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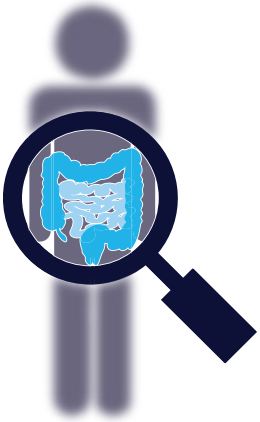


PUTTING THE FOCUS ON INFLAMMATORY BOWEL DISEASE

UNDERSTANDING THE IMPACT OF COMPLEX CHRONIC DISEASES BEYOND DIABETES AND HYPERTENSION

WHAT IS INFLAMMATORY BOWEL DISEASE (IBD)?

IBD INCLUDES TWO CHRONIC AUTOIMMUNE DISEASES THAT CAN INCLUDE INFLAMMATION OF ALL OR PART OF THE DIGESTIVE TRACT[1,2]

CD AND UC ARE LIFELONG CONDITIONS WITH NO CURE[3]

Both diseases are associated with:

- Increased bowel movements with, on average, 4 to 6 stools per day (frequency depends on severity of disease)[4]
- Periods of inflammation and remission[5]
- Changes in the bowel tissues and an increase in risk for colorectal cancer[6]
- Destructive inflammation, intestinal bleeding, and serious complications[6]

WHAT ARE THE SYMPTOMS OF IBD?

PATIENTS WITH CD AND UC MAY EXPERIENCE MANY OF THE SAME SYMPTOMS[7]

Symptoms of CD and UC include:

Symptoms	CD	UC
Abdominal Pain	X	X
Diarrhea	X	X
Mucus in Stool		X
Weight Loss	X	X
Anemia		X
Steatorrhea[a]	X	
Fever	X	X

[a]Steatorrhea: >7 g fecal fat per day while consuming ≥100 g dietary fat per day.[8]

THESE SYMPTOMS MAY IMPACT A PATIENT'S ABILITY TO WORK[9]

From a survey of 5576 members of seven national IBD organizations affiliated with the European Federation of Crohn's and Ulcerative Colitis Associations:

Impact of IBD Symptoms	Patients with CD	Patients with UC
Experienced flare-ups every few months	**71.0%**	**67.7%**
Affected ability to perform job functions	**71.7%**	**65.6%**
Caused change in job or job responsibilities	**37.6%**	**27.6%**

UNFORTUNATELY, PATIENTS WITH IBD ARE OFTEN MISDIAGNOSED[6,10]

- IBD is sometimes confused with irritable bowel syndrome (IBS)[6,10]
- While symptoms are similar, IBS does not cause inflammation and does not lead to irreversible damage of the intestines, intestinal bleeding, or the harmful complications caused by IBD[6]

WHO GETS IBD?

THE INCIDENCE OF IBD IN THE UNITED STATES IS INCREASING[3]

Number of Americans With IBD: 1.4 million[11,12]

~700,000 With Crohn's Disease

~700,000 With Ulcerative Colitis

Estimated New Cases of IBD Every Year: +70,000[3]

IBD ONSET HAPPENS AT A YOUNG AGE

- Average age of peak onset is **15 to 35 years of age**[3]
  - Although the disease can present at any time

OTHER RISK FACTORS ASSOCIATED WTH IBD

- IBD is found more often in northern climates and in urban areas[3]
- IBD is more common in Caucasian and Ashkenazic Jewish people[13]
- **CD** and **UC** affect both men and women—**UC** is more common in men[3,13]

TWO OF EVERY 1000 EMPLOYEES WITHIN YOUR ORGANIZATION MAY HAVE IBD[13]

WHAT ARE THE HEALTH RISKS OF IBD?

