinics; made less visits in adult care; glycemic control was poor and levels decreased over time and more visits associated with worse control; clinics with specialized transition programs were better with preparation and transition process</p>
<p><i>Source:</i> Visentin, et al. ⁵⁷</p> <p><i>Design:</i> Qualitative descriptive (no specified qualitative approach)</p> <p><i>Framework:</i> none</p> <p><i>Methods:</i> N = 21 diabetes HCP professionals and N = 10 adolescents (15–18 year olds) in Australia; interviews; and data categorized as concerns, claims and issues</p>	<p><i>Professionals reported</i> (% not given): concerned about youth becoming lost in system and subsequent increased risk for complications;</p> <p><i>Adolescents reported</i> (% not given): some concerned about transition and few understood differences between two services; some saw that pediatric care “babying” them and adult care encouraging them to be on own;</p> <p><i>Perceived differences between children and adult services:</i> role of parents, level of expected responsibility and support and medical approach to management</p>
<p><i>Source:</i> Wilson ³⁰</p> <p><i>Design:</i> Qualitative exploratory (no specified qualitative approach)</p> <p><i>Framework:</i> none</p> <p><i>Methods:</i> N = 23 (17–19 year olds) in college/university in UK; semi-structured interviews; and thematic analysis</p>	<p><i>Themes:</i> 1) balancing diabetes and education; 2) adverse diabetes management strategies at college; 3) reduced quality of life; and 4) problematic transition from pediatric to adult diabetes clinics <i>Transition difficulties:</i> keeping appointment, not getting advice, and lack of understanding from HCP.</p>

Note: all participants in samples were diagnosed with diabetes.

Table 2

Level C Evidence: Quantitative Descriptive Studies

Source, Design, Framework and Methods	Findings or Recommendations
<p><i>Source:</i> Bryden et al.³² <i>Design:</i> Descriptive longitudinal <i>Framework:</i> none <i>Methods:</i> N = 76 (11–18 years old) at baseline and N = 65 (20–28 years old) at follow-up in UK; medical records; and structured interview</p>	<p><i>Clinic attendance:</i> 3.6/year at baseline and 2.2 the year prior to follow-up. <i>Clinic setting at follow-up:</i> 9% pediatric clinic, 51% young adult diabetes clinic; 37% adult clinic.</p>
<p><i>Source:</i> Channon et al.²⁰ <i>Design:</i> Descriptive <i>Framework:</i> none <i>Methods:</i> N = 43 out of 84 youth transferred at 17 years in UK; medical records; and survey</p>	<p><i>HCP post transfer:</i> 50% to adult care same hospital and 22% to General Practitioner <i>Clinic Attendance:</i> Significantly more missed appointments 1st year in adult care (median = 2) than last year in Pediatrics (median = 0); Attenders (>75% rate) and defaulters (<75% rate) did not differ in age of transfer, presence of retinopathy, diabetes-related admissions, clinic attendance last year prior to transfer, and HbA1c last year prior to transfer.</p>
<p><i>Source:</i> Court⁵³ <i>Design:</i> Descriptive <i>Framework:</i> none <i>Methods:</i> N = 105 out of 152 youth (15–18 year olds) with diabetes in Australia; mailed survey</p>	<p><i>Youth reported needs:</i> 78% new developments; 51% condition; and 51% emergency care. <i>Important characteristics of physician:</i> 93% can talk with; 83% see regularly; 73% gives advice allowing youth to decide; 62% gives thorough physical check-up. <i>Important characteristics of health service:</i> 84% private and confidential; 70% minimal waiting time; and 58% informal. <i>Perceived best age for transfer:</i> 49% 17–20 years; 45%, any age to 25 years; and 6% prior to 17 years of age. <i>Perceived Readiness for Transfer:</i> 1/3 felt ready, 1/3 unsure, and 1/3 not ready.</p>
<p><i>Source:</i> De Beaufort, et al.¹⁹ <i>Design:</i> Descriptive <i>Framework:</i> none <i>Methods:</i> N = 578 diabetes HCP members of International Society of Pediatric Adolescent Diabetes from multiple countries; 16% response rate; questionnaire</p>	<p><i>HCP:</i> 87% of those < 12 years of age care from pediatric diabetologist; 30% of 12–15 year olds care from internists, adult diabetologist and general practitioners; 58% of 16–18 year olds care from adult specialist; and 37% of 18–25 year olds remain in pediatric diabetes clinics.</p>
<p><i>Source:</i> Dyer et al.³⁶ <i>Design:</i> Descriptive <i>Framework:</i> none <i>Methods:</i> N = 259 records and N = 82 (M age = 27) who were referred to adult clinics in UK; survey; medical records</p>	<p><i>Delay in care:</i> mean = 4.8 months when seen in adult clinic post transfer <i>Clinic attendance:</i> M number of clinic visit per year was 1.6; 40% had 1 clinic visit past year and 28% had two visits; 61% attended 75 % or more of their clinic appointments; 39% failed attend at least one clinic appointment past year.</p>
<p><i>Source:</i> Eiser et al.²¹ <i>Design:</i> Descriptive correlational <i>Framework:</i> none <i>Methods:</i> N = 69 out of 101 youth (15–25 year olds) in UK; medical records; survey</p>	<p><i>Average age of transfer:</i> 16 years <i>Clinic attendance:</i> 18.9% non-attendance rate over past year (calculation not described). <i>Youth reported difficulty with transfer:</i> little (rated 1.7 on 1–5 scale with 1 being not difficult) <i>Youth reported helpful services:</i> greater coordination and collaboration between pediatric and adult HCP (rated > 3 on 1–5 scale with 5 being more helpful) <i>Significant differences between adult and pediatric clinics:</i> pediatrics emphasized school and family more adult while adult emphasized exercise and blood glucose testing more than pediatrics.</p>
<p><i>Source:</i> Frank²² <i>Design:</i> Descriptive correlational <i>Framework:</i> none <i>Methods:</i> N = 41 out of 56 youth (M age = 22) after transfer in Canada; medical records; survey via telephone or mail</p>	<p><i>Mean age of transfer:</i> 18 years of age <i>Delay in care:</i> 76% reported compliance to follow-up (at least 1 diabetes appointment within 1 year of transfer) and 24% failed to comply. Non-compliant more likely to have diabetes-related hospitalizations; have poorer HbA1c, fewer clinic appointments year prior to transfer while noncompliant more likely to have greater number of hospital admissions post transfer.</p>
<p><i>Source:</i> Geddes, et al.²³ <i>Design:</i> Descriptive <i>Framework:</i> none <i>Methods:</i> N = 55 (18–24 years old) enrolled in universities in UK; medical records</p>	<p><i>Clinic Attendance:</i> 80% attended all arranged diabetes out-patient appointments</p>
<p><i>Source:</i> Kipps et al.³⁸ <i>Design:</i> Descriptive correlational <i>Framework:</i> none <i>Methods:</i> N = 222 medical records and 164 youth > 18 years of age transferred in UK; medical records; and structured interview</p>	<p><i>Clinic attendance:</i> pre-transfer, 98% attending at least every 6 month appointments and significantly declined to 61% by 2 years post transfer Mean HbA1c was higher during the 2 years pre-transfer for those who failed to attend clinics in comparison to regular attenders to adult clinics</p>

