

Standardizing Healthcare Delivery to Reduce Utilization, the Potential of Evidence-Based Care Pathways

Edward L. Barnes, MD, MPH^{*†‡}

The continued development of novel mechanisms and techniques for the assessment and treatment of Crohn disease (CD) and ulcerative colitis (UC) has led to shifts in both the individual management decisions and the structure of gastroenterology practices in recent years. In addition to a continued focus on improving communication with patients,^{1,2} new strategies focused on risk stratification and the early introduction of more aggressive therapies in an attempt to prevent inflammatory bowel disease (IBD)-related complications are emerging.³ Additionally, the use of decision-making models that are focused on objective data such as those proposed in treat-to-target monitoring strategies have been proposed as one method of improving disease control and ultimately improving outcomes in patients with IBD.^{4,5}

In this issue of *Crohn's & Colitis 360*, Lytvyak et al describe a retrospective, observational, single-center study that evaluated an innovative model of care based on the use of Inflammatory Bowel Disease Clinical Care Pathways (IBD CCP).⁶ The IBD CCP are standardized, evidence-based management algorithms that provide structured, sequenced, diagnostic, and clinical interventions for patients with CD and UC. For this particular analysis, the authors assessed emergency department (ED) visits as a marker of the impact of IBD CCP on resource utilization. ED visits were stratified into IBD-related

and non-IBD-related categories, allowing the authors to perform important analyses of unplanned IBD care utilization.

A unique data collection method that combined data from both the electronic medical record and manual chart review allowed the authors to evaluate several important clinical variables and potential confounders in their analyses of the impact of the IBD CCP on care utilization. Similar to prior reports,⁷ the authors identified a population of frequent ED users who account for a disproportionately high healthcare burden. However, the analyses of predictors of ED utilization, and the comparisons of managed and nonmanaged patients who presented to the ED, were relatively nonrevealing.

The authors are to be congratulated for demonstrating the potential benefits of a dedicated clinical care pathway for patients with CD and UC. All patients included in this study were cared for in a specialized IBD Unit and were presumably managed using the IBD CCP, thus this study did not employ a control group during the study period after IBD CCP implementation to allow for direct comparison during the same time frame. Although a decrease in ED visits was demonstrated, the potential exists that other factors also contributed to the findings (which the authors appropriately attempted to control for). It is important to note that by having access to the physicians in the IBD Unit (and the IBD CCP), the patients in the study may have had a significant advantage compared to other patients that were not managed at the center. As noted in a recent study from Ontario, access to specialist care may be an integral factor in decreasing ED visits among patients with IBD.⁸

This study is particularly important because it provides further evidence that innovative, and in some cases standardized, approaches to the management of IBD can significantly improve outcomes. Given the increasing number of mechanisms available to treat patients with CD and UC, many patients with more severe presentations are evaluated in tertiary care centers. In recent years, multiple IBD centers have developed new multidisciplinary care models that are focused not only on clinical decision making with regard to specific medical therapies, but also involve members of other specialties and disciplines including surgery, nutrition, behavioral health, and social work. These approaches can have significant benefits for individual patients and for the healthcare system as a whole.

Received for publications August 17, 2020; Editorial Decision August 18, 2020.

*Division of Gastroenterology and Hepatology, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA; †Multidisciplinary Center for Inflammatory Bowel Diseases, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA; ‡Center for Gastrointestinal Biology and Disease, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, USA

Conflict of Interest: Edward L. Barnes has served as a consultant for AbbVie, Gilead, Pfizer, Takeda, and Target Pharmsolutions.

Address correspondence to: Edward L. Barnes, MD, MPH, Division of Gastroenterology and Hepatology, University of North Carolina at Chapel Hill, Campus Box #7080, 130 Mason Farm Road, Chapel Hill, NC 27599-7080 (edward_barnes@med.unc.edu).

© The Author(s) 2020. Published by Oxford University Press on behalf of Crohn's & Colitis Foundation.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact journals.permissions@oup.com

doi: 10.1093/crocol/otaa081
Published online 14 October 2020

An emphasis has been placed on the development of evidence-based algorithms for decision making and clinical care in multiple areas of IBD. The authors of the current study employed working groups to aid in the construction of standardized care algorithms and protocols. Similar evidence-based methodology may produce traditional guidelines such as those used in the management of CD after an intestinal resection,⁹ or may be implemented in quality initiatives such as IBD Qorus with a focus on specific areas such as nutrition.¹⁰ Recently, an IBD referral pathway has also been developed to guide the early evaluation and management of patients with CD and UC.¹¹

In addition to standardized protocols that have developed within centers or working groups, multiple models have also emerged with the objective of improving care delivery for patients with IBD. Among the most noteworthy care models that have emerged in recent years is the IBD Specialty Medical Home.¹² In a retrospective evaluation, patients at the University of Pittsburgh Medical Center demonstrated a 47% reduction in ED visits and a 36% reduction in hospitalizations after enrollment in the IBD Specialty Medical Home.¹³ Although an IBD Specialty Medical Home may not be the best model for all practices given the need for high-utilizer, high-cost members, and a large population of patients with IBD,¹⁴ the care coordination present in an IBD Specialty Medical Home focuses on the biological and psychosocial drivers of outcomes in patients with IBD. This focus may allow a system to provide efficient, high-quality care, particularly to those patients with IBD who use healthcare excessively.

