Management of inflammatory bowel disease (IBD) can be challenging and often requires potent immunosuppressant. Patients also frequently require surgical interventions to address complications of their disease. In addition, while the physical effects of IBD are well-recognized, the psychological and social effects on these patients are significant and must also be addressed.

Pediatric onset of IBD is known to be particularly aggressive, necessitating prompt diagnosis, appropriate selection of therapy, and reliable implementation of recommended treatment plans. However, research has shown that recommended care is often not provided to patients. Deficiencies are most often the result of insufficient “care delivery systems” rather than a lack of effort or a lack of desire on the part of care providers to “do the right thing.” While research allows for the development of knowledge regarding what should be done (i.e. appropriate tests and therapy), quality improvement methodology—including planned care—allows for the requisite system redesign that is needed to assure treatment plans are reliably implemented for all patients, so that they receive all recommended care and achieve the best possible outcomes.
**Crohn’s Disease Case Study**

**Profile/Evaluation:** A 14-year-old female initially presented to Nationwide Children's Hospital with abdominal pain, weight loss and anemia. Upper endoscopy and colonoscopy were performed revealing significant inflammation of the terminal ileum and colon. These endoscopic findings and the subsequent biopsy results confirmed the diagnosis of Crohn's disease. She was started on immunosuppressive medications, including prednisone and 6-mercaptopurine.

The IBD team social worker was able to assist with many of these concerns. Transportation vouchers for the patient and her family were secured when alternate methods of transportation were not available, and the social worker was able to assist them in applying for supplemental insurance. The patient began to work with our IBD psychologist in dealing with her stressors and anxiety. She was also successfully changed to, and was adherent with, infliximab therapy as had been recommended, resulting in sustained clinical remission of her disease.

**Outcome:** Having the capability to carefully review this patient outside of the busy clinic setting using pre-visit assessment and population management allowed for the rapid identification of clinical concerns. The IBD team social worker was able to analyze the root cause of the patient’s issues, and then appropriate interventions were made that resulted in a substantially better outcome than she might have otherwise experienced. The patient successfully advanced to biological therapy with improved control over her disease and entered a period of sustained remission.

**ImproveCareNow: A National Collaborative**

As one of the leaders in a multi-institution collaborative, Nationwide Children's is helping other institutions improve outcomes. The collaborative, known as ImproveCareNow, was designed in cooperation with the American Board of Pediatrics as a prototype that could be deployed across all pediatric sub-specialties. Its mission is to build a sustainable collaborative network where all pediatric gastroenterologists work together in a compelling process of continuous quality improvement, innovation and discovery that will, over the next decade, reduce the morbidity and improve the health and wellbeing of children and adolescents with IBD.

The collaborative includes 30 sites with a total of 3,000 patients and nearly 15,000 patient visits. ImproveCareNow aims to improve the management and care of patients with IBD through the use of quality improvement methodology. Examples of methods taught and used by the collaborative include pre-visit assessment, population management, protocols, data auditing and self-management tools. These QI methods, particularly population management and pre-visit assessment, promote advances in health care delivery in part through planned care for all patients with IBD. The principles and methodology learned and developed in
conjunction with ImproveCareNow have been integrated into the IBD program at Nationwide Children’s. Likewise, the successful tools and processes developed at Nationwide Children’s have been shared with ImproveCareNow, and as a result, have been implemented by other sites across the country.

**Quality Improvement at Nationwide Children’s**

Through the use of these quality improvement methods, Nationwide Children’s has made dramatic improvements in the care of IBD patients. We have seen improvements in a variety of process and outcome measures, most notably an increase in clinical remission rates of our IBD population from a baseline of approximately 50 percent to almost 80 percent currently, giving our patients one of the highest rates of remission in the country. A key factor in the success of the program has been the methods used in the management and approach to the IBD population, which focuses on planned visits and optimizing each clinical encounter.

![Nationwide Children’s IBD Remission Rate](chart)

**Planned Care: Pre-visit Assessments and Population Management**

Pre-visit assessment is a process of reviewing the clinical history and charts of all patients prior to their clinic visit, in order to optimize the clinical encounter. Specifically, before the visit, appropriate medication use and dosage is confirmed, prior laboratory results are reviewed and growth and nutritional status are evaluated. The nutrition team is also notified in advance of patients who will need to be seen, either for a routine annual or semi-annual nutritional evaluation, and/or for specific nutritional concerns. Reminders for health maintenance needs, such as flu vaccinations, are also provided.

Population management involves the review of groups of selected patients in between clinic visits. Patients may be categorized and selected based on a variety of different risk factors, such as disease activity, growth failure or prolonged use of corticosteroids. Currently, our process involves the identification and review of all patients with moderate or severe disease activity, as these patients may be at increased risk for complications or hospitalization. These challenging patients are reviewed in detail by the IBD team and specific considerations regarding medication choice, dose adjustment, further evaluation and/or input about frequency of follow-up can be provided.

Nationwide Children’s is working toward implementing planned care for each IBD patient returning to clinic. Complete care requires not only the latest medical and surgical advances, but also addressing the psychosocial needs and promotion of self-management skills of patients with chronic disease.

**Future Directions**

Due in part to the success of the collaborative network, investigators associated with ImproveCareNow, including researchers at Nationwide Children’s, have been awarded approximately 12 million dollars in federal grant funding to further study how to collect and store clinical information for QI and comparative effectiveness research at the time of a clinical encounter, and how to implement QI techniques into routine clinical practice. As part of this effort, the IBD team at Nationwide Children’s is leading the effort to develop and implement an automated process of pre-visit assessment and population management, which would improve both efficiency and care delivery. If successful, these tools will be shared with IBD programs across the country to improve the care delivery system at each site and to improve outcomes for all patients with IBD.
When your child needs a hospital, everything matters.

At Nationwide Children’s, we are creating the future of pediatric health care. We consider every detail. Every decision. Every aspect of the care we provide. From the child who comes to us with complex motility disorders, inflammatory bowel disease, or polyposis. To those with a sprain, broken bone, or a fever. Here, the future health and potential of all children is being shaped. Here, our doctors are revolutionizing your child’s health and the health of future generations. Learn more at NationwideChildrens.org.

Referrals and Consultations
Like all of the specialized programs at Nationwide Children’s, the Division of Gastroenterology, Hepatology and Nutrition accepts referrals from across the U.S. and internationally.

**Online:** NationwideChildrens.org

**Fax:** (614) 722-4000

**Phone:** (614) 722-6200 or (877) 722-6220

**Physician Direct Connect Line for 24-hour urgent physician consultations:**
(614) 355-0221 or (877) 355-0221

Honor-roll ranked among the seven best children’s hospitals in the U.S.
Top 5 in gastroenterology