OTHER SERIOUS CONDITIONS ARE ASSOCIATED WITH IBD, EACH REQUIRING SPECIALIZED CARE[14,*]

Additional chronic inflammatory conditions are higher in patients with IBD than in those without[15,†]

1.5x MORE LIKELY to have **Asthma**

1.7x MORE LIKELY to have **Psoriasis**

1.9x MORE LIKELY to have **Rheumatoid Arthritis**

2.3x MORE LIKELY to have **Multiple Sclerosis**

Patients with IBD are also at risk for other conditions[14,*]

Depression, Anxiety

2x–3x HIGHER incidence compared with patients without IBD[14]

Cardiovascular Disease

8x HIGHER rate of venous thromboembolism compared with the rate for the general population[14]

Liver Dysfunction

20%–40% of patients with IBD will have elevated liver enzymes at some point[14]

Other Gastrointestinal Diseases

UP TO 50% of patients with IBD are infected by *H. pylori*, an organism involved in the development of peptic ulcer disease[14,16,‡]

*Based on a comprehensive review of 145 international peer-reviewed publications.[14]

†Cross-sectional study of members of a large managed care organization, 1996 to 2005; 12,601 patients with at least 2 IBD diagnoses in computerized visit data.[15]

‡*H. pylori* infection occurs when a type of bacterium called *Helicobacter pylori (H. pylori)* infects the stomach. *H. pylori* is a common cause of peptic ulcers.[16]

WHAT ARE THE COSTS ASSOCIATED WITH IBD?

IN 2008, HEALTH CARE COSTS FOR IBD EXCEEDED $11 BILLION ANNUALLY[17,18]

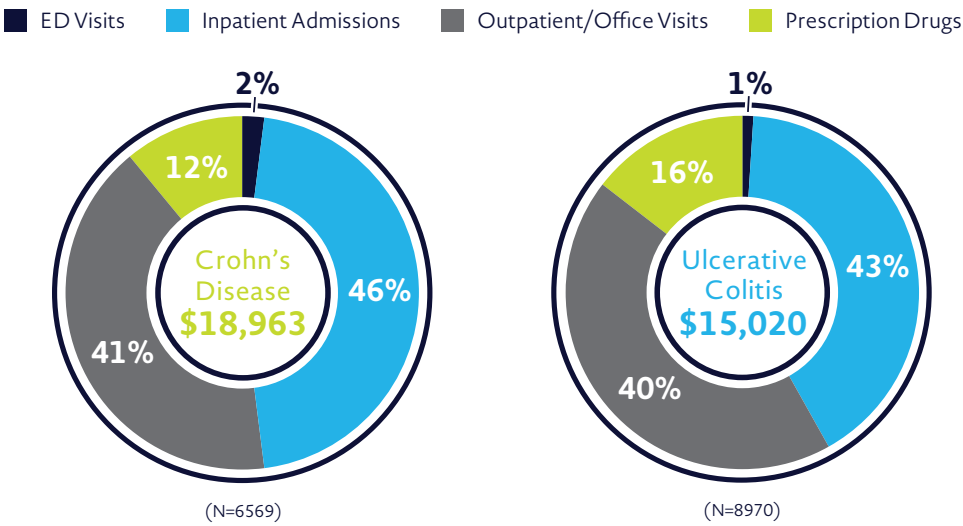
One-year health care costs for a patient with IBD were up to 5 times higher than the average costs for a commercially insured patient without IBD[19]

*Indirect treatment costs include lost paid-work opportunities.[17]

†Direct treatment costs include inpatient surgical and medical treatments and outpatient visits to the ED and physicians' offices, imaging, laboratory, pathology, endoscopy, other outpatient services, and outpatient medications.[18]

HOSPITALIZATIONS AND OUTPATIENT/OFFICE VISITS DRIVE THE DIRECT MEDICAL COSTS[19]

Total annual costs per patient, 2005 dollars[19,‡]



ED=emergency department.

‡Twelve-month expenditures for patients with CD and UC were obtained from 1999 to 2005 MarketScan databases representing approximately 92 large employers covering up to 17 million lives in the United States. The reporting period was 12 months from the index date of first diagnosis of IBD and adjusted to 2005 US dollars.[19]

HOW DOES IBD IMPACT HEALTH CARE UTILIZATION?

