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A Multidisciplinary Transition Consult Service: Patient Referral Characteristics

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ABSTRACT

Purpose: Children's hospitals must provide developmentally appropriate care to increasing numbers of young adults with complex healthcare needs as they transition to adult-oriented care. This article describes the patients, service, and short-term outcomes of an interprofessional healthcare transition (HCT) consult team comprised of nurses, social workers, a community health worker, and physicians.
Design and methods: The Adult Consult Team's tiered population framework stratifies patients by medical complexity. The team coordinates HCT services for patients with the highest complexity. Patients at least 18 years old are eligible if they have at least two specialists or an intellectual or developmental disability (IDD). Through a comprehensive medical and psychosocial assessment, the team prepares patients/families for adult-oriented healthcare.
Results: The Adult Consult Team received 197 referrals from July 2017 to June 2018. Patients had at least two specialists (73%), IDD (71%), technology dependence (e.g., gastrostomy tube, 37%) and Medicaid insurance (57%). The team assisted patients seen in its outpatient clinic with navigating mental health services (39%), insurance issues (13%), IDD services (15%), and the guardianship process (37%) and creating comprehensive care plans.
Conclusions: The Adult Consult Team transferred 30 patients with medical complexity to adult primary and specialty care, significantly improving pediatric inpatient and outpatient capacity for pediatric-aged patients. A broad range of young adult medical, psychosocial, legal, educational, and vocational needs were addressed.
Practice implications: An interprofessional team approach can help large pediatric healthcare systems address the multi-faceted needs of patients who are medically and psychosocially complex as they enter adulthood.

Introduction

As medical advancements lengthen the lifespan of children with chronic medical conditions (Pai & Schwartz, 2010), children's hospitals face caring for a growing number of young adults (ages 18 to 24 years). In a joint consensus statement, the American Academy of Pediatrics, American Academy of Family Physicians, and American College of Physicians recommended that all youth receive support with planning for healthcare transition, coordinated transfer of care from pediatric to adult providers, and integration into the adult healthcare system through building self-management skills (Cooley & Sagerman, 2011). However, only 17% of adolescents with special healthcare needs report receiving these healthcare transition (HCT) support services (Lebrun-Harris et al., 2018). The most recent clinical report on HCT outlined specific populations especially vulnerable during the transition process (White & Cooley, 2018). For example, young adults with chronic medical conditions may have become accustomed to a familiar set of multiple healthcare providers and thus may need significant care coordination as they navigate a new system of adult-oriented providers and expectations. Patients with intellectual and developmental disabilities may have issues navigating adult systems to access the same services they received in the pediatric context. Many mental health concerns present during emerging adulthood, which can be difficult to manage when there are provider changes. Barriers to providing developmentally appropriate care for adolescents and young adults with complex healthcare needs also transcend specific conditions (Schwartz, Tuchman, Hobbie, & Ginsberg, 2011). Such challenges include identification of qualified practitioners, insurance eligibility

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issues, expectations about adult care, limited patient/caregiver knowledge about chronic disease management, and shifting family dynamics and social supports (Gray, Schaefer, Resmini-Rawlinson, & Wagoner, 2017).

However, there is limited evidence-based guidance on how to best implement comprehensive HCT service models (Campbell et al., 2016). Most described HCT programs are condition-specific or focus on a single specialty, so there is less known about models for a broad pediatric population (Bhawra, Toulany, Cohen, Hepburn, & Guttmann, 2016). For example, previous descriptions of health care transition programs do not include a complete description of interventions and only focus on the transfer of care (Betz, O'Kane, Nehring, & Lobo, 2016). Program descriptions could include more on how they address other young adult health issues. For example, self-management skills like medical decision-making are a significant consideration in adolescent and young adult development, especially in the setting of a complex medical and psychosocial needs (White, Schmidt, McManus, & Irwin, 2018). To address these complex medical and psychosocial needs, we describe the Adult Consult Team, an interprofessional initiative formed at a children's hospital to coordinate transition planning and transfer to adult-oriented care. This article presents the conceptual framework, program description, patient characteristics, services, and preliminary short-term outcomes of an interprofessional HCT consult team for patients with medical and psychosocial complexity.

