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Development, pilot implementation, and preliminary assessment of a transition process for youth living with HIV

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ABSTRACT

Purpose: To describe the development and pilot implementation of a transition process for youth living with human immunodeficiency virus (HIV) and to assess the perceptions of the process among youth living with HIV (YLHIV), their caregivers, and clinical staff.

Design and methods: A multidisciplinary core planning team developed a transition planning framework and process. With the assistance of the appropriate hospital departments, we created educational material for patients and caregivers and a flowsheet for documentation in the electronic medical record (EMR). Staff were trained on implementation of the process and documentation in the EMR. To assess the process, we surveyed staff, YLHIV, and caregivers for feedback.

Results: Our transition process was informed by our goal to provide transition support that could respond to a variety of patient factors. We developed a process focused on four stages: 1. Introduction to Transition, 2. Building Knowledge and Skills, 3. Growing in Independence, and 4. Adult Care Ready. Each stage contains competencies for the patient and tasks for the care team. The pace of proceeding through the stages is determined by completion of competencies rather than patient age. Results from youth and staff showed that the transition process and informational material were helpful.

Conclusion: We developed a transition process for YLHIV and implemented this process in an HIV clinic. Initial survey data shows that youth, caregivers, and staff found this strategy helpful.

Practice implications: This pilot process may serve as a source of guidance to other clinics seeking to establish their own transition process.

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Introduction

In the United States (US) the prevalence of perinatally acquired HIV is declining, but newly acquired HIV infections in youth have remained stable. In 2019, 21% of new HIV infections were in youth aged 13–24 years. When compared to adults, youth struggle more to remain in care and achieve viral suppression. The overall US HIV viral suppression rate is 56%, but in youth it is only 33% (Centers for Disease Control and Prevention, 2022a). Achieving and maintaining viral suppression is required for the best health outcome for the patient and significantly reduces risk of transmission to others.

Abbreviations: HIV, Human immunodeficiency virus; YLHIV, Youth living with HIV; EMR, Electronic medical record; AAP, American Academy of Pediatrics; US, United States.

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Engagement and retention in care over time is a vital part of achieving viral suppression. Regular access to HIV services and antiretroviral therapy improve viral suppression. Retention in care is consistently poor among youth diagnosed with HIV, with CDC estimating in 2018 that only 58% of youth living with HIV (YLHIV) were regularly seeing an HIV provider (Centers for Disease Control and Prevention, 2022b). In 2017, 48.6% of deaths of YLHIV were attributable to HIV, which is higher when compared with older age groups (Bosh et al., 2020).

The challenges that YLHIV face are amplified by the need for a transition from pediatric to adult health care. The transition to adult health care is defined as “the purposeful, planned movement of adolescents and young adults with chronic physical and medical conditions from child-centered to adult-oriented health systems” (Blum et al., 1993). The transition process may or may not include a transfer to an adult practitioner, but should include a move to youth assuming responsibility of their care whether or not they transfer (GotTransition, 2022). A number of organizations have published general guidance on the proper approach to the transition to adult care (Blum et al., 1993;

GotTransition; White & Cooley, 2018). The American Academy of Pediatrics (AAP) Policy Statement *Transitioning HIV-infected Youth Into Adult Health Care* also provides high-level guidance to clinicians for assisting YLHIV as they transition to adult health care (*Transitioning HIV-Infected Youth Into Adult Health Care*, 2013). These statements emphasize several common features, such as starting the transition discussion early, addressing transition regularly during the process, and ensuring a safe handoff to the adult provider when this is needed. However, studies translating this high-level guidance to the specific needs of YLHIV are few in number (Gilliam et al., 2011; Maturo et al., 2011; Tanner et al., 2018; Wiener, Battles, Ryder, & Zobel, 2007), making it difficult to know how to address transition in this population.

The objective of this study was to develop a transition process for the specific needs of YLHIV, pilot the process in an HIV clinic, and assess the initial acceptability of the process for clinical staff, patients, and caregivers.

