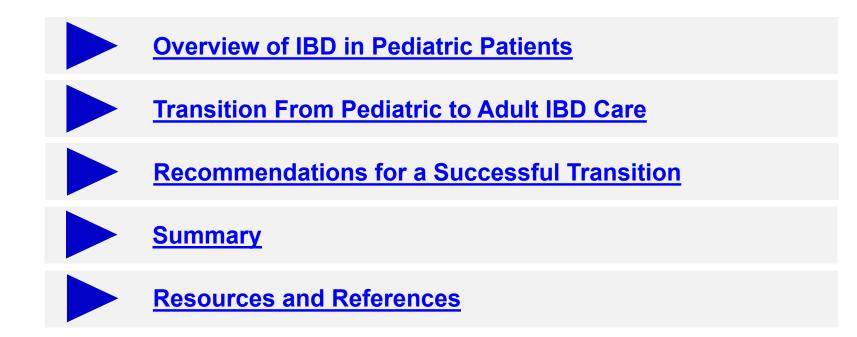
Transition From Pediatric to Adult Gastroenterology Care in Patients With Inflammatory Bowel Disease



These materials were created in conjunction with Pfizer Inc.

Contents

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Overview of IBD in Pediatric Patients

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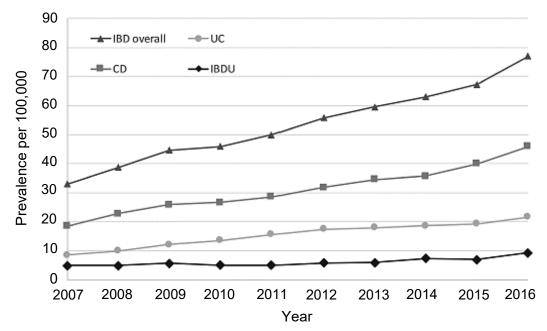
Epidemiology of Pediatric IBD

- Incidence and prevalence of pediatric IBD is increasing worldwide^{1,2}
- In a source population of 12,538,475 commercially insured Americans during the period of 2008 through 2009, the CD and UC prevalence in the pediatric population (<20 years of age) was 58 per 100,000 and 34 per 100,000, respectively³

Note: This study was limited by diagnostic misclassification due to lack of clinical details and possible underestimation of cases with low healthcare utilization

 Because IBD is a chronic, lifelong disorder, every patient with pediatric-onset IBD will eventually need to transition to an adult gastroenterologist for continuity of care⁴

Increased Prevalence of IBD in Pediatric Patients Aged 2 to 17 Years in Optum and Truven Claims Data Analysis (2007-2016; N=5,729,107)²



Note: This claims-based study was limited by potential misclassification due to inaccurate and inconsistent coding practice. Because the databases included mostly privately insured patients, older and low-income populations may also be underrepresented

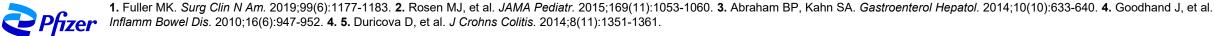
CD=Crohn's disease; IBD=inflammatory bowel disease; IBDU=inflammatory bowel disease unspecified; UC=ulcerative colitis.

1. Bishop J, et al. Adolesc Health Med Ther. 2014;5:1-13. 2. Ye Y, et al. Inflamm Bowel Dis. 2020;26(4):619-625. 3. Kappelman MD, et al. Dig Dis Sci. 2013;58(2):519-525. 4. Abraham BP, Kahn SA. Gastroenterol Hepatol. 2014;10(10):633-640.

