

Resident Dyads Providing Transition Care to Adolescents and Young Adults With Chronic Illnesses and Neurodevelopmental Disabilities

Richard J. Chung, MD

Joan Jasien, MD

Gary R. Maslow, MD, MPH

ABSTRACT

Background Youth with special health care needs often experience difficulty transitioning from pediatric to adult care. These difficulties may derive in part from lack of physician training in transition care and the challenges health care providers experience establishing interdisciplinary partnerships to support these patients.

Objective This educational innovation sought to improve pediatrics and adult medicine residents' interdisciplinary communication and collaboration.

Methods Residents from pediatrics, medicine-pediatrics, and internal medicine training programs participated in a transitions clinic for patients with chronic health conditions aged 16 to 26 years. Residents attended 1 to 4 half-day clinic sessions during 1-month ambulatory rotations. Pediatrics/adult medicine resident dyads collaboratively performed psychosocial and medical transition consultations that addressed health care navigation, self-care, and education and vocation topics. Two to 3 attending physicians supervised each clinic session (4 hours) while concurrently seeing patients. Residents completed a preclinic survey about baseline attitudes and experiences, and a postclinic survey about their transitions clinic experiences, changes in attitudes, and transition care preparedness.

Results A total of 46 residents (100% of those eligible) participated in the clinic and completed the preclinic survey, and 25 (54%) completed the postclinic survey. A majority of respondents to the postclinic survey reported positive experiences. Residents in both pediatrics and internal medicine programs reported improved preparedness for providing transition care to patients with chronic health conditions and communicating effectively with colleagues in other disciplines.

Conclusions A dyadic model of collaborative transition care training was positively received and yielded improvements in immediate self-assessed transition care preparedness.

Introduction

More than 85% of youth with special health care needs survive to adulthood and transfer care from pediatric to adult settings. Many experience difficult transitions, which may derive in part from suboptimal care they receive from health care providers without training in transition care. Transition care involves supporting these patients in mastering self-care behaviors and health care navigation skills. Close collaboration and communication between pediatrics and adult clinicians are crucial as patients transfer between settings. Despite growing awareness of the importance of these transitions, few educational programs exist to train future pediatricians and adult clinicians in transition care.¹ Studies of practicing physicians and trainees demonstrate the extent of the problem.²⁻⁴ In 1 study, 18% of pediatricians reported communicating with adult providers, and in another,

more than 75% of internal medicine residents reported being inadequately prepared to care for youth with special health care needs.^{5,6}

Beyond transition care training, both child- and adult-focused trainees have limited exposure to collaborative care for youth with special health care needs, and they rarely have direct working experiences with trainees in other disciplines. In a survey we conducted of more than 470 graduate medical education (GME) trainees at our institution, a majority of pediatrics and adult trainees had never spoken with a clinician from the other specialty about a patient (personal communication, April 2016). Without such experiences, residents may make assumptions about their pediatrics or adult medicine colleagues that may widen the perceived divide between them as they move into independent practice.

The objective of this educational innovation was to implement a collaborative model for training child- and adult-focused residents in transition care to fill a substantial gap, as well as to establish a pattern of

DOI: <http://dx.doi.org/10.4300/JGME-D-16-00292.1>

Editor's Note: The online version of this article contains a table of didactic content and the resident surveys.

productive collaboration between pediatrics and adult medicine physicians.

Methods

We established a noncategorical interdisciplinary transitions clinic at Duke University Medical Center that served patients aged 16 to 26 years with chronic medical illnesses (eg, diabetes mellitus, epilepsy); neurodevelopmental disorders (eg, autism, intellectual disability); and mental health conditions (eg, schizophrenia, bipolar disorder). Clinical services focused on transitioning to adult care and providing support to achieve independent living and effective self-care behaviors. The clinic was held weekly (4 hours), and pediatrics, internal medicine, and combined medicine-pediatrics residents participated in 1 to 4 clinic sessions during month-long ambulatory rotations.

Staffing and Logistics

The clinic was staffed by a multidisciplinary team that included young adult peer coaches, a social worker, a parent navigator, a nurse, an administrative assistant, and attending physicians with pediatrics, internal medicine, psychiatry, child psychiatry, adolescent medicine, and child neurology and neurodevelopment training. Two or 3 attending physicians supervised each session as part of their standard clinical effort, and they personally evaluated new and returning patients in addition to overseeing residents. Each attending was scheduled with 1 or 2 new consultations and between 4 and 6 return visits per session, and all encounters were billed as standard medical visits. The social worker was supported by a Duke institutional GME innovation grant and a Picker Gold GME Challenge Grant. The peer coaches were work-study students who themselves were adolescents and young adults with special health care needs. The volunteer parent navigator was a parent of a young adult with a neurodevelopmental disability who also worked as a professional advocate for families with children with disabilities. Most patients were referred from within the institution by primary care or subspecialty providers for longitudinal transition support and management of complex psychosocial challenges (eg, guardianship, treatment adherence support). Patients returned every 2 to 3 months for ongoing consultative support designed to complement other specialty and primary care services.