Organizational setting

The team operates at a large tertiary-care children's hospital and ambulatory network located in an East Coast urban community. From July 2017 to June 2018, this pediatric healthcare system provided care for over 53,000 unique patients aged 18 years or older across the outpatient clinics, inpatient units, emergency room, and outpatient procedure units. Many of these patients may be considered medically and psychosocially complex. Out of these adult patients, 3504 individuals had two or more chronic health conditions, and 2750 had a documented IDD diagnosis. Upon reaching adulthood, these patients can transfer their care to one of several administratively separate, adult-oriented healthcare systems.

A previous needs assessment in the pediatric healthcare system revealed that few providers (4%) assessed insurance needs of young adult patients and a half (48%) rarely assessed decision-making capacity of patients with IDD (Berens, Steinway, Szalda, & Jan, 2016). Providers in the academically affiliated, adult-oriented healthcare system reported insufficient time for care coordination (60%) and inadequate staffing structure (28%) as barriers to caring for young adults with medical complexity. Nearly all providers (95%) cited the need for a concise, updated medical summary at the time of healthcare transfer. Overall, there was no consensus on HCT policies and practices across healthcare systems or even within a given department or division.

Design and methods

Program description

The Adult Consult Team is a hospital-funded team that connects patients and their families to appropriate medical and psychosocial services as they enter adulthood and become eligible for transfer to adult-focused care. The team was initially started under a grant-funded pilot program (known as the Multidisciplinary Intervention Navigation Team) to address HCT at the patient and health systems level (Szalda et al., in press) before becoming supported by the hospital's care management program and increasing its clinical capacity. Members of the team have expertise with adolescent and young adult health issues, consisting of a nurse practitioner, a nurse care coordinator, social workers, a community health worker, and physicians with combined internal medicine and pediatrics training. Fig. 1 illustrates the team's tiered approach to HCT for the young adult population of the children's hospital network. Patients are stratified based on the complexity of underlying medical diagnoses and involved specialty care teams. Patients in the “lowest” and “moderate complexity” groups are managed by primary care or a single specialty team, respectively. Patients in the “high complexity” group have multiple medical specialty teams or have IDD. For instance, a patient with an underlying genetic

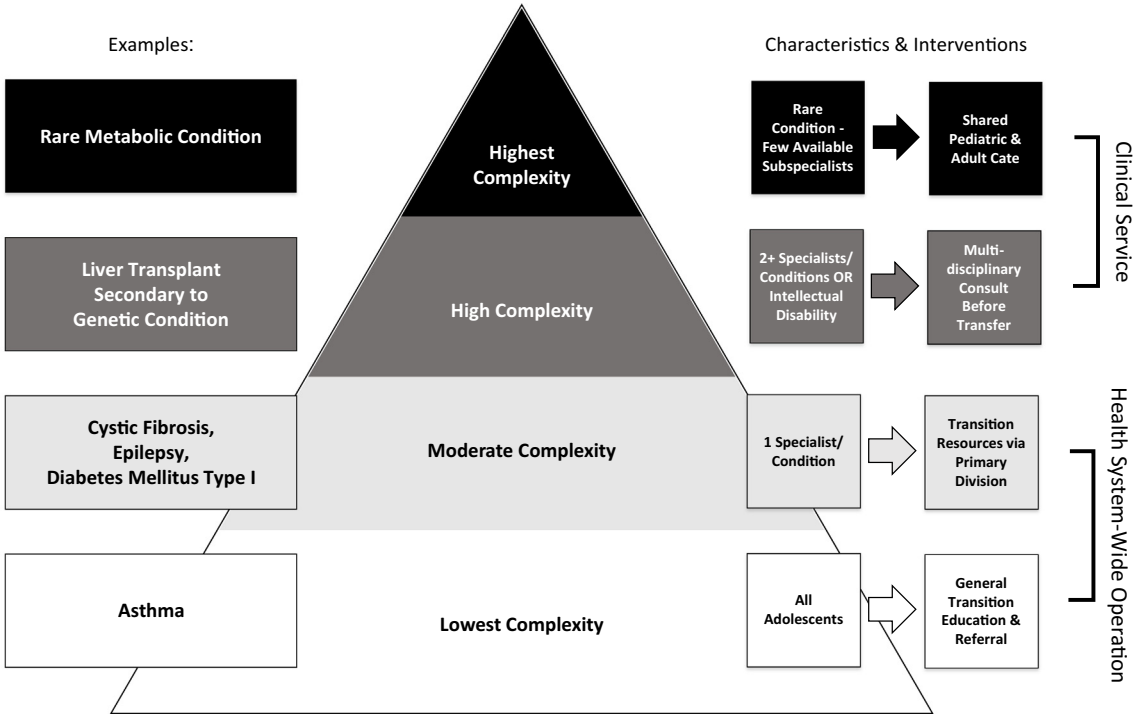

Fig. 1. Tiered population approach of the Multidisciplinary Intervention Navigation Team (MINT).