Methods

This process was developed and implemented in the Family AIDS Clinic and Educational Services Program (FACES), a Ryan-White funded HIV clinic based at Nationwide Children's Hospital, an academic medical center. The clinic provides care for people of all ages living with HIV, serving 450 unique patients each year. Though located in an urban setting, patients from a large catchment – including urban, suburban, and rural areas – are seen in the clinic because of the specialized services offered.

The population of interest were YLHIV ages 13 to 24 who were aware of their diagnosis. Some youth who acquired HIV through perinatal transmission may not be aware of their diagnosis at a younger age, and those who were not aware of their diagnosis were not included in this study. We also excluded anyone who was unable to read and write in English, as the survey was only in English only at the time.

Prior to the implementation of the new transition process, the approach to transition for youth was inconsistent. Most transition education was provided by a nurse or social work case manager, which could include self-management skills and other necessary transition knowledge but lacked a formalized plan, and youth would transition with differing knowledge bases. The process, which typically included input from youth and caregiver, was often brief and focused on the transfer from one of the pediatric providers in the clinic to one of the adult providers when it was felt that the patient warranted more adult related care. Patients were able to stay with their case manager at the clinic during and after their transition but would transfer to an adult clinician (MD or NP) within the same clinic. Adult clinicians expected established patients to have basic knowledge of HIV, self-management skills and be able to complete a visit independently. Youth acquiring HIV in later teens or early adulthood we most often seen by an adult clinician, with no formal assessment to ensure they could be independent in their care. HIV education was provided to all new patients by clinicians and case managers regardless of age.

Development

To begin development of the process, a core team from the FACES clinic, representing physicians, nurses, and social workers met to determine the goals and general structure of the process, with one of the authors (L.H.) serving as a consultant expert in transition. As a clinic that provides care across the lifespan, the team recognized that the transition process would not have to place as much emphasis on the transfer to a new clinic when considering the transition process for patients. Instead, the focus of the process was developing a strategy to ensure that youth had the requisite skills and knowledge to manage their HIV independently and that the team had a systematic way to support and educate patients as they acquired that set of skills and knowledge.

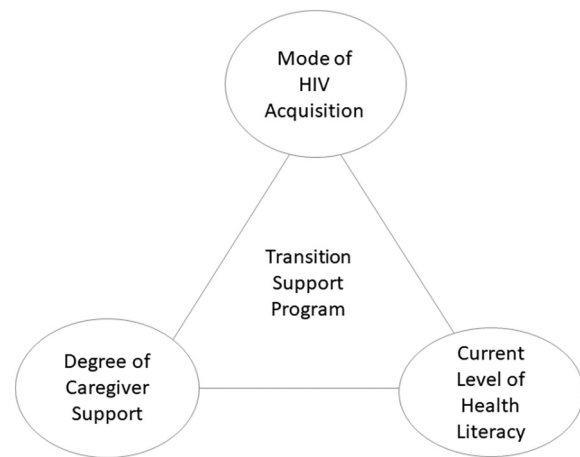


Fig. 1. Theoretical framework for the transition support program.

Using the Six Core Elements of Transition from GotTransition.org (GotTransition, 2022) and the AAP Policy Statement *Transitioning HIV-Infected Youth into Adult Health Care* (*Transitioning HIV-Infected Youth Into Adult Health Care*, 2013) as guides, the core team identified the patient and family factors that would influence how the transition process was addressed. These included the way in which the youth had acquired HIV (perinatally or later in life) and whether the youth's caregivers were actively involved in their care or not. The team also felt that the process needed to be flexible because youth would be entering their transition process at a variety of ages – perhaps 13 or 14 for youth with perinatally acquired HIV or a few months after diagnosis for an older adolescent with newly acquired HIV. Moreover, youth would have varying levels of health literacy when their transition process started. Having identified the relevant specific patient factors for the transition process to consider, the core team developed a Transition Planning Framework (Fig. 1) to lay out visually the key factors that the development team would need to consider when developing the transition process.

The development team wanted to ensure that the transition process used in the clinic could meet each patient's needs when staff initiated formal discussions of transition. The team determined that a transition process focused on stages of competencies without set start and end dates was the most productive way to account for the flexibility that patients needed. We developed a transition process with 4 stages: 1) Introduction to Transition, 2) Building Knowledge and Skills, 3) Growing in Independence, and 4) Adult Care Ready. The use of stages without set start and end dates was critical in providing the flexibility that staff felt was needed in the process. A younger teen with perinatally-acquired HIV may need to spend months or years in the "Introduction to Transition" stage, whereas an older teen or young adult may move through that stage in one visit. Either is acceptable, as long as it addresses the tasks of the stage and competencies are met.