Resident Experience

Pediatrics residents participated during their adolescent medicine rotation, and internal medicine and

What was known and gap

Many youths with special health care needs survive to adulthood, yet effective approaches for training physicians in transition care have not been established.

What is new

An interdisciplinary transition clinic for pediatrics, internal medicine, and medicine-pediatrics residents addressed psychosocial and medical transitions, including health care navigation, self-care, and education and vocation topics.

Limitations

Single institution study; outcomes limited to self-assessment of efficacy and attitudes.

Bottom line

The transition clinic improved residents' perception of transition care preparedness.

medicine-pediatrics residents during ambulatory rotations. Upon arrival, residents engaged in a brief didactic session about issues facing youth with special health care needs (provided as online supplementary material) and were then instructed on a rubric for conducting a medical and psychosocial transition assessment (FIGURE 1). Pediatrics and medicine-pediatrics residents were paired with internal medicine residents to form dyads, and each dyad conducted an hour-long transition assessment. Residents typically alternated roles (primary interviewer, scribe) multiple times during each assessment and were encouraged to share the roles equitably. The residents presented each case to the team and guided further conversation with the patient to formulate a transition plan.

Each dyad conducted 1 to 2 new patient assessments during each session and also helped evaluate returning patients (FIGURE 2). As time allowed, team members, including the parent navigator and peer coaches, provided additional teaching. Residents typically received 30 to 60 minutes of teaching during each session. Although all residents received core teaching around general transition concepts, additional teaching topics varied depending on the interests of the trainees. Residents also had regular opportunities to debrief about their experiences.

Evaluation

Residents were invited to complete a preclinic electronic survey 1 week before the first clinic session and a postclinic survey within 1 week of the end of the rotation (provided as online supplementary material). The survey assessed satisfaction with the experience, comfort with speaking with patients and other clinicians about transition, and attitudes toward youth with special health care needs. Survey items were extracted from a larger survey administered to all GME trainees at our institution, which was

<p>Health Care “Genogram”:</p> <p>Create a diagram of the patient’s health care team with the patient in the center and each team member placed closer or further from the center based on his or her degree of involvement in the patient’s care. This diagram provides a sense of the complexity of the patient’s care and the processes that he or she navigates in seeking care.</p>	<p>Health Care Knowledge, Self-Management, and Navigation:</p> <p>Explore the patient’s understanding of his or her health conditions and prognoses, self-management behaviors, and health care navigation skills. Develop a picture of the patient’s day-to-day routines related to his or her health and well-being and the role of family members and friends in supporting those routines.</p>
<p>Personal Goals and Quality of Life:</p> <p>Ask the patient to describe his or her short- and long-term goals beyond health care needs. Develop a picture of the patient’s values and priorities across different spheres of his or her life. Explore the factors that affect his or her day-to-day quality of life including but not limited to health condition-related symptoms.</p>	<p>Social, Educational, and Vocational Assessment:</p> <p>Discuss the patient’s social supports and key relationships. Determine the patient’s current level of educational and vocational achievement, potential for further progress, and personal and familial goals in this regard.</p>

FIGURE 1
Transition Assessment Quadrants

reviewed by 4 local experts for evidence of content validity, and by trainees for clarity.

The evaluative components of the study were approved by the Duke University Health System Institutional Review Board.

Study data were collected and managed using REDCap (Vanderbilt University, Nashville, TN) electronic data capture tools hosted at Duke University.⁷ Preclinic and postclinic responses on paired items were analyzed using paired *t* tests (Stata version 14, StataCorp LP, College Station, TX).

Results

A total of 46 residents (100% of those eligible) completed a preclinic survey about their baseline attitudes and experiences. Most respondents were female and white, had some pediatrics training, and

had completed at least 1 year of training at the time of participation (TABLE 1).

Twenty-five residents (54%) completed a postclinic survey, including 17 pediatrics and 8 internal medicine residents. A large majority of residents who completed the postclinic survey rated the clinic experience (didactics, discussions, patient interactions, and interdisciplinary collaboration) as *good* or *excellent* and reported positive changes in attitudes toward transition care, increased comfort in communicating with colleagues from other disciplines, and willingness to recommend the experience (TABLE 2).