condition may have multiple affected organ systems requiring significant services from different clinical divisions. Those in the "highest complexity" group have a rare medical condition for which there are few or, in some cases, no available adult-based subspecialty providers at present. A case example would be a patient with a rare inherited metabolic disorder who may need care from a pediatric metabolic team but also access adult specialists for other health needs. The Adult Consult Team 's clinical service focuses on patients with high and highest medical complexity to provide a consulting service that coordinates preparation for transfer to adult-oriented care.

Any inpatient or outpatient provider from the children's hospital or its ambulatory network may refer new patients to this service. Patients at least 18 years old are eligible if two or more specialty teams follow them and/or if they have a diagnosis of IDD. Patient referred to the service may reside in a large geographic area as the children's hospital has a large referral network. For this article, we estimated the distance between a patient's residence and the children's hospital. To do so, we found the great-circle distance between the internal points of the zip code of the children's hospital and those of a patient's residence (Roth, 2014).

Fig. 2 depicts the consultation process. All outpatient consults have the goal of transfer planning. The team also accepts inpatient consults for medical questions, care coordination, community resources, and HCT preparation, which may involve outpatient follow-up after discharge from the hospital. For each new referral, the Adult Consult Team reviews the patient's medical records for service eligibility and anticipated medical and psychosocial needs. The team compiles this information into a structured medical and psychosocial plan. Table 1 outlines components of this plan, which was adapted from the "Got Transition" sample medical summary and emergency care plan tool (National Alliance to Advance Adolescent Health, 2014). The team communicates with each of the patient's pediatric primary and specialty care teams about the patient's suitability for transfer in the next six to twelve months. The team also asks providers for recommendations for adult care providers.

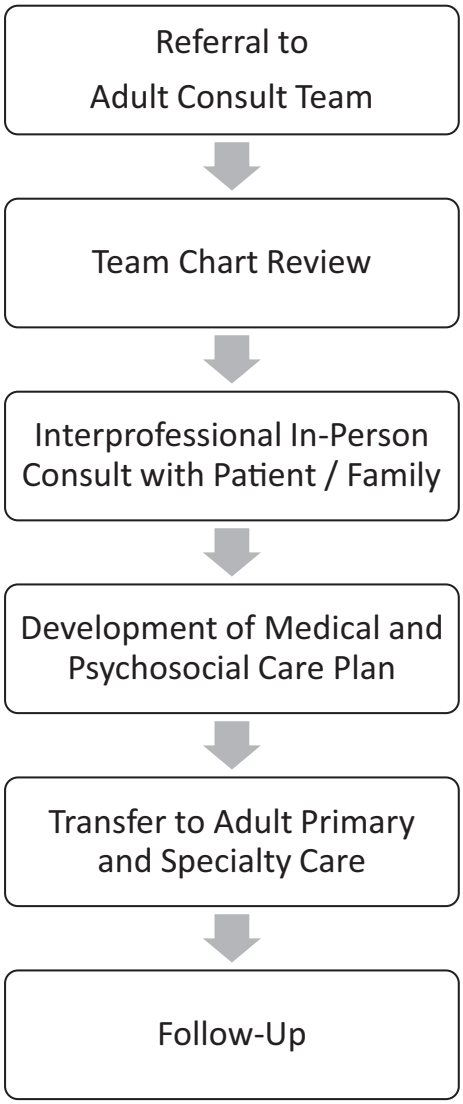

Fig. 2. Overview of process of individual patient consults.

The team contacts the patient to confirm their interest in the clinical service. If interested, the patient comes to the outpatient clinic where members of the Adult Consult Team review the medical and psychosocial plan with the patient and address any discrepancies or barriers to accessing services. This includes reviewing providers' recommendations and the patient's preferences for adult-care providers. In addition, issues surrounding a patient's medical insurance are also addressed for completed outpatient referrals and inpatient referrals seen in outpatient follow-up. Another important part of the clinical evaluation is identifying and addressing unmet psychosocial needs; examples are listed in Table 3. All of these revisions are reflected in the medical and psychosocial plan, which is saved in the electronic medical record, shared with the patient and referring provider, and later sent to the new adult providers via secure email, fax and/or electronic health record. The Adult Consult Team then assists patients/families in making appointments with their new adult primary care and specialist providers. This may, for example, involve calling the provider's office with or on behalf of the patient.