The development team also established which aspects of transition would be addressed in each stage and how the team would determine that youth were ready to move to a new stage in the process. Examples can be found on [Table 1](#). At each stage, youth would have to demonstrate competencies to the care team, such as being aware of their HIV diagnosis in the Introduction to Transition stage and completing a medication refill request in the Growing in Independence stage. While youth had to be aware of their diagnosis for inclusion in the study, we included informing youth with HIV of their diagnosis in the "Introduction to Transition" stage in anticipation of using this process with youth after the study was over when having such discussions may in fact be the beginning of the transition journey for our patients with perinatally acquired HIV.

The care team was responsible for providing an educational curriculum with each stage that supported the competencies and help move

Table 1
Example competencies and team tasks for the transition planning stages.

Stage	Example Competencies	Example Team Tasks
Introduction to Transition	- Awareness of HIV diagnosis - Understands importance of privacy aspects relating to HIV diagnosis	- Disclose HIV diagnosis to patient and/or coach parent on this task - Direct the visit towards youth, rather than parents
Building Knowledge and Skills	- States medical history - States current medications and regimen	- Begin HIV education - Medication adherence strategies
Growing in Independence	- Ability to complete a medication refill request - Expresses future goals	- Basic insurance education - Sexuality discussion
Adult Care Ready	- Carries a copy of their insurance card and a valid ID - Makes an appointment with an adult provider	- Family planning education - Discussion of healthy relationships - Transfer of care letter complete

patients through the transition stages. This educational curriculum was outlined for staff as educational tasks that needed addressed. For example, during the Building Knowledge and Skills stage, the care team would address medication adherence strategies. The team agreed that youth could not move to a new stage until the competencies and team tasks of the current stage were complete. In order to maintain flexibility, we did not assign specific roles regarding these tasks to specific care team members.

The core team then developed educational materials for patients and their caregivers to introduce the idea of transition and its importance as well as explain how the clinic would be supporting youth and caregivers during the transition to adult care. These materials were developed to support all YLHIV cared for in the clinic and reflect the stages that would be involved in the process, without reference to ages or specific timing to be supportive of the wide variety of transition needs experienced by the patients and their families. We used an iterative process to collect feedback from all members of the core team to ensure that the materials would be clear and useful. The key feature of these materials was a booklet that included a “Journey to Managing My Health Care” to highlight for youth that they would, over time, be assuming more of the responsibility for their health care and how the team would support them in this effort (Supplement 1). The booklet also contained important phone numbers, information about the legal changes that occur with health care at age 18, tips for scheduling and managing appointments, and an area to take notes. Because our patients may or may not have shared their medical information with others, all materials were intentionally written without reference to HIV, medication names specific to HIV care, or the FACES clinic name to protect the confidentiality of the patients. Materials were reviewed by the hospital marketing and education departments to ensure adherence with hospital policies and appropriateness of the reading level of the language in the materials.

To track each patient's progress through the transition stages, we worked in collaboration with the EMR support team to develop a flowsheet within our EMR. This customized tracking system was visible to all members of the care team and flagged in the “care gaps” section if it had not been started. The flowsheet identified stages to ensure that youth were completing competencies and staff were addressing team tasks. At future appointments, previously started and completed tasks/competencies could be easily identified within the flowsheet, so providers and staff could move to next steps rather than being duplicative.

The resulting process thus effectively incorporated three of the Six Core Elements described by Got Transition: Transition Policy, Transition Tracking, and Transition Planning (GotTransition, 2022).

YLHIV did not participate in the development process. The clinic does have a consumer advisory board, but historically board meetings are not well-attended, and so we were concerned that obtaining feedback via that process would not be reflective of the clinic population at large. To help ensure that our process and materials would be well-received by YLHIV, we adapted previously developed materials that had been vetted by youth with other chronic illnesses and were regularly in use in other clinics due to how helpful patients and families found them to be.