Source, Design, Framework and Methods	Findings or Recommendations
<i>Source:</i> Masding et al. ²⁴ <i>Design</i> Descriptive correlational <i>Framework:</i> none <i>Methods:</i> N = 61 (15–21 years old) in UK; medical records	Comparison of 2 groups of attenders: those who missed 1 or more appointments were older (17.3 versus 18) and had poorer HbA1c than those who attended each appointment.
<i>Source:</i> Mainous et al. ⁵⁵ <i>Design</i> Descriptive correlational <i>Framework:</i> none <i>Methods:</i> N = 1400 (17–>66 years of age in United States (US); National health & nutrition survey (NHANES III)	<i>Usual Source of Care:</i> Of those in 17–35 age group, 18% had no usual source of care and 18% had not usual site for care. Optimal glycemic control was associated with having a usual provider and/or site for care.
<i>Source:</i> Neu, et al. ⁴² <i>Design</i> Descriptive longitudinal <i>Framework:</i> none <i>Methods:</i> N = 99 after transfer in Germany; yearly survey for 10 years with completion rate of 74% year 1, 46% year 2, 29% year 5, and 0 year 10.	<i>Average age of transfer:</i> 22 years of age. <i>Change in HCPs:</i> Over 9 years, 50% had changed HCP at least once.
<i>Source:</i> Northam, et al. ⁴³ <i>Design</i> Descriptive longitudinal (baseline and 12 years follow-up) <i>Framework:</i> none <i>Methods:</i> N = 110 diabetics (M age = 21) and 76 controls (M age = 20) in Australia; questionnaires structured interview	<i>Care Providers:</i> 63% attendance with specialist; 15% care from local medical practitioner and 23% reported crisis-driven care
<i>Source:</i> Orr, et al. ³¹ <i>Design</i> Descriptive longitudinal <i>Framework:</i> none <i>Methods:</i> N = 82 adolescents transferred and followed for HbA1c for 1 year in US; medical records	<i>Average age of transfer:</i> 17 years <i>Pre- to post-transfer:</i> Glycemic control did not change from pediatric to adult care; females had higher glycemic control than males, but no difference in degree of change with transfer.
<i>Source:</i> Sparud-Lundin et al. ⁴⁶ <i>Design</i> Descriptive longitudinal <i>Framework:</i> none <i>Methods:</i> N = 104 youth (18–24 years old) followed after transfer in Sweden; medical records	<i>Average age of transfer:</i> 20 years <i>Delay in Care:</i> 7 month average time between last pediatric and first adult visit <i>Clinic attendance:</i> Significantly more while in pediatric care (3.6/year) than adult care (2.7/year) More clinic visit in adult care significantly associated with poorer HbA1c
<i>Source:</i> Wysocki et al. ⁵¹ <i>Design:</i> Descriptive <i>Framework:</i> development and transition <i>Methods:</i> N = 81 (18–22 years old) in US; biochemical assays; questionnaires and structured interviews	<i>Clinic Attendance:</i> 88.9% reported keeping 2 or more clinic appointment in past year <i>Usual source of care:</i> 90% reported seeing same Dr each time; 19.8% reported using emerging room in a 1-year period