Pediatric-Onset and Adult-Onset IBD Differ in Presentation and Disease Course

Phenotype	 Colitis phenotype is more common in patients with pediatric-onset IBD (age <6 years) than in those with adult-onset IBD¹ 				
Presentation	 Clinical presentation of IBD in pediatric patients varies and may initially include growth failure, delayed pubertal development, and extraintestinal manifestations² 				
Disease extent	 Adolescents are more likely to have extensive IBD involvement compared with adults³ Among patients with UC, pancolitis may be more common in pediatric than in adult patients¹ Adolescents with CD present with ileocolonic disease more frequently than adults^{3,4} Upper gastrointestinal involvement in CD, which is rarely reported in adults, has been reported in approximately a quarter of adolescents³ 				
Severity and treatment	 In general, adolescents may have more severe disease requiring immunosuppressives and biologics than adults with IBD³ Cumulative steroid, azathioprine, methotrexate, and biologic use may be higher in patients with pediatriconset vs adult-onset CD⁵ 				

CD=Crohn's disease; IBD=inflammatory bowel disease; UC=ulcerative colitis.



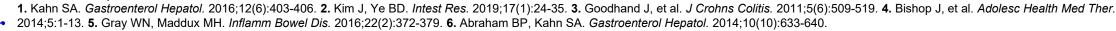
Care of Patients With IBD May Differ Between Pediatric and Adult Patients

Pediatric patients with IBD ¹⁻³	Adult patients with IBD ¹⁻³
Longer clinic visits	Generally shorter clinic visits
Family focused	Patient centered
 Involvement of parental direction and consent 	 Primarily single healthcare provider (gastroenterologist)
 Focuses include growth and development 	 Autonomous and independent
	 Focuses include cancer surveillance and fertility

 Pediatric patients with IBD have a greater tendency than adult patients to show avoidance behavior toward disease management and to seek support from family, which may lead to delays in emotional maturation and establishment of autonomy^{4,5}

These differences reinforce the need for a transition process supervised by both pediatric and adult care providers to ensure continuous, optimal care⁶

IBD=inflammatory bowel disease.



Transition From Pediatric to Adult IBD Care

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Transition Process

Transition of Care

- Refers to purposeful, planned movement from child-centered care to adult-oriented care, with the following two main components¹:
 - Healthcare responsibility transitions from guardian to patient¹
 - Fear of patients' heath being compromised and financial issues (eg, termination of health insurance, loss of social support services) may arise during this process²
 - Patient transfers from pediatric to adult provider¹
 - Transfer of care should be considered part of and not necessarily the end of the transition process³
- Having a structured transition of adolescents with IBD from pediatric to adult healthcare may be associated with improved medication adherence and disease outcomes^{4,5}

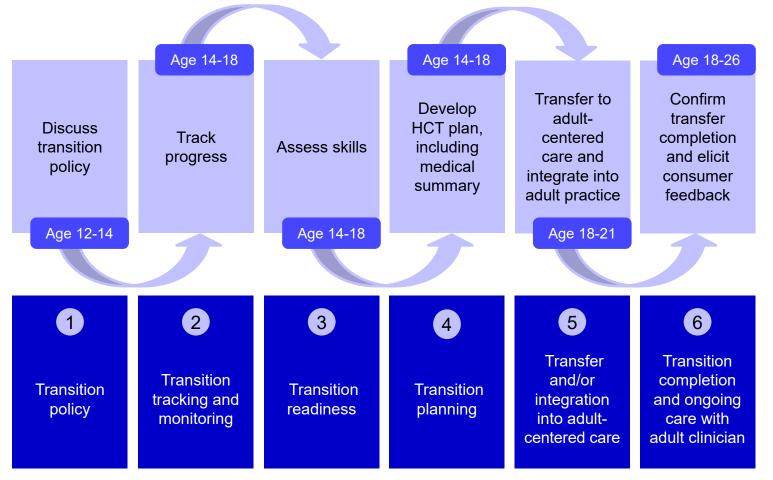
IBD=inflammatory bowel disease.



Philpott JR, Kurowski JA. Inflamm Bowel Dis. 2019;25(1):45-55.
 Philpott JR. Gastroenterol Hepatol. 2011;7(1):26-32.
 Goodhand J, et al. J Crohns Colitis. 2011;5(6):509-519.
 Gumidyala AP, et al. Inflamm Bowel Dis. 2018;24(3):482-489.
 Kim J, Ye BD. Intest Res. 2019;17(1):24-35.