PATIENTS WITH IBD HAVE HIGHER RESOURCE UTILIZATION THAN PATIENTS WITHOUT IBD

IBD is the cause of[20]:

1,816,000 (2004)
physician visits

294,000 (2010)
hospitalizations

Based on an analysis of a large claims database when compared with control patients without IBD[21,*]:

- Patients with **CD** had **~5 additional office visits** per year
- Patients with **UC** had **~3.6 additional office visits** per year

Surgical treatment substantially increases the costs of care[17,19]

- **75%** of patients with **CD** and **25%** with **UC** will **eventually require surgery**[17]
  - **CD** patients incurred nearly **4x the cost** of those not requiring surgery ($60,146 vs $15,698)[19,†]
  - **UC** patients incurred nearly **6x the cost** of those not requiring surgery ($72,415 vs $12,822)[19,†]

EMERGENCY DEPARTMENT USE IS >10 TIMES THAT OF NON-IBD PATIENTS

Data from 2003 and 2004[21,*]:

- Patients with **CD** had **>20 additional ED visits** per 100 patients each year ($P<0.001$)
- Patients with **UC** had **>10 additional ED visits** per 100 patients each year ($P<0.001$)

*Inpatient, office-based, emergency, and endoscopy services occurring in 2003 and 2004 in 9056 patients with CD, 10,364 patients with UC, and 52,989 controls were matched for age, gender, and region from 87 different health plans in 33 states. Mean annual ED visits per 100 patients with CD was 36.0, versus 15.1 for the CD controls. Mean annual ED visits per 100 patients with UC was 26.2, versus 15.7 for the UC controls.[21]

†Mean 12-month expenditures; $P<0.001$.[19]

WHAT IS THE EFFECT OF IBD ON ABSENCE AND PRODUCTIVITY?

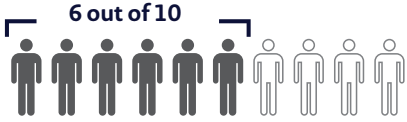
EMPLOYEES WITH IBD WERE FOUND TO BE MORE LIKELY TO MISS TIME FROM WORK THAN PATIENTS WITHOUT IBD[22]

From an analysis of US Medical Expenditure Panel Survey data of employed individuals aged 18-64 years (1996-2006):

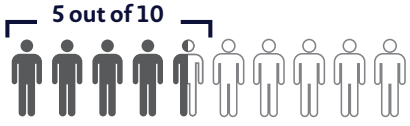
- Greater probability of missing time from work due to illness
  - **71.5%** versus **58.2%** ($P < 0.001$)[22]
- Lose more work days annually
  - **13.38** versus **9.89** days ($P = 0.044$)[22]

THEY MAY BE LESS PRODUCTIVE AT WORK[23]

From a survey of 146 employed patients with IBD attending the UCLA Center for Inflammatory Bowel Diseases[23]



EMPLOYEES ADMITTED TO HAVING GONE TO WORK WHILE SICK[23]



SAID THEIR WORK PERFORMANCE HAD BEEN AFFECTED BY FATIGUE[23]

DISABILITY MAY BE PREVALENT AMONG EMPLOYEES WITH IBD

- Employees with **IBD** were more than **twice as likely** to receive **short-term disability benefits** than those without IBD[19]
- **13%–18%** of employees with **UC** and **16%–27%** of employees with **CD** reported receiving **long-term disability** benefits[24,*]

IBD CAN HAVE **SIGNIFICANT EFFECTS ON WORK-RELATED OUTCOMES**, INCLUDING EMPLOYMENT, DISABILITY, AND WORK PRODUCTIVITY[22–24]

*Based on systematic review of 14 published studies originating in Australia, Canada, Greece, Spain, Switzerland, The Netherlands, Finland, and Sweden.[24]

WHAT DO EMPLOYEES WITH IBD NEED TO DO?