Note: all participants in samples were diagnosed with diabetes.

Table 3

Level C Evidence: Program Evaluation Studies

Source, Design, Program, Framework and Methods	Findings or Recommendations
<p><i>Source:</i> Cadario et al.⁵² <i>Design:</i> Quantitative Quasi- Experimental Evaluation <i>Program:</i> unstructured (summary letter of medical history) versus structured (transition coordinator; provider collaboration and communication; and preparation) transfer. <i>Framework:</i> none <i>Methods:</i> N = 62 adolescent and young adults transferred; 32 in unstructured and 30 in structured manner in Italy; medical record and survey</p>	<p><i>Differences between groups:</i> time between last pediatric and first adult care visit significantly shorter for structured in comparison to unstructured group (100% of structured while only 31% of unstructured group seen by adult care within one year attending pediatric clinics); better HbA1c one year after transition for structured in comparison to unstructured group; and HbA1c in structured group significantly improved from pre to 1- year post-transition while it did not significantly change for unstructured group</p>
<p><i>Source:</i> Cuttrell et al.³⁴ <i>Design:</i> Mixed Descriptive Evaluation <i>Program:</i> Residential Weekend Transition Program (social support and education for an independent adult). <i>Framework:</i> none <i>Methods:</i> N = 11 who experienced program in the UK; knowledge questionnaire and evaluation “collectively and individually” (not described).</p>	<p><i>Positive Evaluation:</i> 100% found program useful and also reported to be fun (% not given) <i>Diabetes-related Outcomes:</i> Knowledge about transfer before weekend was average of 58% and after was 76%</p>
<p><i>Source:</i> Holmes-Walker et al.³⁷ <i>Design:</i> Quantitative Quasi- experimental Evaluation <i>Program:</i> Transition Care Young Adult Program (transition coordinator, appointment reminder system and sick- day management support) <i>Framework:</i> none <i>Methods:</i> N = 191 young adults in Australia who experienced program; medical records</p>	<p><i>Average age of transfer:</i> 19 years <i>Loss to follow-up:</i> 10 (5%) <i>Clinic Attendance:</i> 82% visit in last 6 months; 12% in last 12 months and 6% not seen for >12 months. <i>Clinic attendance and HbA1c:</i> better HbA1c for those who attended at least 2 appointments, there was a significant reduction in HbA1c at follow-up; and for subgroup with HbA1c > 11, those who attended at least 2 visits had significantly lower HbA1c after median 24 month follow-up <i>Diabetes Outcomes:</i> there was a significant reduction in admissions rates for DKA and days of stay for readmissions post program</p>
<p><i>Source:</i> Johnston et al.⁵⁴ <i>Design:</i> Quantitative Descriptive Evaluation <i>Program:</i> Young Person's Clinic Program (Saturday morning clinic; adult physician attended pediatric clinic; and transfer usually around school leaving). <i>Framework:</i> none <i>Methods:</i> N = 33 (16–25 years old) who experienced program in UK; medical records</p>	<p><i>Loss to follow-up:</i> 6 (18%) never seen in adult clinic over 2 year period. <i>Clinic attendance categorized as:</i> good if 1; moderate if 2, or poor if 3 missed appointments. <i>Prior to Transfer:</i> clinic attendance was: 30% poor, 18% moderate, 52% good prior to transfer; HbA1c was <7.6% in 21%, 7.6–9.0% in 24% and > 9 in 55%; and no relationship between clinic attendance and HbA1c <i>After transfer:</i> clinic attendance was good by 36%, moderate by 33% and poor by 30%; HbA1c was <7.6% in 37%, 7.6–9.0% in 37% and > 9 in 26%; and no relationship between appointment attendance and HbA1c</p>
<p><i>Source:</i> Logan et al.³⁹ <i>Design:</i> Mixed Descriptive Evaluation <i>Program:</i> Newcastle Diabetes Services Program (evening young adult clinic, team approach; transition clinic; discussion groups; joint pediatric and adult HCP consultation; summary letter sent to young person and to General Practitioner; and comprehensive approach addressing diet; psychological assessment, contraceptive and pregnancy planning. <i>Framework:</i> none <i>Methods:</i> N = 93 (18–24 years old) who attended clinic in UK; medical records; discussion group evaluation</p>	<p><i>Perception of Services:</i> Useful (% not given) <i>Clinic attendance:</i> 84% of clinic appointments made attended; 83% attended screening for complications visits <i>Diabetes Outcomes:</i> HbA1c at first clinic visit was 9.7% and was 9.0 by 3rd visit</p>
<p><i>Source:</i> Markowitz et al.⁴⁰ <i>Design:</i> Quantitative Quasi-experimental and Qualitative Descriptive Evaluation <i>Program:</i> Transitions in Care Support Group (professional-lead support group) <i>Framework:</i> social support <i>Methods:</i> N = 15 (M age = 26) in US; Problem and Self-Care Questionnaires; medical records; and subjective evaluation (not described)</p>	<p><i>Pre to post Program:</i> Problems decreased significantly; self-care increased significantly; and no significant change in number of clinic visits <i>Perceptions:</i> preferred care included multidisciplinary HCP who were knowledgeable and supportive; needs were for improved HCP communication; and dissatisfaction with care involved HCP with inadequate knowledge and little time.</p>
<p><i>Source:</i> Nakhla et al.⁴¹ <i>Design:</i> Quantitative Quasi-experimental Evaluation <i>Program:</i> Transfer with or without continuity <i>Framework:</i> none</p>	<p><i>Pre to post transfer:</i> 1) rates of diabetes-related hospitalizations did not increase significantly and 2) rates of acute hyperglycemia and diabetes-related hospitalizations increased significantly. <i>Methods of transition:</i> Categorized as 1) no continuity if transfer new physician and team or transfer to new physician with no team and 2) continuity if transfer to new</p>