Transition Timeline

- When possible, discussion about transition of care should be started early (patient age 10-12 years)^{1,2}
 - Transfer to adult care most often occurs between 18 and 23 years of age²
- Transition should focus on¹
 - Patient and family readiness
 - Transfer of an accurate and complete medical history
 - Close follow-up to ensure continuity of care, monitoring of disease activity, and patient selfmanagement



Timeline for Introduction of the 6 Core Elements of Healthcare Transition³

HCT=healthcare transition.

1. Abraham BP, Kahn SA. Gastroenterol Hepatol. 2014;10(10):633-640. 2. Zeisler B, Hyams JS. Nat Rev Gastroenterol Hepatol. 2014;11(2):109-115. 3. White PH, Cooley WC. Pediatrics. 2018;142(5):e20182587.

Challenges in Transitioning Patients

Barriers to Successful Transitioning of IBD Care^{1,2}

- Poor adherence to therapy
- Psychological stress (eg, anxiety and depression)
 Parental and provider reluctance to transfer care
- Inadequate self-efficacy and knowledge of disease •
- Patient readiness and maturity
- - Differences between pediatric and adult IBD care
- In an online survey of pediatric IBD providers in the US (N=141), 40.4% reported basing their approach to transition on published transition guidelines, and only 14.2% reported having a written transition policy at their institution³

Note: This study was limited by possible low response rates, self-selection bias, and logistical issues

In a survey of patients previously registered in a pediatric IBD registry (N=605) in Germany and Austria, 52% received assistance with preparing for transition to adult providers⁴

Note: This study was limited by possible oversampling of patients remaining in close contact with home and possible parent interference with patient responses due to the requirement of approaching patients via their parents. Also, there are limitations of applicability of ex-US data to patients with IBD in the US.

1. Abraham BP, Kahn SA. Gastroenterol Hepatol. 2014;10(10):633-640. 2. Kahn SA. Gastroenterol Hepatol. 2016;12(6):403-406. 3. Gray WN, Maddux MH. Inflamm Bowel Dis. 2016;22(2):372-379. 4. Timmer A, et al. PLoS One. 2017;12(5):e0177757.

IBD=inflammatory bowel disease.

Concerns With Not Properly Transitioning a Patient

- The following negative outcomes may occur if transition from pediatric to adult IBD care is not well planned and executed^{1,2}:
 - Increased patient and family stress
 - Delayed psychosocial development
 - Poor healthcare attendance
 - Loss of continuity of care
 - Nonadherence to medications
 - Worsening of disease activity and increased hospitalizations
 - Escalation of therapy and/or requirement for surgery

Retrospective Chart Review of Pediatric Patients With IBD (N=95) Demonstrated Fewer Clinic Visits and More Noncompliance After Transition to Adult Care³

Study outcomes	Pediatric care	Adult care	<i>P</i> value	
Primary outcomes, no./year				
ED visits	0.18	0.15	0.71	
Hospitalizations	0.23	0.13 0.03 0.37	0.13 0.53 0.11	
Surgical interventions	0.05			
Endoscopies	0.25			
Outpatient clinic visits	3.05	2.56	0.01ª	
Secondary outcome, n (%)				
Documented compliance: noncompliance	67(71):28(29)	54(57):41(43)	0.01ª	

Note: This retrospective study was limited by information bias as it relied on medical records; observational data may also have limited ability to make inference about causation

Pediatric patients with IBD are at risk of being lost to follow-up and nonadherent to medications and clinic visits,⁴ highlighting the need for a well-planned transition

^a*P*<0.05 was considered significant.³

ED=emergency department; IBD=inflammatory bowel disease.