Implementation

Before the transition process and materials that the core team had developed could be deployed in the clinic, the entire FACES clinic staff required training in the definition and purpose of transition and its importance for youth, and what the materials contained and how to use them in the context of the visit. They also needed training in how to use the tracking system in the EMR. Trainings were completed in December 2020 via video conference calls, one for physicians and one for non-physician staff. The slide deck from these presentations was also available for all clinic team members to review after the presentations. Implementation began in January 2021.

Since this was a new process, all patients 13–24 years who were scheduled for appointments were identified at the beginning of the week so staff was aware who should begin the transition process. During patient visits, care team members would introduce the transition process to eligible patients (i.e. ages 13 to 24 and aware of their HIV diagnosis) and caregivers using the education materials developed for this purpose. At the end of the visit, the care team would document the competencies the patient completed, and the team tasks completed by the care team at that visit. This documentation would then allow the care team to extend the transition discussion at the next visit based on what was completed at the prior visit.

Process assessment

We sought to assess the transition process training and the clinic transition process for clinical staff, as well as the transition process for patients and caregivers. We did this through a set of surveys: one after staff completed training, one after staff had been using the transition process for about 6 months, and one for patients and families after their first visit where a transition discussion under the new process occurred. This set of surveys provided a broad set of initial feedback about the transition process to allow the clinic to make any needed adjustments.

The surveys were developed by the authors and then reviewed by the core team for feedback and to ensure clarity. The goal of the surveys was to get both specific information, such as whether or not a patient received the patient education booklet, as well as general impressions, such as whether a parent found the transition discussion to be helpful and how comfortable staff were with having a transition discussion with patients and families. The training feedback survey had 8 questions, the staff transition process feedback survey had 18 items, the patient feedback survey had 10 items, and the parent feedback survey had 12 items.

We surveyed clinical staff after the training was completed and six months after we implemented the transition process in order to receive feedback both on the training itself and on how the process was going in clinic. We surveyed patients and caregivers right after their initial transition discussion in clinic on the same day of the clinic visit to gather information on their experiences of the transition discussion.

Prior to any survey administration, all potential participants were provided the opportunity to participate in the study evaluating the transition process. Care team members, caregivers, and YLHIV age 18 and over provided their consent to participate before completing any

surveys. YLHIV under the age of 18 provided their assent, and consent was obtained from their legal guardian.

This study was approved by the Nationwide Children’s Hospital Institutional Review Board. All surveys were completed in REDCap. As part of the ethical considerations of this study, we decided to use the new transition process with patients and families whether or not they agreed to participate in the study. We felt that it was important to address this gap in patient care whether or not the patients and families opted to be part of the research.

Results

A total of 16 patients, 5 caregivers, and 15 clinical staff consented to participate. We had a total of 67 eligible patients, of whom 32 didn’t attend appointments during the initial rollout of the process. Of the 35 patients who did attend appointments, 19 did not participate in the study for a variety of reasons, including declining to participate (n = 5) and competing clinical needs (n = 5) (Fig. 2). We did not track the number of patients who attended appointments with a caregiver, so we do not know how many eligible caregivers we approached for the study. There are 15 staff in the clinic.

We received feedback from 15 patients, 5 caregivers, and 10 clinical staff members at baseline and from 7 clinical staff members at the 6-month follow-up. Demographic characteristics for patient participants can be found in Table 2. Clinical staff participating in the initial survey included infectious disease clinicians (either physician or nurse practitioner) (n = 4), social work case managers (n = 2), and nursing case managers (n = 4).

