

## Economic Impact of Irritable Bowel Syndrome: What Does the Future Hold?

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It has been estimated that approximately 10% to 15% of people in North America have irritable bowel syndrome (IBS).<sup>1</sup> Despite the wide-ranging physical manifestations of this disorder, which include cramping, abdominal pain, constipation, bloating, and diarrhea, IBS receives little attention compared with less prevalent conditions, perhaps because of the nature of the symptoms of IBS and/or because most people with IBS do not seek medical attention.<sup>2</sup> It is also estimated that among patients with IBS, approximately 25% seek medical care for their symptoms, and only 5% are seen in the tertiary care setting. However, although it appears that the percentage of patients seeking medical care for IBS symptoms represents a small percentage of those with IBS, the high prevalence of the disorder results in sizable direct costs for physician visits and pharmacologic treatments. Kozma and colleagues<sup>3</sup> have reported that IBS-related physician visits (adjusted for prevalence) occur at approximately the same rate as visits for asthma and migraine headaches. Therefore, it should not be surprising that IBS results in a significant economic burden in the United States<sup>4</sup>—upward of \$30 billion is spent annually on this condition (excluding prescription and over-the-counter medications).<sup>5</sup> Perhaps because of the frequently nonspecific nature of the symptoms, the magnitude and source of the costs attributable to IBS have remained largely unrecognized by the healthcare system. The reports in this issue are among the first to explore the complex relationship between IBS and its direct (use of healthcare resources) and indirect costs (missed days from work [absenteeism], decreased work productivity [presenteeism]) and to demonstrate the potential economic and productivity benefits that may accrue through successful management of IBS.

Although the direct costs associated with IBS are substantial,<sup>5</sup> the indirect costs from productivity losses in the workplace appear to be even greater.<sup>5</sup> Hahn and colleagues<sup>6</sup> report that at least one third of IBS patients miss, on average, 1 day of work per month because of their IBS symptoms and that an even greater percentage of patients report a decrease in their work or activities because of this disorder. Absenteeism and presenteeism are growing concerns for employers and healthcare consumers, who are forced to bear the brunt of lost work productivity and to subsidize employee healthcare costs. It is, therefore, critical for healthcare providers and managed care organizations to investigate possible solutions or approaches for employers on how best to manage the large, often unrecognized costs of IBS.

Another form of indirect cost that is less recognized is the decrement in quality of life (QOL) wrought by IBS; it is well established that IBS patients experience decreased QOL.<sup>7</sup> This diminished QOL may result from several features of the condition that are seen with other gastrointestinal (GI) motility disorders. Patients with IBS frequently have symptoms for many years, in part because of physician- and patient-related issues, such as intermittent exacerbation of multiple symptoms, delayed diagnosis,<sup>5</sup> and historically ineffective treatment options.<sup>8</sup> In fact, the negative impact of IBS symptoms on health-related QOL appears similar to that of disease-specific symptoms in patients with other long-term episodic disorders, such as migraines, asthma, and gastroesophageal reflux disease.<sup>7</sup>

What, then, are some potential recommendations for a more cost-effective management approach to IBS? Obviously, better recognition of the scope of the problem by a variety of healthcare professionals, including primary care physicians, is a potential place

to start. Based on what is known about the epidemiology of IBS in the United States, employers who rely on a workforce composed largely of women would be the most likely to derive potential benefit from such an approach and could serve as models for disease intervention initiatives. Additionally, healthcare providers should be educated as fully as possible regarding the diagnostic process and the yield of medical testing in patients with suspected IBS. Such measures could serve to drive down the direct and indirect costs of IBS by decreasing unnecessary testing and time away from work. To help address this problem, healthcare providers have attempted to target more effective approaches that reduce resource utilization involving diagnostic procedures and the frequency of office visits.<sup>8</sup> Additionally, physicians now have access to new and increasingly effective therapies for the management of IBS in the form of the serotonergic agents tegaserod and alosetron. Tegaserod and alosetron were the only 2 medications to receive grade A recommendations from the American College of Gastroenterology Functional GI Disorder Task Force based on the quality of published evidence supporting their efficacy in the treatment of patients with IBS with constipation (IBS-C) and IBS with diarrhea (IBS-D), respectively.<sup>9</sup> So-called traditional therapies, such as bulking agents, laxatives, antidiarrheal agents, antispasmodics, antidepressants, and behavioral therapy, all received grade B recommendations from the Task Force, indicating that these agents have shown variable therapeutic effects in studies with intermediate or, in some cases, inadequate methodologic quality. In other words, there are scant data to support the use of these therapies in patients with IBS. The serotonergic agents, specifically designed to act at the level of the functional unit of the enteric nervous system, mediate the basic GI functions of motility, secretion, and visceral sensation, all of which are altered in IBS. In rigorous clinical trials each agent has been shown to be superior to placebo for relief of the overall and individual symptoms of IBS, and each has been shown to improve health-related QOL.