1. Abraham BP, Kahn SA. Gastroenterol Hepatol. 2014;10(10):633-640. 2. Kim J, Ye BD. Intest Res. 2019;17(1):24-35. 3. Bollegala N, et al. J Crohns Colitis. 2013;7(2):e55-e60. 4. Rosen D, et al. Inflamm Bowel Dis. 2016;22(3):702-708.

Keys to a Successful Transition

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Skills Needed for Patients to Be "Transfer Ready"

	Basic medical history
	Nature of the condition
Knowledge ^{1,2}	Procedures and tests
Kilowieuge	 Names and doses of medications
	Allergies
	 Names of and how to contact the medical team
	 Belief in one's ability to attain specific goals and be successful
Self-efficacy ^{1,2}	 Self-management (making informed and healthy lifestyle choices)
	Medication adherence
	Effective communication
Self-advocacy ¹	Maturity and experience
	 Decision-making and problem-solving
Information actions1	Health literacy
Information gathering ¹	Ability to research the condition outside of the medical visits

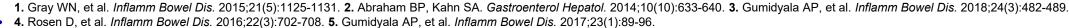
Factors Affecting Transition Readiness

- Adolescents and young adults with IBD generally have low mastery in areas of healthcare utilization and self-advocacy^{1,2}
 - A cross-sectional US multicenter study identified knowledge deficits in availability of healthcare resources (eg, insurance coverage) and completing self-management tasks (eg, scheduling appointments, ordering medication refills) among patients with IBD aged 16 to 22 years (N=75)³

Note: This study was limited by patient selection bias and a relatively small number of patients; patients who were nonadherent to clinic appointments may have been excluded

	 Older age (independently associated with transition readiness)^{3,4} Oalf office au³
Factors associated with transition readiness	 Self-efficacy³ Increased patient-provider transition communication on disease condition and management and on healthcare resources³
	 Patient healthcare satisfaction with communication, time spent with provider, and accessibility and convenience of medical care⁵

IBD=inflammatory bowel disease.

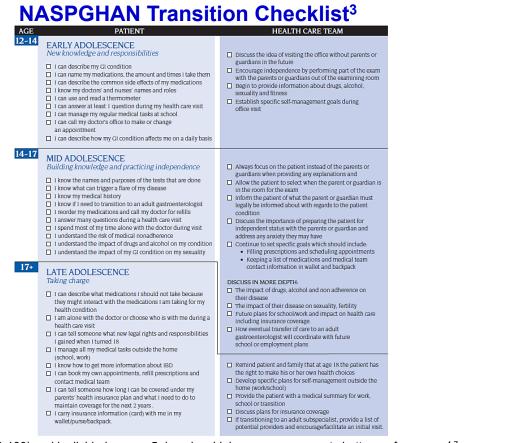


Tools to Assess Transition Readiness

- AAP recommends that providers assess transition readiness¹
- Among 141 pediatric gastroenterology providers surveyed, 75.9% reported using objective measures to assess transition readiness, most common were the NASPGHAN transition checklist or <u>TRAQ</u>^{2-4,a}

Note: This study was limited by possible low response rates, self-selection bias, and logistical issues²

 IBD-KID2 can also be used to assess disease-specific knowledge as component of transition readiness^{5,6}



^aTransition Readiness Assessment Questionnaire (TRAQ) consists of 20 items with a 5-point Likert scale (range, 20-100) and is divided among 5 domains; higher score represents better performance.^{4,7} AAP=American Academy of Pediatrics; HCP=healthcare professional; IBD=inflammatory bowel disease; IBD-KID2=Inflammatory Bowel Disease Knowledge Inventory Device Version 2; NASPGHAN=North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition.

