Irritable bowel syndrome (IBS) is a complex disorder that affects a significant portion of the world’s population and is the most common functional gastrointestinal (GI) disorder seen by primary care physicians and specialists. Despite recent advancements in our understanding of the disorder’s physiology and etiology, IBS remains difficult to diagnose and treat. These challenges commonly make physicians frustrated with understanding and properly treating a patient with IBS. Many patients seek medical care in fear that they have cancer or some other organic bowel disease. Furthermore, the pejorative views of IBS shared by many in the medical community can leave the patient feeling misunderstood and frustrated at the thought of being stigmatized with a neurotic label. By dealing with concerns and fears about serious illnesses and understanding the psychosocial dimensions of IBS, patients can leave the physician’s office reassured and educated with a better understanding of their diagnosis.

Epidemiology and impact on society
The impact of IBS on our society needs to be examined from the perspective of prevalence, its impact on the healthcare industry, and the financial burden it has brought to our society. Irritable bowel syndrome is characterized by symptoms of abdominal pain, altered bowel movements, bloating, and disordered defecation. Empiric studies have reported that as much as 75% of individuals have had symptoms of IBS and approximately 15% to 20% meet the diagnostic criteria. In comparison, prevalence rates for other common diseases are diabetes mellitus, 3%; asthma, 4%; heart disease, 8%; and hypertension, 11%. Although a high prevalence of individuals meet IBS diagnostic criteria, only a small percentage of these individuals seek medical attention. Studies have found that the prevalence of IBS in the community is much higher in females, an estimated 3-to-1 ratio to males. Irritable bowel syndrome is the most common functional GI disorder, and it is one of the top 10 reasons for visits to primary care physicians.
many lost work days as other workers.10 Totals an estimated $350 million every sales of laxatives in chain drug stores alone financially, this disorder is having a significant impact on the healthcare industry and imposing a financial burden on the US society as a whole. It is estimated that IBS results in an $8 billion annual expenditure in direct medical costs.9

Research shows that over-the-counter sales of laxatives in chain drug stores alone totals an estimated $350 million every year, and people with continued symptoms of IBS have three to four times as many lost work days as other workers.10 Relating to work, research from Tufts University in Boston has proven IBS to be the second leading cause of absenteeism from work and school after the common cold.11 Furthermore, the financial burden increases with the high frequency of physician and hospital visits by patients with IBS. One study suggests that patients with IBS account for approximately 3.5 million physician visits annually.12

Diagnosis and classification

Many primary care physicians and specialists are unfamiliar with the definition and diagnostic criteria for IBS. A number of investigators in this line of research have come to a multinational consensus on the disorder’s definition and criteria known as the Rome II criteria.13 It is useful for the practitioner to be familiar with the Rome II criteria (Figure 1). The key to diagnosing this functional disorder is to identify the positive symptoms and any alarm symptoms that would indicate other disorders (Figure 2).13 Physicians need to be able to exclude other conditions in a cost-effective manner by using minimal, yet sufficient, laboratory studies. A physical examination and laboratory tests, including complete blood cell count, erythrocyte sedimentation rate, blood chemistry, thyroid function tests, and liver function tests may also be used to exclude other diseases.14 When diarrhea is the only symptom, additional tests such as stool test for ova and parasites and tests for lactase deficiency may also be used for exclusion purposes. The differential diagnoses of IBS is limited and included in Figure 3.15

Additional diagnostic studies used will depend on the patient’s predominant symptom of diarrhea, constipation, or pain/bloating/gas. If, after the initial clinical and laboratory evaluation, the patient has any signs of organic diseases, additional tests should be done. If the patient has any alarm symptoms such as anemia, guaiac positivity, or hematochezia, colonoscopy should be done. Patients younger than 50 years who have no alarm symptoms should have at least flexible sigmoidoscopy. Colonoscopy should always be considered to exclude other possible diseases when the patient is 50 years old and has non alarming GI symptoms.

If IBS is diagnosed, the next level of assessment is the severity of the disorder. The spectrum of severity ranges from mild and sporadic symptoms to severe and continuous symptoms associated with frequent use of healthcare services and poor quality of life.16 Self-evaluation should be used to determine the level of severity of IBS symptoms. After the initial visit, patients should be encouraged to maintain a 1- to 2-week diary, recording drugs taken, food and beverage intake, physical activity, and actions taken or plans changed as the result of bowel awareness and discomfort.17 In addition to keeping a diary of symptoms, the patient should rate the severity and degree of distress caused by the following eight GI symptoms: abdominal pain or cramping, abdominal tenderness, diarrhea, constipation, bloating, belching, flatulence, and nausea.18 An example of an easy rating scale could be a basic 5-point scale with 0 meaning not a problem; 1, mild severity and distress; 2, moderate severity and distress; 3, severe severity and distress; and 4, debilitating severity and distress.
Etiology—the biopsychosocial model

