

CHAPTER 25

Costs of Digestive Diseases

Constance E. Ruhl, M.D., Ph.D.; Bryan Sayer, M.H.S.; Danita D. Byrd-Holt, B.B.A.; and Douglas M. Brown, Ph.D.

This chapter provides the estimated costs of digestive diseases in the United States for 2004, the last year for which data were available from all sources used in this analysis. Direct medical costs included expenditures for hospital services, physician services, prescription drugs, over-the-counter drugs, nursing home care, home health care, hospice care, and outpatient endoscopy. Indirect costs of morbidity and mortality associated with digestive diseases were also calculated.

The costs of digestive diseases were estimated using the human capital approach.^{1,2} Costs under the human capital method include the value of resources used for medical care (direct costs) and those forgone due to time lost from work and leisure (indirect costs). To calculate direct costs, billed charges are used as an imperfect surrogate for the sum of all the resource payments used in the production of patient services for which data are unavailable. For hospital facilities, costs obtained from the Healthcare Cost and Utilization Project Nationwide Inpatient Sample (HCUP NIS) (Appendix 2) were converted from total charges using cost-to-charge ratios based on hospital accounting reports from the Centers for Medicare & Medicaid Services.

Where possible, an attempt was made to provide cost estimates by ICD codes for each digestive disease with a substantial economic impact. Digestive disease definitions were based on ICD-9-CM codes for health care and ICD-10 codes for mortality, as listed in Appendix 1.

The methodology used to derive cost estimates for digestive diseases is briefly described here. More detail is to be made available at a National Institutes of Health Web site (<http://www2.niddk.nih.gov/>). A conservative approach was taken toward estimation of economic costs. A limitation of this approach is an underestimate of indirect costs related to work loss from digestive diseases not related to medical care (discussion follows).

DIRECT COSTS

Direct costs represent charges for hospital services, physician services, prescription drugs, over-the-counter drugs, nursing home care, home health care, hospice care, and outpatient endoscopy.

Hospital facility costs and physician charges for hospital and ambulatory care include only non-Federal hospitals and physicians, and, therefore, underestimate the total costs of hospital care and ambulatory care for digestive diseases in the United States. (Federal hospitals and physicians include those of the armed services, Department of Veterans Affairs, and the Indian Health Service.) Approximately 10 percent of care in the United States is provided by non-reported hospitals and physicians.

Hospital facility costs (Table 2, column 2) were taken from the 2004 HCUP NIS, a representative sample of hospital discharges from non-Federal hospitals in the United States (Appendix 2). Some hospital facility costs were assumed to be associated with problems other than the first-listed diagnosis. Therefore, 80 percent of inpatient facility charges were allocated to the primary diagnosis (or 100 percent if no secondary diagnoses were present). The remaining 20 percent was allocated to the secondary diagnoses in proportion to the number of secondary diagnoses. For example, if there were three secondary diagnoses, each one received one-third of 20 percent of these costs. If two of the three secondary diagnoses were digestive diseases, then those two each received one-third of 20 percent of the total, and the other one-third was not included, because it was associated with a nondigestive disease.

Total hospital facility costs were \$40.6 billion. Facility charges for first-listed diagnoses were 86 percent of the total hospital charges. Diseases costing more than \$1 billion (in descending order) were gallstones, abdominal wall hernia, diverticular disease, pancreatitis,

colorectal cancer, appendicitis, liver disease, GERD, and peptic ulcer disease.

Physician hospital charges (Table 2, column 3) include those for performing procedures and those for patient visits (rounds). Data on number of hospital discharges with a diagnosis of each digestive disease, as well as length of stay and procedures performed at those visits, were taken from the 2004 HCUP NIS. Because no national estimates were available for the average price charged by physicians per procedure, Medicare reimbursement rates were used. These rates are locality-specific; therefore, we used the average of the regional reimbursement rates weighted by the population density of each region. As in the calculation of hospital facility costs, 80 percent of physician procedure charges were allocated to the primary diagnosis and 20 percent to secondary diagnoses.

To estimate physician visit charges, Medicare reimbursement rates were used. It was assumed that for each first-listed diagnosis there was one physician visit per day in the hospital, and that when a digestive disease was a secondary diagnosis, an average of one visit per hospitalization by a second physician would have occurred for each secondary digestive disease diagnosis.