1. Philpott JR, Kurowski JA. *Inflamm Bowel Dis.* 2019;25(1):45-55. 2. Gray WN, Maddux MH. *Inflamm Bowel Dis.* 2016;22(2):372-379. 3. NASPGHAN with support from Centocor Inc. https://www.naspghan.org/files/documents/pdfs/medical-resources/ibd/Checklist_PatientandHealthcareProdiver_TransitionfromPedtoAdult.pdf. Accessed June 3, 2021. 4. Johnson K, et al. *J Pediatr Nurs.* 2021;59:188-195. 5. Bishop J, et al. *Adolesc Health Med Ther.* 2014;5:1-13. 6. The Inflammatory Bowel Disease Knowledge Inventory Device Version 2. https://karger.figshare.com/articles/dataset/Supplementary_Material_for_Validation_of_a_Revised_Knowledge_Assessment_Tool_for_ Children_with_Inflammatory_Bowel_Disease_IBD-KID2_/11881200. Accessed June 11, 2021. 7. Feingold JH, et al. *J Psychosom Res.* 2021;143:110400.



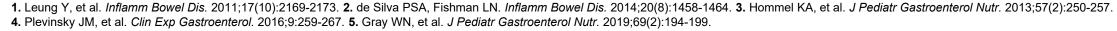
Improving Self-management in Patients With IBD

- Self-management involves taking responsibility and making informed choices regarding diet and lifestyle, monitoring symptoms, managing treatment, and working in partnership with providers^{1,2}
- Adolescents and young adults are considered at risk of poor self-management, which may affect adherence to medications and disease outcomes^{3,4}
- A transition coordinator may help increase selfmanagement skills that support maintenance of disease remission and transition readiness in pediatric patients with IBD⁵

Skills Targeted by a Transition Coordinator and Goals Set by Families⁵

Target Skills	Goals for Patients				
IBD education	 Able to explain IBD to another person Lists current medications Identifies triggers to IBD symptoms 				
Adherence	 Knowledgeable of when to renew pharmacy medications before they run out Adherent to prescribed medication without parental prompting 				
Transition of responsibility	 Calls in pharmacy refills Communicates with medical staff about care Seen alone for part of next clinic appointment 				
Transfer	 Family will set a target date for transfer Family will choose a local adult provider from a list of providers given to the family 				

IBD=inflammatory bowel disease.



Recommendations for a Successful Transition

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Recommendations for Physicians

Clinical Recommendations for Transition of IBD Care¹

Six Core Elements of Transition

Recommendations

- 1. Transition policy Introduce topic of transition at 12-14 yo or soon after diagnosis Set expectations for ideal and ceiling ages for transfer and privacy changes once patient turns 18 yo Anticipate insurance gaps 2. Tracking and monitoring Use electronic health records Track individual and practice-wide progress 3. Transition readiness Assess transition readiness preferably at least 1 year before transfer to allow time to improve areas of deficits Ask for caregiver input on patient strengths and weaknesses 4. Transition planning Tailor education to skill deficits Develop a medical summary and emergency plan Begin early insurance changes Note future plans (eq, school) Identify adult healthcare providers 5. Transfer of care Exchange information with medical summaries Have joint agreement about emergency care prior to first visit with adult provider 6. Transition completion Measure gaps in care including insurance, clinic visits, diagnostic • tests, and treatments · Plan regular feedback to improve processes
- A joint visit with pediatric and adult providers along with patient and family should be considered in transition of care²
 - An IBD transition clinic^a in a single tertiary center in the US was shown to improve patient retention from 33% to 80% and lower no-show rates from 46% to 0% among pediatric patients transitioning to adult care (N=35)³

Note: This study was limited by a relatively small number of patients and should be further evaluated in larger studies

- At time of transfer, the patient should bring a medical summary including the following⁴:
 - Date of diagnosis
 - Location and severity of disease
 - Surgical procedures and complications
 - Medical therapies and adverse reactions
 - Complete vaccination history

^aIBD transition clinic involved an initial visit with a pediatric IBD specialist followed by a multidisciplinary meeting where a summary transition letter was reviewed by adult and pediatric gastroenterologists, a nurse navigator, a social worker, and a nutritionist.³

IBD=inflammatory bowel disease; yo=years old.