As stated before, recent studies have made significant progress in understanding the etiology of IBS symptomatology. Over the years, clinical investigators of IBS have shifted their focus from a biomedical model to include that of a biopsychosocial model for improving our understanding of the complex nature of IBS. In 1977, Engel stated the following with regard to the need for a new medical model:

To provide a basis for understanding the determinants of disease and arriving at rational treatments and patterns of health care, a medical model must also take into account the patient, the social context in which he lives, and the complementary system devised by society to deal with the disruptive effects of illness, that is, the physician role and the health care system. This requires a biopsychosocial model.

Pathophysiological factors

■ Abnormal motility—Irritable bowel syndrome is known to be a primary GI motility disorder. Peristalsis or intestinal motility, which is contraction of intestinal muscles and movements of its contents, is controlled by nerves, hormones, and electrical activity within the muscles of the GI tract. Patients with IBS usually have an abnormal electrical rhythm in the smooth muscle of the colon and rectum. It has been found that these abnormal rhythms may stem from nonbiological factors such as environmental events, stress, and psychological factors. These findings have led to the development of the concept of the brain-gut connection.

■ Visceral hypersensitivity (hyperalgesia)—Studies in the area of pathophysiology have focused on the pain thresholds of patients with IBS. The literature suggests that patients with IBS have an increased sensitivity to abdominal distentions and a lower threshold for pain in the small bowel and colon. Balloon-distention studies by Whitehead and colleagues suggest that patients with IBS have more pain at lower levels of balloon volumes and pressure than control subjects have at higher levels of balloon volumes and pressure. One possible explanation of these findings is that the viscous receptors are changing in sensitivity through the possible recruitment of silent nociceptors or peripheral sensitization in response to ischemia, distention, inflammation, infection, or psychiatric factors.

Psychosocial factors

Previous studies have investigated the relationship between numerous psychosocial factors and IBS symptom severity. The research has included looking at factors such as stress, coping strategies, social support, perfectionism, anger, anxiety, depression, and many others. These studies derive from a prominent and well-accepted framework to the conceptualization of IBS which is known as the biopsychosocial model. Research has repeatedly confirmed that the role of psychosocial factors contributes exceedingly to the development and perpetuation of IBS symptoms.

■ Stress—One of the most common relationships examined in IBS research is between stress and IBS symptoms. These studies have considered the relation of IBS to both major life stress and minor daily hassles. Findings have been inconsistent in these studies, but the research has determined a strong association between stress and IBS symptoms. It is clear that stress directly affects the functioning of the GI system. For example, the human stress response releases hormones that can trigger autonomic extrinsic nerves in the GI tract to increase or decrease contractions, which will alter intestinal transit, thereby resulting in diarrhea or constipation.

■ Sexual and physical abuse—Drossman and his colleagues at the University of North Carolina at Chapel Hill have published a number of studies supporting the idea that female patients with IBS report a significantly higher level of early sexual and physical abuse than reported by patients who do not have IBS. Researchers have suggested a possible pathway between early abuse and IBS. Blanchard and his research team propose the idea that the physiologic predispositions to the development of GI symptoms added to the psychological arousal and distress brought on by early abuse lead to the manifestation of GI symptoms. Henceforth, if illness behaviors are reinforced, symptoms will amplify and the individual will be more likely to become a seeker of healthcare.

■ Comorbidity with mental disorders—Several studies have reported a high prevalence of psychiatric illness in patients with IBS, some reaching as high as 93%. The psychiatric disorders predominantly found with IBS are major depression, panic disorders, generalized anxiety disorders, social phobia, and somatoform disorders. A large-sample study reported anxiety disorders being the most common psychiatric disorder found, including 52.4% of the sample. Mood disorders followed with a prevalence of 10.4% in the sample population.

Treatment modalities

Considering the complex nature of the etiology of IBS, it is inevitable that an ideographic, multicomponent approach be used for optimal treatment outcome.

It is important for the physician to take an individualized approach to treatment and to acknowledge the importance of the physician-patient relationship in the process of treatment. All treatment modalities should take into consideration the patient’s predominant symptoms and symptom severity. Furthermore, it is of extreme importance to take into consideration the physiologic and psychosocial factors and the interaction between the two.