Although it is clear both serotonergic therapies are clinically effective, they are also both associated with potentially untoward effects: alosetron can result in severe constipation in a small subset of patients and has been linked to ischemic colitis, whereas tegaserod has been associated with infrequent severe diarrhea. Consequently, alosetron was removed from the market in 2000. Rereleased in 2002, it is available again at a reduced dose and through a restricted prescribing program for women with severe IBS-D that is refractory to traditional therapies. Prescribers of alosetron must acknowledge familiarity with the indications and effects of the medication, and women receiving alosetron must sign an informed consent document and are encouraged to provide postmarketing surveillance information to the manufacturer. Although tegaserod has not been associated with an increased incidence of ischemic colitis, enough cases of severe diarrhea have been reported to prompt the US Food and Drug Administration recently to mandate that the manufacturer issue a warning letter regarding this effect. However, ischemic colitis is reported to be increased in patients with IBS,<sup>10,11</sup> and therefore may not be a direct result of tegaserod therapy.

The 5 articles included in this supplement to *The American Journal of Managed Care* address many of the “real-world” issues facing patients with IBS, their employers, and managed care providers. The authors explore the varied costs associated with IBS and the multiple treatment options available while providing readers with a comprehensive review of the epidemiology, prevalence, management, and economic impact of IBS. Moreover, they suggest several initiatives that could serve to better identify and manage the symptoms and costs of IBS.

It should be noted that 3 of the 5 articles deal with analyses focused on the effects of tegaserod, indicated for short-term use (an initial 4-6 weeks, followed by an additional 4-6 weeks if responsive to therapy) in women with IBS-C. More recently, tegaserod was approved for the treatment of chronic idiopathic constipation in men and women younger than age 65 with no time restriction

for therapy. Little is known about the potential increase or decrease in the costs (direct and indirect) of IBS resulting from the use of serotonergic agents. In a previous analysis of alosetron, Ladabaum<sup>9</sup> reports the results of a decision analysis model aimed at examining the tradeoff between improvement in symptoms and incidence of complications associated with this therapy for IBS-D. This study concluded that the benefit-to-risk profile of alosetron was favorable, but that it was associated with a potentially sizable cost per quality-adjusted life-year.<sup>9</sup> However, given that alosetron administration is restricted to women with severe IBS-D refractory to traditional therapies and that enrollment in a surveillance program is required, the applicability of additional cost analyses of alosetron-based intervention strategies may be limited. As previously mentioned, tegaserod is the only other approved therapy that has been shown to be reliably superior to placebo for IBS symptom relief in multiple methodologically sound clinical trials. Therefore, it makes sense to use this medication as a template for additional analyses of this type.

In the first article of this issue, Brooks Cash and colleagues present a comprehensive review of the epidemiology of IBS and discuss the direct and indirect costs associated with IBS. The authors conclude their article by providing potential mechanisms by which employers and managed care providers can better recognize the symptoms and prevalence of IBS in their workforce and, in so doing, possibly avoid or limit the significant costs of IBS-related absenteeism and presenteeism.

The second article, by Bonnie Dean and colleagues, presents a real-world study of impaired work productivity and health-related QOL in patients with IBS. A cross-sectional survey study design is used to quantify the indirect costs associated with this disorder and the impact of these costs on the employer.

In the third article, by Michael Bloom and colleagues, the authors present a budget impact model developed to assess the effect of tegaserod use on a managed care formula-ry. The model estimates costs for patients

with IBS 6 months before and 6 months after the initiation of tegaserod therapy.

Judith Stephenson and colleagues discuss the impact of tegaserod therapy on GI-related resource utilization in the fourth article of this supplement. In this retrospective, longitudinal study, GI-related resource utilization is assessed and compared in tegaserod users and nonusers.

Finally, in the fifth article, Dean Smith and colleagues present an economic model that assesses the indirect costs associated with tegaserod therapy in patients with IBS-C. The purpose of this study is to illustrate to employers the indirect costs associated with IBS-C and the potential cost savings that accrue after effective therapeutic intervention.

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