Shapiro JM, et al. Clin Gastroenterol Hepatol. 2020;18(2):276-289.
 Philpott JR, Kurowski JA. Inflamm Bowel Dis. 2019;25(1):45-55.
 Williams E, et al. Am J Gastroenterol. 2017;112(suppl 1):S388.
 Bollegala N, Nguyen GC. Gastroenterol Res Pract. 2015;2015:853530.



Transition Recommendations

Starting the transition process early is recommended to help patient and family recognize that all providers are working together to ensure continuous, optimal care¹

NASPGHAN Transition Recommendations^{2,3}

- Start seeing patient without parents to build independence and self-reliance
- Discuss benefits of transition to internal medicine gastroenterology practice
- Select an adult gastroenterologist who recognizes special considerations in childhood-onset disease
- Provide all necessary medical records and summaries to patient and adult provider
- Allow flexibility in transition timing according to individual patient needs

NASPGHAN=North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition.

1. Abraham BP, Kahn SA. *Gastroenterol Hepatol.* 2014;10(10):633-640. 2. NASPGHAN. https://naspghan.org/files/documents/pdfs/medical-resources/Improving%20the%20Transition%20 Process%20for%20Pediatric%20IBD%20Patients%20in%20Canada.%20A%20Case-Based%20Monograph%20Focusing%20on%20IBD.pdf. Accessed June 3, 2021. 3. Baldassano R, et al. *J Pediatr Gastroenterol Nutr.* 2002;34(3):245-248.

Guidelines for Pediatric and Adult Gastroenterologists

Recommendations for Pediatric Gastroenterologists

- Be aware that transition is an ongoing process that may begin as early as the time of diagnosis of IBD
- Ask patients and families about their expectations of the transition process
- Provide patients with information about their disease and treatment plans both verbally and in written form
- Provide an opportunity for patients to be seen in the clinic on their own for at least part of the visit
- Create a written healthcare transition plan together with the patient and family that can be updated on an annual basis
- Highlight differences between pediatric and adult healthcare

Recommendations for Adult Gastroenterologists

- Recognize that patients may not be fully prepared for or aware of the differences between pediatric and adult healthcare
- Collaborate with the pediatric gastroenterologist and team prior to the actual transfer of care
- Anticipate questions from patients about IBD, treatment plans, and impact on body image and sexual health
- Educate patients in understanding adult healthcare system
- Anticipate that newly transferred patients may require longer appointment times during the first few visits
- Recognize that the process of patients taking responsibility for their own care may be gradual



Recommendations for Patients

 Adolescent patients with IBD may use resources and tools to promote self-management during their transition to adult care¹

Smartphone applications ¹⁻³	 GI Buddy (from Crohn's and Colitis Foundation): tracks symptoms, diet, and medications MyIBD (from Hospital for Sick Children): tracks symptoms, medication adherence, and medical history
Websites ^{1,4-6}	 Crohn's and Colitis Foundation and GotTransition.org: provide information and resources for patients, families, and providers about the transition process
MyHealth Passport ^{4,7}	 Website that generates a customized, comprehensive summary card of patient information to expedite medical history review during visits to new physicians Should be routinely updated by patients

IBD=inflammatory bowel disease.



 Kahn SA. Gastroenterol Hepatol. 2016;12(6):403-406.
 MyHealthApps. http://myhealthapps.net/app/details/345/gi-buddy. Accessed June 3, 2021.
 NASPGHAN. https://naspghan.org/files/documents/pdfs/medical-resources/Improving%20the%20Transition%20
 Process%20for%20Pediatric%20IBD%20Patients%20in%20Canada.%20A%20Case-Based%20Monograph%20Focusing%20on%20IBD.pdf. Accessed June 3, 2021.
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 Got Transition. https://gottransition.org/. Accessed June 3, 2021.
 SickKids. https://wapps.sickkids.ca/myhealthpassport/FormPassport.aspx?FormId=43. Accessed June 3, 2021.