All team members encourage young adult patients to participate in their care as much as possible, such as connecting patients with IDD to disability services like neuropsychiatric testing, individualized education plan development, vocational training, and other community

Table 1
Medical and psychosocial plans discussed at outpatient encounters.

		Example components
Medical plan	Summary of active medical problems	Recent relevant diagnostic tests Major complications and hospitalizations Upcoming major interventions (e.g. surgical procedures)
	Current and accepting medical providers	Primary care Specialty care Support services (e.g. physical therapy)
	Insurance	Primary and secondary Need for switching carriers
	Current medication list	Dosage, route, frequency Possible gaps in prescriptions Need for prior authorization
	Medical equipment	Mobility supports Medical devices (gastrostomy tube, tracheostomy, etc.) Need for letters of medical necessity
Psychosocial plan	Intellectual disabilities services	Neuropsychological testing Individualized educational plan
	Legal decision making	Guardianship Power of attorney
	Educational and vocational goals	Reasonable accommodations Work programs Navigating an educational institution's office of disability services
	Patient-directed goals with community health worker	Peer support Appointment making Signing up for online patient portal Navigating educational, vocational, transportation, and other resources Management of medications and acute symptoms Communication with providers

resources. The Adult Consult Team also supports patients/families who may require more formal legal decision-making supports, such as filing for power of attorney or guardianship. The Adult Consult Team's community health worker specifically engages with appropriate patients on self-management skills. As a former young adult patient who has transferred from our system to adult care, she coaches patients on setting goals, troubleshoots health system navigation issues, and connects to educational and vocational resources (Wu, Szalda, Trachtenberg, & Jan, 2018), which are also documented in the medical chart.

Various team members will often reach out to other providers to resolve any gaps in the plan, including prescription oversight, upcoming procedures, access to medical equipment, guardianship, and disability services. After these appointment dates, team members follow-up with the patient and family and obtain feedback about the transfer process. The consult service remains available for approximately three months after transfer to troubleshoot issues in integrating into adult care. For those referrals that led to complete transfers to care, we reviewed their healthcare utilization for the prior year, including the number of inpatient admission days and outpatient clinic visits. These numbers were used to estimate the expected healthcare utilization for the following year.

Results

The Adult Consult Team received 197 patient consults between July 1, 2017 and June 30, 2018, of which 155 (79%) were outpatient and 42 (21%) were inpatient (see Fig. 3). At the time of this analysis, 97 (49%) referrals were seen in consultation, and 30 (15%) patients were successfully transferred to adult care. The mean time between referral and transfer to adult care was 191 days ($SD = 84$). At the time of this analysis, 24 outpatient visits were scheduled for future dates. Of note, the short-term goal of referrals was not always full transfer to adult care; out of the 42 inpatient referrals, the plan for 35 (83%) consults was to receive ongoing care from pediatric providers but with coordination assistance from the Adult Consult Team.

Table 2 providers a demographic overview of the patients referred to the consult service. The mean age was 20.4 years ($SD = 2.4$). Out of the 197 referrals, 144 (73%) had two or more specialty care teams, 139 (71%) had diagnosis of IDD, and 95 (48%) had both. In addition, 34 (17%) patient had some form of technology dependence (e.g., gastrostomy tube, ventriculoperitoneal shunt, etc.).

Among the completed outpatient referrals and the inpatient referrals seen in follow-up, 35 (56%) had Medicaid insurance. Although we estimate that 148 (75%) referred patients resided within approximately 30 miles of the hospital, only 78 (40%) resided within the same city limits as the children's hospital and 44 (22%) lived out of state.