Two surgical procedures, laparoscopic cholecystectomy (ICD-9-CM procedure code 51.23) and inguinal herniorrhaphy (ICD-9-CM 53.0–53.1), are frequently performed as ambulatory surgery. For each of these procedures, the number of ambulatory surgeries was estimated as the difference between the total number of surgeries (inpatient and outpatient) in 1996, the last year for which ambulatory surgery data were available, and the number of inpatient surgeries in 2004. Facility charges were approximated as the average charge for a 1-day overnight hospitalization for the same procedure. Physician charges were estimated by Medicare reimbursement rates. The total cost of ambulatory laparoscopic cholecystectomies was estimated to be \$2.0 billion, and the total cost of ambulatory herniorrhaphies was estimated to be \$2.5 billion. These costs were included in hospital and physician hospital costs for gallstone disease and abdominal wall hernia, respectively, in Table 2.

Additional costs that could not be distributed among individual digestive diseases were from services provided by primarily hospital-based specialties: anesthesiology, radiology, and pathology. Their costs were estimated by multiplying the amount of collection for professional charges for each specialty by the number of physicians involved in patient care for each specialty.^{3,4} Anesthesiology costs included those for certified nurse anesthetists.⁵ The cost attributable to digestive diseases was estimated as 12 percent of total costs for each specialty; 12 percent was based on the average calculation from the HCUP NIS of the proportion of all hospital discharges, all hospital facility costs, and all physician hospital costs attributed to digestive diseases.

Total physician charges associated with hospital services for digestive diseases were \$14.7 billion. Procedures performed at the hospital (including anesthesiology costs) accounted for \$5.5 billion and physician hospital visits for \$5.2 billion (remaining costs were attributed to radiologists, pathologists, and ambulatory herniorrhaphy and cholecystectomy). Procedures performed for first-listed diagnoses were 85 percent of the total procedure charges. Visits made for first-listed diagnoses were 42 percent of the total visit charges, while consultant fees for secondary diagnoses accounted for the remainder. GERD, gallstones, and abdominal wall hernia had the highest physician fees.

Ambulatory care costs (Table 2, column 4) consist of physician fees for office visits plus any extra charges for procedures performed in their offices. Data on number of ambulatory visits with a diagnosis of each digestive disease and services provided at those visits were taken from the 2004 National Ambulatory Medical Care Survey (NAMCS) and the 2004 National Hospital Ambulatory Medical Care Survey (NHAMCS), representative samples of office-based and hospital-based, respectively, non-Federal physicians in the United States (Appendix 2). Only the primary diagnosis was used for ambulatory care estimates. Medicare reimbursement rates were used to estimate physician visit fees and procedure charges.

Total ambulatory care costs (excluding ambulatory surgery) were \$16.0 billion. Procedures performed

on outpatients constituted 50 percent of this amount. Abdominal wall hernia, GERD, chronic constipation, gallstones, and diverticular disease were the largest contributors to ambulatory costs.

Expenditures for prescription drugs written by physicians during an office visit (Table 2, column 5) were derived using national data for 2004 collected by Verispan (Appendix 2). They were based on first-listed diagnoses only. For some digestive diseases, numbers were too small to produce reliable estimates.

The total cost of prescription drugs was \$12.3 billion. Over half of this cost (\$7.7 billion) was associated with drugs prescribed for GERD. Peptic ulcer disease, hepatitis C, IBS, and IBD were major contributors to the remaining drug cost.

Nursing home costs (Table 2, column 6) were estimated using data from the 2004 National Nursing Home Survey (NNHS) (Appendix 2). Home health care costs (Table 2, column 7) and hospice care costs (Table 2, column 8) were estimated using data from the 2000 National Home and Hospice Care Survey (NHHCS) (Appendix 2). Expenditures for home health and hospice care were inflated to estimate 2004 costs. For both surveys, costs were calculated using the average daily rate and the length of stay and were allocated among primary and secondary diagnoses using an 80-20 split. For some digestive diseases, data were unavailable.

Nursing home costs totaled \$3.3 billion. The conditions making the largest contributions to these costs were GERD, chronic constipation, diverticular disease, peptic ulcer disease, and colorectal cancer.

Home health care costs totaled \$3.1 billion. The conditions making the largest contributions to these costs were colorectal cancer, Crohn's disease, and pancreatic cancer. Hospice care costs totaled an additional \$1.9 billion, with the largest contributors to cost being colorectal, pancreatic, and gastric cancers.

Two additional categories of direct costs could not be distributed among individual digestive diseases: outpatient endoscopy and over-the-counter drugs (Table 2). Endoscopic procedures performed among

outpatients are inadequately captured by the NAMCS and the NHAMCS. To estimate costs of outpatient endoscopy, national estimates of the number of colonoscopies and flexible sigmoidoscopies (performed in 2002) were obtained from the Survey of Endoscopic Capacity (SECAP), conducted by the Centers for Disease Control and Prevention and adjusted to 2004 levels based on trends in the CORI (Appendix 2).⁶ The number of EGDs was estimated using the ratio of EGDs to colonoscopies from CORI. From these totals, the numbers accounted for in the outpatient and inpatient data are subtracted, leaving the total number of procedures missed by those data. Medicare reimbursement rates were used to estimate these additional endoscopy charges. Outpatient endoscopy costs were estimated to be \$3.7 billion.