TAKE ACTION—RECOGNIZE SYMPTOMS AND SEEK THE CARE OF A SPECIALIST

- An accurate diagnosis is best achieved by a **gastroenterologist**, particularly one who specializes in IBD[25]
- Patients with IBD typically experience **discomfort for 3 to 5 years** before the true cause of their symptoms is identified[10]

MANY PATIENTS WITH IBD ARE NOT DIAGNOSED RIGHT AWAY

Reasons for delayed diagnosis include[10]:

- Patient's **reluctance to discuss** embarrassing symptoms with their health care professional
- Initial **misdiagnosis** (eg, infection, IBS)

At time of diagnosis[3]:

- Up to **33%** of patients with **CD** **already have complications**
- Up to **19%** of patients with **UC** **have severe disease**

Potential consequences of delayed diagnosis:

- Irreversible damage to intestine in as **early as 4 months**[26]
- Increased **need for surgery**[26]
- Increased use of **emergency department** services[27]

EMPLOYEES NEED EDUCATION AND ACCESS TO CARE FROM A SPECIALIST WHO CAN DIAGNOSE AND MANAGE THEIR COMPLEX DISEASE

WHAT SHOULD AN EMPLOYER DO?

BE SURE YOUR EMPLOYEES WITH IBD HAVE ACCESS TO THE SUPPORT AND CARE THEY NEED

STEP 1: Talk to your benefits partners about the **right plan design** to ensure access to appropriate care.

- Employees with IBD may need care from a **team of health care providers** who specialize in IBD and its complications
  - Eg, gastroenterologists, IBD specialists, nutritionists, and dietitians

- Ensure access to **laboratory services** for diagnosis, disease assessment, and monitoring
  - Eg, blood tests, endoscopy, imaging

- **Specialty medications** may be needed for managing IBD

- Some patients will require **medical procedures,** such as surgery

- Additional **supportive care** may be needed

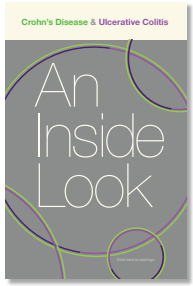
STEP 2: Provide your employees with appropriate **educational resources**

- To help those who are undiagnosed to seek the care they need
- To help those diagnosed with IBD better manage their condition

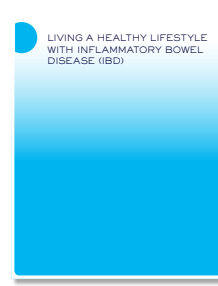
WHAT RESOURCES CAN YOU PROVIDE TO YOUR EMPLOYEES?

EDUCATIONAL RESOURCES TO SUPPORT EMPLOYEES AND EMPOWER THEM TO GET THE CARE THEY NEED

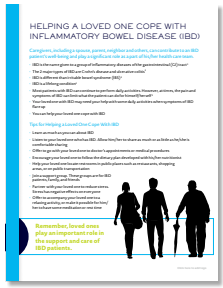
Brochures you can provide to your employees



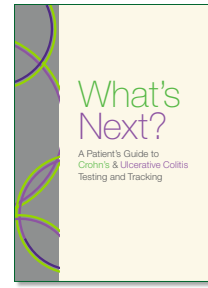
Crohn's Disease & Ulcerative Colitis: An Inside Look



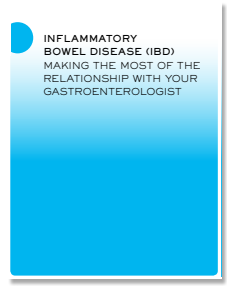
Living a Healthy Lifestyle With Inflammatory Bowel Disease (IBD)



Helping a Loved One Cope With Inflammatory Bowel Disease (IBD)



What's Next? A Patient's Guide to Crohn's & Ulcerative Colitis Testing and Tracking



Inflammatory Bowel Disease (IBD): Making the Most of the Relationship With Your Gastroenterologist

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