As recognized in a recent review from the American Gastroenterological Association, the integration of psychosocial care appears to be critical in utilizing a multidisciplinary approach to improve outcomes in IBD.¹⁵ In addition to the IBD Specialty Medical Home, multiple other models for incorporating psychosocial care into a practice have been described. These include routine screening for psychiatric comorbidities, integrated care utilizing team-based models, and a collaborative care model where behavioral health providers are located within a gastroenterology clinic.¹⁵ Although psychiatric comorbidities were not associated with increased ED utilization in the study by Lytvyak and colleagues, multiple prior studies have indicated a potential link between psychiatric comorbidities and IBD-related outcomes,^{7,16,17} and thus the inclusion of psychosocial care in specialized, evidence-based care pathways is likely critical to improving longitudinal care of patients with CD and UC.

The identification of frequent ED users (and other high-user groups) should continue to be a focus of future research endeavors. As hospital systems and practices continue to strive for value-based approaches to the management of patients with CD and UC, the identification of those patients at greatest risk of becoming high utilizers will be critical. As noted by Lytvyak et al, the presence of multiple comorbidities has been identified as a risk factor for increased healthcare utilization in prior

studies,⁷ and may represent a subset of patients with IBD that would benefit from tailored interventions. All of the patients in the study by Lytvyak and colleagues received care in the IBD Unit at the University of Alberta; however, in other healthcare systems, fragmentation of care may also contribute significantly to healthcare costs and increased utilization among individual patients.¹⁸

By implementing a series of IBD CCP, the authors have demonstrated an innovative method of potentially improving efficiency in the healthcare system by decreasing ED utilization among a high-risk population. This framework likely allows for larger scale implementation, as well as scheduled review and revision of the IBD CCP, based on emerging literature and newer treatment mechanisms. The IBD CCP should motivate us to continue to examine new methods of evidence-based healthcare delivery, with the objective of improving outcomes in this population.

REFERENCES

1. Siegel CA. Shared decision making in inflammatory bowel disease: helping patients understand the tradeoffs between treatment options. *Gut*. 2012;61:459–465.
2. Rubin DT, Krugliak Cleveland N. Using a treat-to-target management strategy to improve the doctor-patient relationship in inflammatory bowel disease. *Am J Gastroenterol*. 2015;110:1252–1256.
3. Siegel CA, Bernstein CN. Identifying patients with inflammatory bowel diseases at high vs low risk of complications. *Clin Gastroenterol Hepatol*. 2020;18:1261–1267.
4. Ungaro R, Colombel JF, Lissos T, et al. A treat-to-target update in ulcerative colitis: a systematic review. *Am J Gastroenterol*. 2019;114:874–883.
5. Colombel JF, D'Haens G, Lee WJ, et al. Outcomes and strategies to support a treat-to-target approach in inflammatory bowel disease: a systematic review. *J Crohns Colitis*. 2020;14:254–266.
6. Lytvyak E, Sutton R, Dieleman L, et al. Management of inflammatory bowel disease patients with clinical care pathways reduces emergency department utilization. *Crohn's Colitis* 360. 2020.
7. Click B, Ramos Rivers C, Koutroubakis IE, et al. Demographic and clinical predictors of high healthcare use in patients with inflammatory bowel disease. *Inflamm Bowel Dis*. 2016;22:1442–1449.
8. Nguyen GC, Bouchard S, Dion G. Access to specialists and emergency department visits in inflammatory bowel disease: a population-based study. *J Crohns Colitis*. 2019;13:330–336.
9. Nguyen GC, Loftus EV Jr, Hirano I, et al. American gastroenterological association institute guideline on the management of Crohn's disease after surgical resection. *Gastroenterology*. 2017;152:271–275.
10. Hwang C, Issokson K, Giguere-Rich C, et al. Development and pilot testing of the inflammatory bowel disease nutrition care pathway. *Clin Gastroenterol Hepatol*. 2020;18:2645–2649. doi:10.1016/j.cgh.2020.06.039.
11. Kinnucan J, Binion D, Cross R, et al. Inflammatory bowel disease care referral pathway. *Gastroenterology*. 2019;157:242–254.e6.
12. Regueiro MD, McAnallen SE, Greer JB, et al. The inflammatory bowel disease specialty medical home: a new model of patient-centered care. *Inflamm Bowel Dis*. 2016;22:1971–1980.
13. Regueiro M, Click B, Anderson A, et al. Reduced unplanned care and disease activity and increased quality of life after patient enrollment in an inflammatory bowel disease medical home. *Clin Gastroenterol Hepatol*. 2018;16:1777–1785.
14. Regueiro M, Click B, Holder D, et al. Constructing an inflammatory bowel disease patient-centered medical home. *Clin Gastroenterol Hepatol*. 2017;15:1148–1153.e4.
15. Szigethy EM, Allen JI, Reiss M, et al. White paper AGA: the impact of mental and psychosocial factors on the care of patients with inflammatory bowel disease. *Clin Gastroenterol Hepatol*. 2017;15:986–997.
16. Barnes EL, Kochar B, Long MD, et al. Modifiable risk factors for hospital readmission among patients with inflammatory bowel disease in a nationwide database. *Inflamm Bowel Dis*. 2017;23:875–881.
17. Kochar B, Barnes EL, Long MD, et al. Depression is associated with more aggressive inflammatory bowel disease. *Am J Gastroenterol*. 2018;113:80–85.
18. Cohen-Mekelburg S, Rosenblatt R, Gold S, et al. Fragmented care is prevalent among inflammatory bowel disease readmissions and is associated with worse outcomes. *Am J Gastroenterol*. 2019;114:276–290.