The team aided 24 patients (39% of outpatient referrals) with adult mental health supports (e.g., filling psychotropic medications, connecting to adult therapists) and 8 (13%) patients with changing insurance coverage. Coverage issues. The community health worker was assigned to work with 84 (43%) patients. Among the patients with IDD, 9 (20%) were connected to developmental services 23 (37%)

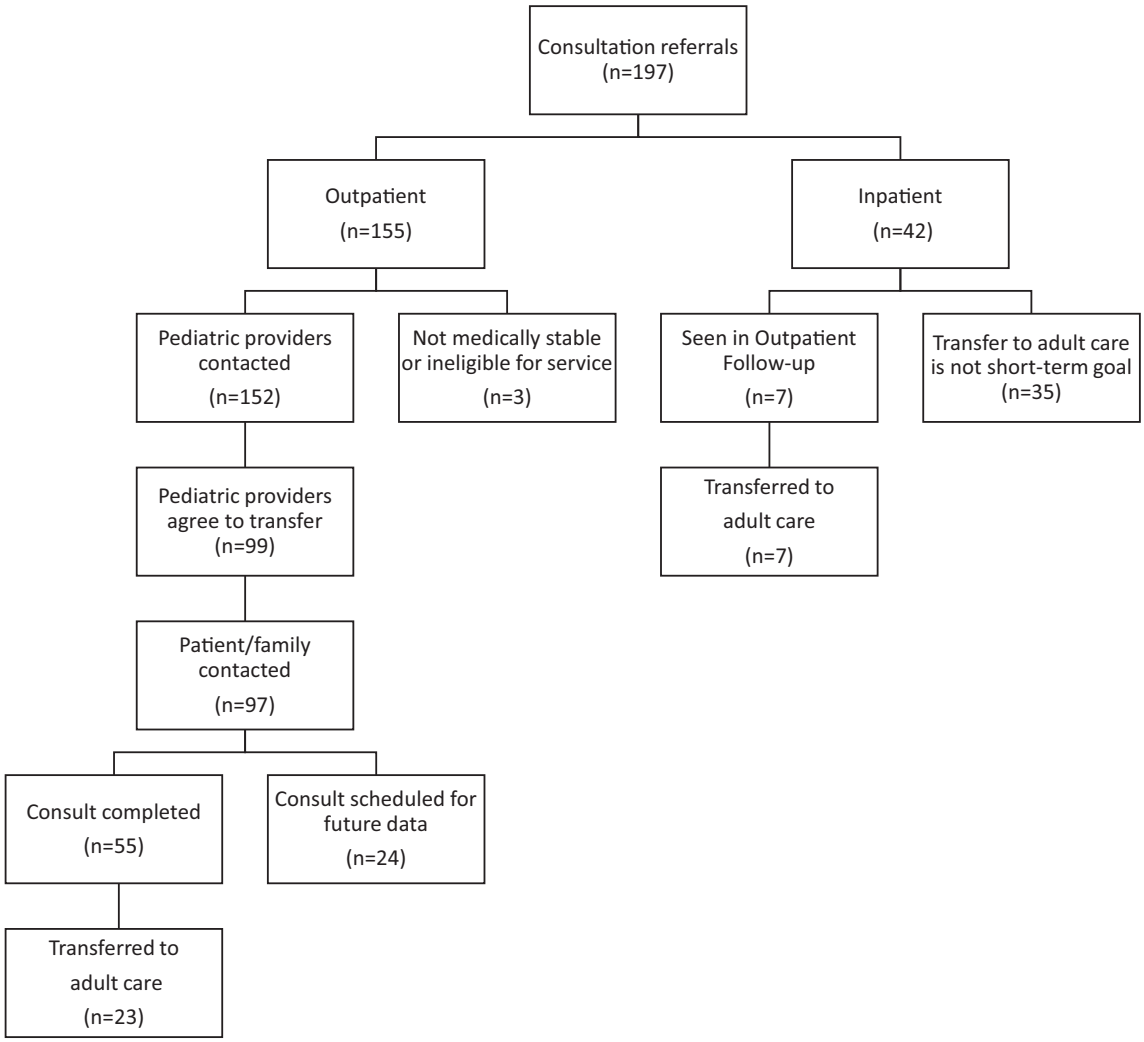

Fig. 3. Flowchart of patient referrals and disposition.

Table 2
Characteristics of patients referred to consult service.