Source, Design, Program, Framework and Methods	Findings or Recommendations
<p><i>Methods:</i> N = 1507 young adults followed until 20 years of age and N = 34 Pediatric Diabetes Management Centers in Canada; medical records; survey of pediatric providers</p>	<p>physician, but same team; no change in physician or team; or transfer to new team but remaining with same physician. For those transferred to new team with no change in Dr, 77% less likely to be hospitalized after transition compared those transferred to new DR with either new or no team. For those with continuity in care after transition, they had decreased risk for diabetes-related hospitalization while those who lacked continuity, were 4 times more likely to be hospitalized.</p>
<p><i>Source:</i> Price et al.³³ <i>Design:</i> Qualitative Descriptive Evaluation <i>Program:</i> Transition Pathway (planning for transition; telephone or e-mail follow-ups; and summary of medical history). <i>Framework:</i> Psychosocial development <i>Methods:</i> N = 11 who experienced program within 3 months of transfer to youth clinic in UK; semi-structured interviews; analysis using a thematic framework</p>	<p><i>Themes:</i> 1) transition pathway process (valued and seen as integrated with clinic routine), 2) experience an organization of transfer (for all not memorable except for 1 who was apprehensive), 3) organization of services (differences in clinics not eased by TP process), 4) information and education (related to alcohol and drugs was valued, 5) the healthcare consultation (valued consistency and collaboration); and 6) need for inclusive services (developmentally appropriate and individualized to needs).</p>
<p><i>Source:</i> Vanelli et al.⁴⁷ <i>Design:</i> Quantitative Quasi-experimental Evaluation <i>Program:</i> Uninterrupted Procedure (gradual transition procedure, expectation of transfer communicated; introduction to adult physician; jointly manage care (pediatric and adult physician); pediatrician attending first adult visit; and continuity of adult HCP. <i>Framework:</i> none <i>Methods:</i> N = 64 who experienced procedure (M age = 21) in Italy; telephone interview; medical records</p>	<p><i>Pre-post transfer:</i> Better glycemic control post than pre-transition. <i>Clinic attendance:</i> 100% attendance first year of transition, but significantly declined 2nd year. <i>Satisfaction:</i> 94% satisfied with transition; 100% with information received; 92% with introduction to adult physician; and 100% with pediatrician attending first adult visit. <i>Dissatisfaction:</i> 86% with inability to communicate HbA1c results at adult clinic visit (which was done at pediatric visit)</p>
<p><i>Source:</i> Van Walleghem et al.⁴⁹ <i>Design:</i> Mixed Descriptive Evaluation <i>Program:</i> The Maestro Project (transitional support and health care systems navigation services) <i>Framework:</i> none <i>Methods:</i> N = 323 in Canada who experienced program; project records; evaluation questions; thematic and content analysis</p>	<p><i>Feasibility and acceptability:</i> 127 youth requested community contacts for assistance with access to care, education or optometry services; there were 46 referrals to specialists and 34 to family physicians; 121 contacts to reconnect with diabetes education, 29 for optometrists; and 111 youth contacted program 203 times for other information. Thematic and content analysis findings not reported.</p>
<p><i>Source:</i> Van Walleghem et al.⁴⁸ <i>Design:</i> Quantitative Descriptive Evaluation <i>Program:</i> The Maestro Project (transitional support and health care systems navigation services). <i>Framework:</i> none <i>Methods:</i> N = 82 who had assistance of the navigator when they transitioned (cohort 1) and N = 64 who did NOT have initial support of navigator when transitioned (cohort 2); medical records; surveys</p>	<p><i>Clinic attendance:</i> among cohort 2, 60% had at least 1 medical visit prior to project and 73% had after while among cohort 1, 95% who had at least 1 medical visit before and 89% after. <i>Delay of Care:</i> 33% of cohort 1 and 42% of cohort 2 reported difficulties with establishing regular follow-up with adult care <i>Satisfaction:</i> 100% of group 2 and 78% of group 2 perceived need for project <i>Use of Project:</i> facilitated 374 referrals and were contacted 515 times for information</p>
<p><i>Source:</i> Vidal et al.⁵⁰ <i>Design:</i> Quantitative Quasi-experimental Evaluation <i>Program:</i> Therapeutic Education (coordinated transfer visits; initial adult care visit had comprehensive assessment visit by Dr and nurse; agreement established related to diabetes management goals; group session follow-ups; and individual visits) <i>Framework:</i> none <i>Methods:</i> N = 80 after transfer in Spain; questionnaires; medical records</p>	<p><i>Use of Program:</i> 72 of 80 completed program <i>Baseline to 12 months later:</i> Significant improvement in carbohydrate counting and portion performing insulin adjustments based on 3 or more days of glucose monitoring; significant decrease in glycemic control and a significant increase in body weight and increase in knowledge</p>