Provider and staff training

Of the 10 surveys that were completed regarding the training, the providers and staff felt the education was necessary to learn more

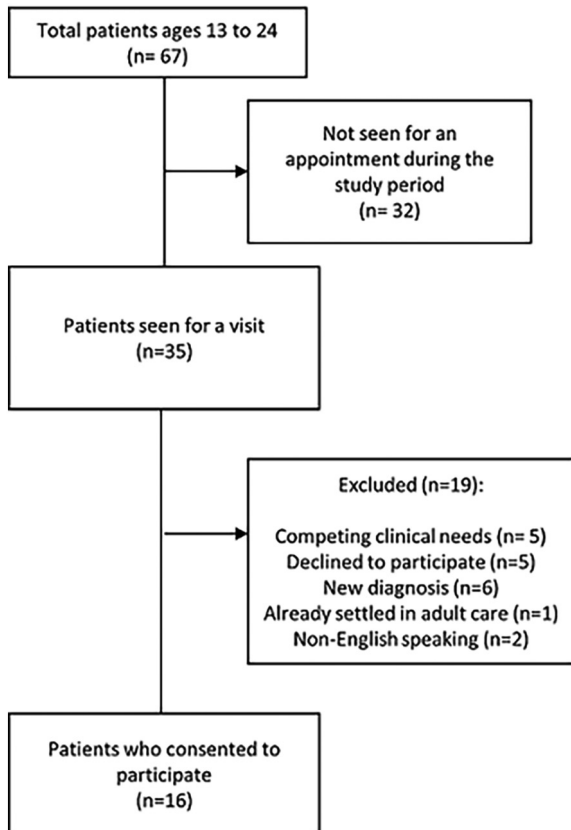


Fig. 2. Patient participation flow chart.

Table 2
Youth characteristics.

Characteristic	N (%) (total n = 16)
Age (years)	
13–17	6 (38)
18–24	10 (62)
Gender Identity	
Male	7 (44)
Female	8 (50)
Gender Fluid	1 (6)
Race	
Black	9 (56)
White	4 (25)
Biracial	3 (19)
HIV acquisition	
Perinatal	10 (62)
In adolescence	6 (38)

about transition and how to utilize the tools of the process. Seventy percent of participants noted the importance of having a formal process in place to better support the patients and staff when discussing transition. An important feedback point was the delegation of tasks (i.e., which care team member was responsible for which task). Other suggestions included using interactive case examples to improve training and utilization of the EMR flowsheet.

Adolescent patient survey feedback

Fifteen of the 16 consented patients completed the initial survey (Table 3). All 15 patients expressed that at least one clinical staff member discussed transition with them at the visit and most patients (n = 11; 73%) identified that the discussion was held by the physician. The majority of patients (n = 13; 87%) received the transition pamphlet, and 47% (n = 7) felt this pamphlet was either extremely or very helpful and 33% (n = 5) felt it was moderately helpful. Comments from participants included finding transition stages and the path to transition (the visual aide in the pamphlet) helpful as well as the tips of what to bring to an appointment. After their transition discussion at their visit, 87% (n = 13) felt they now knew more about transition. Comments included that they learned that transition could be less intimidating, how to make appointments, how to be more independent in their care, and “a whole lot.”

Caregiver survey feedback

Five of the 5 consented caregivers completed the initial survey. All responded that transition was discussed at the appointment and that they received the parent education material. Four of 5 responded that

Table 3
Youth feedback results.

Survey Question	N (%) (n = 15)
Clinical staff member discussed transition at visit	
Yes	15 (100)
No	0 (0)
Received transition pamphlet at visit	
Yes	13 (87)
No	2 (13)
Helpfulness of transition pamphlet	
Extremely helpful	3 (20)
Very helpful	4 (27)
Moderately helpful	5 (33)
Slightly helpful	1 (7)
Not helpful at all	0 (0)
Unanswered	2 (13)
Better understanding of transition after visit	
Yes	13 (87)
No	1 (6.5)
Don't know	1 (6.5)

the material helpful and 1 of 5 did not respond. Caregiver feedback on what they learned included better understanding of how to help their child become independent, need for photo identification, and importance of child learning to make their own appointments.

Provider and staff feedback after 6 months

A total of seven (7) clinical staff described their experiences with using the transition process materials after it had been in place for 6 months, including 3 physicians, 2 nurses, 1 social worker, and 1 nurse practitioner. Clinical staff experience was variable. Most ($n = 4$) had not used the transition road map. However, among those who had used it ($n = 3$), they reported instances of discussing the roadmap in a variety of scenarios: a) with patients only ($n = 2$), b) with parents only ($n = 1$), c) with both the patient and parent together ($n = 2$), and d) with the patient and parent separately ($n = 1$). One provider was regularly using the road map, having discussed it in an estimated 16 to 20 clinic visits over the first 6 months of the process.