Three specific transition care preparedness items were asked of internal medicine residents, and 2 items were asked of pediatrics and medicine-pediatrics residents. Between pre- and postclinic assessment, internal medicine trainees reported statistically significant improvement in preparedness for communicating with pediatrics providers (1.6 to 2.9; range, 1–5; *P* < .01), counseling young adults and families (1.6 to 2.8; range, 1–5; *P* < .01), and receiving young adults into care (1.6 to 2.9; range, 1–5; *P* = .04). Pediatrics and medicine-pediatrics trainees reported statistically significant improvements in preparedness for communicating with adult providers (2.2 to 2.9; range, 1–5; *P* < .01) and counseling families and preparing patients to transition (2.3 to 3.0; range, 1–5; *P* < .01; TABLE 3).

In examining resident participation, we noted full attendance and high learner engagement, as well as confirmed a lack of barriers with training program coordinators. Billing receipts were adequate to support attending time when the clinic was fully subscribed.

2-Hour New Patient Assessment				1-Hour Return Assessment			
Time (min)	Patient	Resident Dyad	Attending	Time (min)	Patient	Resident Dyad	Attending
60	Arrival, nursing intake, resident dyad assessment	Chart review, comprehensive patient assessment	Two 30-minute return visits	30	Arrival, nursing intake, resident dyad assessment	Chart review, return assessment	One 30-minute return visit
15	Break	Team case review	Team case review	15	Follow-up with peer coach, social worker, and/or parent navigator	Case review with attending	Case review with attending
15	Discussion and treatment planning with clinical team	Discussion and treatment planning with patient and family	Discussion and treatment planning with patient and family	15	Discussion and treatment planning with clinical team	Discussion and treatment planning with patient and family	Discussion and treatment planning with patient and family
30	Peer coach, social worker, and/or parent navigator consultation	Shadow peer coach, social worker, and/or parent navigator	30-minute return visit				

FIGURE 2
New Patient and Return Assessment Processes

TABLE 1
Resident Demographics

Demographic	Overall (N = 46)	Pediatrics/Medicine-Pediatrics (n = 29)	Internal Medicine (n = 17)
Mean age in years (SD) [NR]	29.2 (2.3)	29.8 (2.6) [3]	28.4 (1.6)
Sex, No. (%)			
Female	27 (59)	18 (62)	9 (53)
Male	18 (39)	10 (34)	8 (47)
NR	1 (2)	1 (3)	0 (0)
Year in training, No. (%)			
PGY-3	23 (50)	20 (69)	3 (18)
PGY-2	14 (30)	8 (28)	6 (35)
PGY-1	8 (17)	0 (0)	8 (47)
NR	1 (2)	1 (3)	0 (0)
Race/ethnicity, No. (%)			
White	32 (70)	21 (72)	11 (65)
Asian	9 (20)	4 (14)	5 (29)
Black	1 (2)	0 (0)	1 (6)
Other	1 (2)	1 (3)	0 (0)
NR	3 (7)	3 (10)	0 (0)

Abbreviations: NR, not reported; PGY, postgraduate year.

Discussion

The dyadic model of transition care training was well received by a majority of trainees who responded to the postsurvey. Both pediatrics and adult trainees reported positive changes in self-assessed preparedness to provide transition care and engage colleagues around the care of shared patients. Changes were greatest among internal medicine trainees, possibly reflecting a greater dearth of prior relevant experiences compared with pediatrics trainees. Although statistically significant, improvements were generally small and indicated that residents did not yet feel fully

competent after the experience. This is likely due to the limited and variable exposure of residents to the various transition care topics addressed in the clinic.

Of note, this innovation addressed several Accreditation Council for Graduate Medical Education training priorities, including the provision of appropriate and safe care, communication between colleagues, pursuit of professional ethical virtues such as health equity, and understanding of systems-based practice. The dyadic model was well suited to drawing out these training priorities given the centrality of interdisciplinary collaboration.