An estimate of expenditures for over-the-counter drugs (for GERD, constipation, and diarrhea) was obtained from retail trade data provided by the Consumer Healthcare Products Association.⁷ These costs represent sales to major pharmacy markets, excluding Walmart. Adding Walmart's share, estimated to be 10 percent of sales in this market, yields an estimated total of \$2.1 billion.

The total direct cost of digestive diseases in the United States in 2004 was estimated to be \$97.8 billion (Table 2). Hospital facility costs and physician hospital costs accounted for 57 percent. Over \$85 billion of this total could be assigned to individual digestive diseases. The remaining \$12.1 billion, which could not be allocated to individual diseases, represented unassigned outlays for hospital-based physicians, outpatient endoscopy, and over-the-counter drugs. The 10 most significant digestive diseases in terms of direct costs in 2004 were (in descending order) GERD, gallstones, AWH, colorectal cancer, diverticular disease, peptic ulcer disease, pancreatitis, liver disease, appendicitis, and chronic constipation. These 10 diseases cost \$42.8 billion, which represented 44 percent of total costs, or 50 percent of expenditures assigned to individual diseases. Neoplasms accounted for \$8.4 billion, or 10 percent of the direct costs assigned to individual diseases.

INDIRECT COSTS

Indirect costs comprise the implicit value of forgone earnings or production due to (1) consumption of hospital or ambulatory care, (2) premature death, and (3) additional work loss associated with acute and chronic digestive diseases. Indirect costs also include the value of leisure time lost due to morbidity and mortality.

To determine forgone earnings and leisure due to hospital stays, ambulatory care visits, and death, data were obtained from the U.S. Department of Commerce, Bureau of Labor Statistics, Employment and Earnings. For each age group, the average wage paid, including benefits, and the average employment rate (as a proxy for the probability that a person would have been working) were used. For children under 15 years of age, the costs of forgone earnings and leisure due to hospitalization or physician office visits were those of adults who were assumed to have accompanied the children. In calculating indirect costs, 100 percent of costs were attributed to the first-listed diagnosis.

Indirect costs due to hospital stays (Table 3, column 2), were estimated by obtaining data from the 2004 HCUP NIS on number of days hospitalized by condition and age. For this calculation, it was assumed conservatively that patients would spend twice the equivalent number of days at home recuperating as spent in the hospital.

The total indirect cost due to hospital stays was \$5.8 billion. Pancreatitis, liver disease, diverticular disease, and gallstones were the most significant causes of lost wages during hospital stays.

Indirect costs due to ambulatory visits (Table 3, column 3) were estimated in a similar manner to those for hospital stays, except for the assumption that the average visit took 1 hour and 50 minutes away from work or leisure.⁸

The total indirect cost due to ambulatory visits was \$1.9 billion. The largest contributors to this cost were GERD and AWHs.

Indirect costs of lost earnings and leisure due to premature death (Table 3, column 4) were estimated using the number of deaths in 2004 and the projected

future lifetime earnings, benefits, and leisure for men and women to age 75, based on age at death.⁹ The expected lifetime value was discounted to the present using a 4 percent annual discount rate; 100 percent of costs were attributed to the underlying cause of death.

The total indirect cost due to mortality was \$32.8 billion. Liver disease was the costliest condition at \$10.2 billion. Because of their high fatality rate, digestive tract malignancies accounted for a large proportion of the mortality costs (46 percent).

A major source of indirect costs that could not be assigned to individual digestive diseases was the cost of work and leisure loss from acute and chronic conditions that did not result in a physician outpatient visit or hospitalization. An estimate of the total number of days lost was obtained from the Medical Expenditure Panel Survey (MEPS) (Appendix 2) and converted to dollars using the age- and sex-specific rates of forgone earnings. Losses captured by inpatient and outpatient encounters are subtracted from this total. The resulting indirect cost of conditions not resulting in medical care or death was estimated at \$3.6 billion. In contrast, the cost estimate for work loss days in 1985 from acute gastroenteritis alone was \$4.1 billion.¹⁰ In MEPS, any acute condition that resulted in work loss was obtained by self-report of that condition, which is a concern for self-limited illnesses that do not require visits to a health care provider.

The total indirect cost of digestive diseases in the United States in 2004 was estimated at \$44.0 billion (Table 2). Almost three-quarters of this cost was due to mortality, and one-fourth was from work loss due to medical care or illness. Liver disease, colorectal cancer, and pancreatic cancer resulted in the greatest indirect costs.