Conversely, most providers ($n = 4$; 57%) had given the guardian education materials on transition to caregivers during visits, and most ($n = 4$; 57%) felt comfortable or very comfortable discussing this material with caregivers, while the others ($n = 3$; 43%) were unsure about their comfort level with discussing transition. No providers felt that patients or caregivers were unreceptive to the transition discussion. However, half ($n = 3$) were unsure if youth were receptive or not and most ($n = 4$; 67%) were unsure if caregivers were receptive or not to the transition discussion.

Discussion

Here we present the development, pilot implementation, and acceptability assessment of a transition process for YLHIV. We found that patients and caregivers felt the transition process was helpful. Eighty-seven percent of YLHIV felt that they knew more about transition after the discussion with a clinician/staff member. The majority of both YLHIV and caregivers felt the printed material was helpful. Most providers (70%) noted that having a structured transition process was important after completing training on the process, and most (4/7) felt comfortable using the transition education materials that were developed.

We relied on the general guidance regarding transition that has been previously published, including the Six Core Elements from *Got Transition* (GotTransition, 2022), the general AAP guidance regarding transition (White & Cooley, 2018), and the AAP guidance on transition focused on YLHIV (Transitioning HIV-Infected Youth Into Adult Health Care, 2013). In particular, our process focused on the elements of having a Transition Policy, Transition Tracking, and Transition Planning, which for the FACES clinic included heavy focus on education and skill-building. We chose these particular areas as the planning team felt they were the areas of greatest need for our clinic and patients. Other studies have similarly chosen to focus on a subset of the Six Core Elements, rather than taking on all six at once (Jones et al., 2019; Lestishock, Nova, & Disabato, 2021; Volertas & Rossi-Foulkes, 2017). As such, this transition process describes another option for clinics considering efforts to improve transition through a formal process that centers on patient skill building and competency, to promote independence in care.

We chose to use an objective assessment of health knowledge and skills through a skills list verified by either the social worker, case manager or physician/nurse practitioner rather than a self-reported transition readiness assessment. Many of the readiness assessment measures are general, and as such miss key knowledge and skills for YLHIV, such as learning how to disclose the HIV diagnosis to sexual partners and understanding prevention strategies to decrease transmission to others. While readiness assessments may provide useful additional information in future improvements to this process, the current process serves as a core transition process that the health care team, patients,

and caregivers found helpful and addresses the key concerns that the core team identified during development.

The creation of the transition framework was a key component of the successful implementation of the project. During development, core team members raised important concerns about how different patient scenarios would require a different approach, as previously noted in the development section. At the same time, a structured process was needed to ensure that transition was systematically addressed with all patients and so that the care team could collectively understand where any given patient was in their transition process. The framework provided a common mental model that informed how the process was developed and implemented in clinic, such as the use of a stages rather than ages and both youth- and caregiver-directed materials. As such, the process is built to support patients who have a variety of needs with respect to their transition to adult health care. For clinics and programs who have not yet created highly structured transition processes, developing a framework for addressing transition in their patient population may be a helpful way to start.

Our process is tailored patients to YLHIV, in that we include within the stages several tasks that are HIV-specific in the transition process, like disclosing an HIV diagnosis to a romantic partner. At the same time, we recognized that some patients may not want to have their diagnosis publicized via our education materials and so removed reference to an HIV diagnosis from the education materials. So, the process was tailored, and part of that tailoring included creating materials that do not reference any particular diagnosis. This had the additional benefit of allowing the materials to be put into use with other patient populations. In fact, our hospital is considering use of our materials for general transition support across the hospital.

Practical applications

We noted several important practical applications that we felt would be important to share with others who are considering efforts to address transition in their health systems. First, many of the steps look longer than we expected. In particular, the process for vetting education materials required several rounds of feedback from both the marketing department and the patient education department in our hospital, and the process for adding the transition tracking system to the EMR was time-consuming due to competing interests for programmer time. Overall, we are glad we took the time to make sure that the education materials had formal approval and the process for documenting transition progress was built in the EMR, but efforts such as these require significant amounts of time and attention. Anyone considering the implementation of transition processes in their systems should consider allowing significant time for these steps.