TABLE 2
Resident Evaluation of Clinic Experience

	Excellent, n (%)	Good, n (%)	Fair, n (%)	Needs Improvement, n (%)
Didactic	9 (39.1)	11 (47.8)	2 (8.7)	1 (4.3)
Discussion	13 (56.5)	10 (43.5)	0 (0)	0 (0)
Patient interaction	13 (56.5)	10 (43.5)	0 (0)	0 (0)
Experience working with another trainee from another discipline	9 (39.1)	13 (56.5)	1 (4.3)	0 (0)
	Yes, n (%)		No, n (%)	
Did this experience change your view of transition care for young adults?	20 (87)		3 (13)	
Did this experience help you feel more comfortable communicating with pediatrics/adult providers?	15 (65.2)		8 (34.8)	
Would you recommend this experience to other trainees?	22 (95.7)		1 (4.3)	

TABLE 3
Comparison of Paired Preclinic and Postclinic Responses^a

	Preclinic	Postclinic
Internal Medicine		
How prepared are you to talk to a pediatrics provider about the transition needs of a patient being transferred to see you?	1.6	2.9 ^b
How prepared are you to talk with a new young adult patient and his or her family about the differences they should expect now that they are in the adult medical system?	1.6	2.8 ^b
How prepared are you to receive a young adult and guide him or her through the transfer?	1.6	2.9 ^c
Pediatrics and Medicine-Pediatrics		
How prepared are you to talk to an adult provider about a patient you plan to transfer?	2.2	2.9 ^b
How prepared are you to discuss transitioning with a family and prepare a patient to transition?	2.3	3.0 ^b

^a Rating: 1, not at all; 2, beginning to learn; 3, developing competency; 4, fully competent; 5, highly skilled.

^b *P* value < .010.

^c *P* value < .05.

Key limitations of the implementation and evaluation of this innovation include its being limited to 1 setting, use of a survey to solicit self-assessed changes in attitudes and confidence, and the small number of participants who completed the postclinic survey.

Further exploration of the dyadic training model may address some of these important uncertainties by incorporating assessments (with validity evidence) that measure sustained behavioral changes and extension of the collaborative dyadic experience to longitudinal continuity clinic settings. The latter may accentuate the educational value of the dyadic model by allowing for deeper partnerships to form over time, and may provide a space for experimentation with different models for feasibility and sustainability.

This innovation was based in an established transitions clinic and funded in part by educational grants. Ensuring adequate billing and patient volumes is critical for sustainability.

Conclusion

This collaborative transition care training experience for pediatrics and adult trainees was well received by a majority of participants, and both pediatrics and adult trainees self-reported improved confidence in key transition care domains after participation.

References

1. Freed GL, Hudson EJ. Transitioning children with chronic diseases to adult care: current knowledge, practices, and directions. *J Pediatr*. 2006;148(6):824–827.
2. Okumura MJ, Heisler M, Davis MM, et al. Comfort of general internists and general pediatricians in providing

care for young adults with chronic illnesses of childhood. *J Gen Intern Med*. 2008;23(10):1621–1627.

3. Okumura MJ, Kerr EA, Cabana MD, et al. Physician views on barriers to primary care for young adults with childhood-onset chronic disease. *Pediatrics*. 2010;125(4):748–754.
4. Peter NG, Forke CM, Ginsburg KR, et al. Transition from pediatric to adult care: internists' perspectives. *Pediatrics*. 2009;123(2):417–423.
5. Burke R, Spoerri M, Price A, et al. Survey of primary care pediatricians on the transition and transfer of adolescents to adult health care. *Clin Pediatr (Phila)*. 2008;47(4):347–354.
6. Mennito S. Resident preferences for a curriculum in healthcare transitions for young adults. *South Med J*. 2012;105(9):462–466.
7. Harris PA, Taylor R, Thielke R, et al. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform*. 2009;42(2):377–381.



All authors are with Duke University School of Medicine. **Richard J. Chung, MD**, is Director of Adolescent Medicine and Associate Professor, Departments of Pediatrics and Medicine; **Joan Jasien, MD**, is Assistant Professor, Departments of Pediatrics and Neurology; and **Gary R. Maslow, MD, MPH**, is Child and Adolescent Psychiatry Fellowship Director and Assistant Professor, Departments of Pediatrics and Psychiatry and Behavioral Sciences.

Funding: This work was supported in part by a Picker Gold Graduate Medical Education Challenge Grant award from the Arnold P. Gold Foundation.

Conflict of interest: The authors declare they have no competing interests.

The authors would like to thank the Duke Office of Clinical Research, Audrey Brown, Rick Sloane, and Jeffrey Hawley for their support, and the residents who participated in clinic and

their program directors: Suzanne Woods (medicine-pediatrics), Aimee Zaas (medicine), and Betty Staples (pediatrics). The authors would also like to thank Marlyn Wells (parent navigator), Amanda Rozycki (program social worker), Samuel Brotkin (program coordinator), Mya Sendak (student), and Eitan Tye (student).

Corresponding author: Richard J. Chung, MD, Duke Health Center, 4020 North Roxboro Street, Durham, NC 27704, 919.620.5360, richard.chung@duke.edu

Received May 14, 2016; revision received October 24, 2016; accepted November 25, 2016.