Patient education

One of the main goals of patient education is to help build and maintain the therapeutic relationship between physician and patient. The first step in all treatment planning for IBS is to educate the patient about the disorder. As already mentioned, many patients come to the physician with extreme anxiety and fear of having a serious disease like cancer. Physicians should use vernacular terminology in educating patients about IBS to ensure a clear understanding from the patient’s perspective. A clear explanation of the disorder will comfort patients in knowing what is happening with their bodies. Patients should also be educated as to what treatment options are available. They should be given an explanation as to why a specific treatment plan will be most effective for them and the importance of their involvement in the treatment.

Dietary modifications

Most dietary studies suggest that specific foods or food allergies do not generally contribute to the development of IBS symptoms. Many studies, however, do report that individuals with IBS can exacerbate their symptoms by ingesting certain types of food substances. Patients who consume low-fiber diets, caffeine, alcohol, nicotine, and certain vegetables (cabbage, broccoli) are more likely to have problems with bowel function than individuals without IBS. More recent
research has focused on treating patients whose predominant symptom is constipation with increased fiber intake. Some studies show that fiber decreases the GI transit time in uncomplicated constipation and can reduce symptoms of constipation. 49

Pharmacotherapy
Anticholinergic agents are probably the most commonly prescribed medications for the treatment of patients with IBS. The anticholinergic agent is believed to reduce the stimulated colonic motor activity. This medication is used primarily for patients whose predominant symptoms are pain or diarrhea. Dicyclomine hydrochloride (Bentyl), hyoscymine sulfate (Levsin), chlordiazepoxide hydrobromide (Donnatal) are some of the products that are commonly prescribed for patients with IBS. Pharmacotherapy options for patients with constipation-predominant IBS include bulk-forming agents, stool softeners, and GI-stimulant laxatives. Antidiarrheal agents, including both bulk-forming agents and GI relaxants, are most commonly used for treatment with diarrhea-predominant IBS. The most frequently used antidiarrheal agent is loperamide hydrochloride (Imodium), which has been proven to be an effective treatment option for relief of diarrhea and urgency symptoms. 50 51 Antidepressant medications have been useful in patients who have pain-predominant symptoms alone or in combination with signs of depression such as fatigue, sleep disturbance, and weight loss. The most current treatment trials are looking at agents that target serotonin receptors. 52 In addition to use of currently available modes of drug therapy, simply increasing daily water intake may also help to alleviate GI symptoms.

Psychological and behavioral therapy
A number of psychological treatment modalities are used today to treat patients with IBS. Psychological and behavioral treatment modalities can be used together with pharmacotherapy and should always include an educational component. These treatment modalities are usually used in patients with the more severe symptoms. One mode of behavioral treatment being used today is hypnotherapy. Therapists use hypnotherapy to focus on relaxation, control of bowel motility, and ego strengthening. 53 Research shows that brief hypnotherapy with regular home practice of autogenic exercises is effective in patients with IBS. 54 Other modes of behavioral therapy used to reduce the sympathetic nervous system activity are relaxation response training, meditation, and autogenics training. Biofeedback is an additional option in this treatment category and may be extremely effective.

Cognitive-behavioral modes of therapy are the most commonly used today for IBS patients. Studies suggest that cognitive behavioral therapy is especially good for reduction of abdominal pain, diarrhea, and bloating, as well as for reduction of depression and anxiety symptoms. 55 56 These modes of therapy include identifying major stressors in the patient’s life and identifying the cognitions that can increase the patient’s level of distress. The next step is to teach patients how to restructure their thoughts as a new way of coping with their current stressors. The patients need a more effective way to deal with stressful events in their daily lives and to try to counteract cognitive distortions and attributions that might be contributing to their overall arousal and distress. This therapy is highly effective when accompanied with education on IBS and relaxation training. Modes of relaxation training therapy include techniques such as diaphragmatic breathing and progressive muscle relaxation.

These treatment modalities can be used singly or in combination with each other, depending on the patient’s needs for relief of IBS. If properly used, these treatment modalities should be effective. To measure the effectiveness of the treatment, physicians and patients should regularly rate the severity of the IBS symptoms and the distress that they cause. If improvements are not found, then a different method of treatment should be implemented.

Comments
The effects of IBS symptoms on an individual’s quality of life are considerable. Irritable bowel syndrome can be physically and psychologically debilitating, thus significantly diminishing the patient’s quality of life. Irritable bowel syndrome is a complex disorder that affects a significant portion of the world’s population, and it causes a great deal of suffering for patients and challenges to the physicians trying to treat them. Despite the high prevalence of IBS in the general population, understanding of the disorder’s etiology and treatment options are limited. Although IBS can be difficult to diagnose, education will provide physicians with a greater probability of making a correct diagnosis and lead to a cost-effective method of evaluation and improve the quality of care of patients by lowering their anxiety and fear of the unknown.

References