We also found that further clarity was needed around roles for staff and providers. Our training covered the general transition process, but we didn't assign clear roles with respect to who would be introducing the topic, who would be assessing a youth's skill set, or completing a specific task. We had intended to keep this flexible as the approach may have varied with different care team members. However, we found that this flexibility left room for confusion, which sometimes meant transition wasn't addressed or areas were addressed twice in the same visit (before another care team member could document what was covered in the EMR). Options to prevent this include breaking staff tasks down by discipline or explicitly directing care team members regarding their role.

Another important application is that clinicians should consider strategies to address necessary self-management skills in addition to addressing youth confidence regarding transition and the practical steps of transition, such as identifying an adult provider. If a young person feels that they are ready for adult care, but they have never asked for a refill or scheduled an appointment themselves, they are likely to find that they cannot navigate well independently. This is why our process included tasks that YLHIV completed with members of the clinic staff. Even if a clinic is not ready to proceed with a full process such as the one we described, there are

strategies to check on a young person's skills while still in pediatric care, such as watching them request a refill from the pharmacy or making sure they – and not their parents – schedule appointments.

Finally, the high rate of missed appointments and patients with competing clinical needs in this study suggest that transition processes may need to include effort both during and between clinic visits to reach all patients. If patients regularly miss appointments or only attend appointments when in crisis, addressing transition may be challenge in clinic. Efforts outside of clinic may be required to address transition with all patients well.

This study has limitations. It was done in one clinic specializing in the care of people living with HIV. It may not be generalizable to other institutions. The small number of participants also makes it hard to generalize. The other limitation of this particular process is that the education materials are printed, not electronic, which may be less appealing to some youth. Our clinic sees patients across the lifespan, and so didn't consider transfer to a new adult provider as part of this process. Clinics that do have to transfer patients to a new provider will face those additional challenges.

We are considering several steps as we continue to seek ways to improve transition and evaluate its effects in the FACES clinic. The first is an effort to include trainees in the process, as many residents and fellows rotate through the clinic, and it could thus serve as an opportunity to learn about important transition concepts. The other challenge is a more structured process on starting transition in someone newly diagnosed with HIV. As previously noted, many adolescents and young adults continue to acquire HIV, and with a new diagnosis comes a significant amount of education and information that can be overwhelming. The clinic needs to first focus on ensuring that urgent mental health and other needs are met before requiring youth to consider the many facets of transition to adult care. As such, we will need a way in the future to formally begin and document when the transition process has started for these patients.

From an assessment standpoint, this work will need to be expanded to other sites and work is needed to determine the effect of this process on longer-term outcomes, such as retention in care and viral suppression, as these are important surrogate markers of successful transition among YLHIV.

Conclusions

Despite the significant advances in HIV therapy and the recognition that *undetectable equals untransmittable* (Eisinger, Dieffenbach, & Fauci, 2019), stigma and misinformation about HIV continue to exist in society. This makes it even more important to have a supportive transition process for youth facing the challenges of entering adulthood living with HIV. Our process, which was developed with input from a multi-disciplinary team and guided by national guidelines regarding transition, was found to be helpful to patients, caregivers, and the health care team.

We feel this process could serve as a model for other clinics seeking to improve their process for transitioning patients to adult care. In particular this study shows the importance of establishing a framework that guides the transition process for the clinic. It also highlights the importance of allowing time to establish the process and addressing youth skills in addition to youth confidence. Lastly, it suggests that efforts outside of clinic visits may be necessary to fully address transition in all YLHIV.

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Ethics approval

This study was approved by the Nationwide Children's Hospital Institutional Review Board (IRB).

Authors' contributions

Dr. Hart participated in conceptualizing the study, assisted with developing the analysis plan, wrote the first draft, and revised the manuscript critically for important content.

Dr. Brundrett participated in conceptualizing the study, directed the analysis plan, collected and summarized the data, and revised the manuscript critically for important content.

Declaration of Competing Interest

The authors have no conflicts of interest to report.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.pedn.2022.09.020>.

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