Mean age, years	20.4 (SD = 2.4)
Has two or more subspecialty care teams	144 (73%)
Has an intellectual or developmental disability (IDD)	139 (71%)
Has 2+ subspecialists and IDD	95 (48%)
Resides	
within same city as children's hospital[a]	78 (40%)
within same state as children's hospital but different city	75 (38%)
outside of the state of children's hospital	44 (22%)
within 30 miles of the children's hospital	148 (75%)
between 30 and 60 miles of the children's hospital	40 (20%)
greater than 60 miles from the children's hospital	7 (4%)
Has Medicaid as primary insurance[b]	35 (56%)
Has technology dependence	34 (17%)
Feeding tube	18 (9%)
Wheelchair-bound	16 (8%)
Tracheostomy	6 (3%)
Non-invasive ventilation	6 (3%)
Ventriculoperitoneal Shunt	5 (3%)
Other (central line, IVC filter, vesicostomy, supplemental oxygen)	8 (4%)

Percentages are out of 197 referrals unless noted otherwise.
[a] City and county of children's hospital are coterminous.
[b] Out of completed outpatient referrals and inpatient referrals seen in follow-up.

required assistance with navigating the process to obtain guardianship or power of attorney.

It was estimated that transferring these initial 30 patients made 300 inpatient bed-days and over 150 outpatient appointments available for other pediatric patients in the hospital and ambulatory network.

Discussion

A multidisciplinary team with knowledge of young adult health issues and medical and community resources can assist with time-consuming tasks: identifying suitable providers, creating a care summary, gaining consensus among provider teams, and screening for and filling unmet psychosocial needs. Although only a small percentage of all referrals were transferred fully to adult-focused care, the medical complexity of these patients corresponded to high healthcare utilization in the pediatric system. Thus, the transfer of these adult-aged patients allowed for improved access to inpatient and outpatient resources for pediatric-aged patients.

Transition coordination is complicated even for teams with expertise in this area. For example, identification of and access to appropriate adult providers was not an uncommon barrier because of both expertise and insurance barriers. The team often discussed insurance options with patients and families due to eligibility cutoffs or to access specific provider networks. Some healthcare networks did not accept the same insurance as a patient's pediatric providers. Even after resolving insurance issues, identifying adult providers qualified and able to take certain patients can be challenging, especially in the setting of mental health and rare conditions. Although our team has built relationships with adult providers based on experience with previous referrals, patients live in a large geographic region, so the team relied on building new relationships with multiple different adult care networks and insurance systems.

Table 3
Patients requiring specific psychosocial services.

Connection to new/adult mental health supports	24 (39% of outpatient referrals)
Change in health insurance coverage	8 (13% of all patients)
Assistance with new IDD services (neuropsychological testing, individualized educational plan development)	9 (20% of patients with IDD)
Require assistance with guardianship or power of attorney	23 (37% of patients with IDD)
Assigned to work with community health worker	84 (43% of all patient referrals)

The generalizability of the described intervention model is limited as it was implemented at a single site without a control group for comparison. Although this article seeks to address some of the limitations of previous descriptions of HCT programs, further work should also solicit additional patient and family feedback on experience with the transfer process and integration into adult care (Gabriel, McManus, Rogers, & White, 2017), especially around some of the unique interprofessional activities presented here such as skill-building with the community health worker or navigating legal and community resources with the social workers.

Conclusion

The Adult Consult Team exemplifies the feasibility of an interprofessional team to address the medical and psychosocial needs of a complex group of young adults with childhood-onset chronic health conditions aging out of pediatric healthcare systems. The interprofessional team's clinical service is not restricted to a specific condition but available for a broad young adult population. The tiered population approach provides a conceptual framework that informs the approach to transfer preparation and implementation. While this article focuses on direct patient care, this team and others in the organization have pursued a larger body of health systems work surrounding transition readiness that includes development and implementation of transition policies, electronic medical record tools, and patient and provider education surrounding transition for all youth with and without complex medical conditions. Future work should continue to evaluate outcomes on an individual patient level and via a population health lens to continue to move the field of transitional care forward.

CRediT authorship contribution statement

Angelico N. Razon: Formal analysis, Investigation, Resources, Validation, Writing - original draft. **Adam Greenberg:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Writing - review & editing. **Symme Trachtenberg:** Conceptualization, Funding acquisition, Investigation, Methodology, Resources, Writing - review & editing. **Natalie Stollon:** Data curation, Formal analysis, Investigation, Project administration, Resources, Validation, Writing - review & editing. **Katherine Wu:** Conceptualization, Investigation, Methodology, Resources, Writing - review & editing. **Lauren Ford:** Data curation, Investigation, Project administration, Resources, Writing - review & editing. **Laura El-Hage:** Investigation, Resources, Writing - review & editing. **Sheila Quinn:** Investigation, Resources, Writing - review & editing. **Dava Szalda:** Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Resources, Supervision, Validation, Writing - review & editing.

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