Summary

- Pediatric-onset and adult-onset IBD differ in presentation and disease course, so a structured transition process is necessary to ensure continuous, optimal care
- Structured transition from pediatric to adult healthcare may result in improved medication adherence and improved disease outcomes
- Pediatric providers should start the transition process early and follow age-appropriate goals in transition of care
- Key skills needed for patients to achieve transition readiness include knowledge, self-efficacy, self-advocacy, and information gathering
- Resources and tools are available for pediatric gastroenterologists to assess transition readiness and for adolescent patients with IBD to promote self-management during their transition to adult care



Available Resources

- American Academy of Pediatrics
 - Clinical guidelines for transition
- Crohn's and Colitis Foundation
 - GI Buddy (symptom tracker)
 - crohnscolitisfoundation.org (information and resources)
- Hospital for Sick Children
 - MyIBD (symptom tracker)
 - MyHealth Passport (comprehensive patient information)
- National Alliance to Advance Adolescent Health
 - GotTransition.org (information and resources)

- North American Society for Pediatric Gastroenterology, Hepatology, and Nutrition
 - Transition recommendations
 - Healthcare provider transitioning checklist
- Transition readiness assessment tools
 - Transition Readiness Assessment Questionnaire (TRAQ)
 - Inflammatory Bowel Disease Knowledge Inventory Device Version 2 (IBD-KID2)



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Backup



Transition Readiness Assessment Questionnaire (TRAQ)

Transition Readiness Assessment Questionnaire (TRAQ)

Patient Name: Date of Birth: / / Today's Date / / (MRN#

<u>Directions to Youth and Young Adults:</u> Please check the box that best describes your skill level in the following areas that are important for transition to adult health care. There is no right or wrong answer and your answers will remain confidential and private. <u>Directions to Caregivers/Parents:</u> If your youth or young adult is unable to complete the tasks below on their own, please check the box that best describes your skill level. <u>Check here</u> if you are a parent/caregiver completing this form.

		No, I do not know how	No, but I want to Iearn	No, but I am learning to do this	Yes, I have started doing this	Yes, I always do this when I need to
Managing Medications						
1.	Do you fill a prescription if you need to?					
2.	Do you know what to do if you are having a bad reaction to your medications?					
3.	Do you reorder medications before they run out?					
4.	Do you explain any medications (name and dose) you are taking to healthcare providers?					
5.	Do you speak with the pharmacist about <u>drug interactions</u> or other concerns related to your medications?					
Ap	pointment Keeping					
6.	Do you call the doctor's office to make an appointment?					
7.	Do you follow-up on referrals for tests or check-ups or labs?					
8.	Do you arrange for your ride to medical appointments?					
9.	Do you call the doctor about unusual changes in your health (for example: allergic reactions)?					

Tra	cking Health Issues		·	•		
10.	Do you fill out the medical history form, including a list of your allergies?					
11.	Do you keep a calendar or list of medical and other appointments?					
12.	Do you tell the doctor or nurse what you are feeling?					
13.	Do you contact the doctor when you have a health concern?					
14.	Do you make or help make medical decisions pertaining to your health?					
15.	Do you attend your medical appointment or part of your appointment by yourself?					
Tall	king with Providers					
16.	Do you ask questions of your nurse or doctor about your health or health care?					
17.	Do you answer questions that are asked by the doctor, nurse, or clinic staff?					
18.	Do you ask your doctor or nurse to explain things more clearly if you do not understand their instructions to you?					
19.	Do you tell the doctor or nurse whether you followed their advice or recommendations?					
20.	Do you explain your health history to your healthcare providers (including past surgeries, allergies, and medications)?					
Please circle how you feel about the following statements						
		Not at all important	Not too important	Somewhat important	Important	Very Important
Hov	How important is it to you to manage your own health care?		2	3	4	5
How confident do you feel about your ability to manage your own health care?		1	2	3	4	5