Note: all participants in samples were diagnosed with diabetes.

Table 4

E Level of Evidence: Expert Opinion Articles

Source, Outcome and Experts	Recommendations
<p><i>Source:</i> Peters et al.⁸ <i>Outcome:</i> recommendations, specific to transfer of service <i>Experts:</i> panel of experts in diabetes; members from ADA, American College of Osteopathic Family Physicians, American Academy of Pediatrics, American Association of Clinical Endocrinologists, American Osteopathic Association, the Centers for Disease Control and Prevention, Children with Diabetes, The Endocrine Society, International Society of Pediatric and Adolescent Diabetes, Juvenile Diabetes Research Foundation International, Pediatric Endocrine Society</p>	<p>HCP are recommended to:</p> <ul style="list-style-type: none"> • Collaborate with patient and family to prepare for transition in services • Prepare youth for diabetes care responsibility • Prepare youth for differences between pediatric and adult care • Provide written health summary to patient and adult HCP • Recognize vulnerability of and provide support to youth related to difficulties with health care utilization, management and psychosocial issues • Provide referrals to adult HCP that is match with needs of youth • Empower youth with links to resources for care • Provide individualized and developmentally appropriate care • Evaluate and treat youth for disordered eating and affective disorders • Follow every 3-month clinic visit schedule • Screen for complications • Assess for complications • Discuss health care issues of youth related to sexual behavior, alcohol and drug use; smoking and driving • Ensure ongoing primary care received that is separate from diabetes specialty care
<p><i>Source:</i> Silverstein et al.⁹. <i>Outcome:</i> ADA Guidelines for Care Statement for Youth with Diabetes <i>Experts:</i> panel of experts in diabetes convened by ADA</p>	<p>General recommendations for care of adolescence include one recommendation specific to transfer of services: Plan and negotiate the transition, involving the patient, the family, and the pediatric and adult HCPs</p>