The total estimated cost of digestive diseases, including direct and indirect, in the United States in 2004 was \$141.8 billion (Table 1). Direct costs accounted for 69 percent of the total. The majority of costs (88 percent of direct and 92 percent of indirect) was assigned to specific digestive diseases. In total cost, the most costly diseases were liver disease (\$13.1 billion), GERD (\$12.6 billion), colorectal cancer (\$9.5 billion), gallstones (\$6.2 billion), and AWH (\$6.1 billion).

Our cost calculations have limitations: (1) Hospital facility costs and physician charges for hospital and ambulatory care include only non-Federal hospitals and physicians, and, therefore, underestimate the total cost of hospital care and ambulatory care for digestive diseases in the United States. (2) Physician costs for procedures were based on Medicare reimbursement rates, which may differ from (i.e., be lower than) rates of other payers. (3) Physician costs for inpatient and outpatient visits were based on Medicare reimbursement rates, which may differ from (i.e., be lower than) rates of other payers. (4) Over-the-counter drug data did not include all categories of digestive disease drugs. (5) Indirect costs of acute and chronic conditions that did not result in medical care did not include data for all digestive diseases. (6) Indirect costs do not include work loss due to disability, for which we have no data. Consequently, the true cost of digestive diseases in the United States is underestimated.

REFERENCES

- 1 Hodgson TA. The state of the art of cost-of-illness estimates. *Advances in health economics and health service research*. 1983;4:129-164.
- 2 Brown DM, Everhart JE. Cost of digestive disease in the United States. In: Everhart JE, editor. *Digestive diseases in the United States: epidemiology and impact*. US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases. Washington, DC: US Government Printing Office, 1994; NIH Publication No. 94-1447 pp. 57–82.
- 3 Medical Group Management Association. *Physician compensation and production survey*. Englewood, Colorado: Center for Research in Ambulatory Health Care Administration, 2005.
- 4 American Medical Association (AMA). *Physician characteristics and distribution in the US*, 2006 Edition. Chicago: AMA, 2006. pp. 20–24.
- 5 US Government Accountability Office (GAO). *Medicare physician payments: Medicare and private payment differences for anesthesia services*. GAO-07-463, Washington, DC: July 2007.
- 6 Seeff LC, Richards TB, Shapiro JA, Nadel MR, Manninen DL, Given LS, Dong FB, Wings LD, McKenna MT. How many endoscopies are performed for colorectal cancer screening? Results from CDC's survey of endoscopic capacity. *Gastroenterology* 2004;127:1670-7.
- 7 Accessed at <http://www.chpa-info.org>.
- 8 American Medical Association (AMA). *Physician and socioeconomic statistics*. 2003 Edition. Chicago: AMA, 2003.
- 9 Accessed at <http://data.bls.gov/cgi-bin/surveymost>.
- 10 Brown and Everhart, op. cit.

Table 1. Direct, Indirect, and Total Costs of Digestive Diseases in the United States, 2004 (\$ Millions)

DIGESTIVE DISEASE	Direct Costs	Indirect Costs	TOTAL
Gastrointestinal Infections	\$1,343.4	\$392.5	\$1,735.9
Hepatitis A	14.5	18.5	32.9
Hepatitis B	204.6	253.2	457.9
Hepatitis C	1,065.5	1,783.6	2,849.1
Other Viral Hepatitis	15.9	32.0	47.9
All Viral Hepatitis	1,300.5	2,087.3	3,387.8
Esophageal Cancer	597.3	1,975.4	2,572.6
Gastric Cancer	487.5	1,415.0	1,902.6
Cancer of Small Intestine	123.8	159.9	283.8
Colorectal Cancer	4,043.7	5,455.2	9,498.9
Primary Liver Cancer	261.2	1,318.6	1,579.8
Bile Duct Cancer	166.0	515.5	681.5
Gallbladder Cancer	66.6	150.6	217.2
Pancreatic Cancer	1,077.4	3,225.6	4,303.0
Other Digestive Cancers	1,618.0	1,490.9	3,108.9
All Digestive Cancers	8,441.5	15,706.7	24,148.2
Hemorrhoids	775.8	97.6	873.4
Gastroesophageal Reflux Disease	12,125.0	515.0	12,639.9
Peptic Ulcer Disease	2,599.9	518.7	3,118.6
Chronic Constipation	1,572.1	140.4	1,712.5
Irritable Bowel Syndrome	949.8	57.5	1,007.3
Other Functional Intestinal Disorders	1,139.3	129.7	1,269.0
All Functional Intestinal Disorders	3,661.2	327.7	3,988.8
Appendicitis	2,310.6	356.3	2,666.8
Abdominal Wall Hernia	5,698.9	371.9	6,070.8
Crohn's Disease	1,071.0	227.9	1,298.9
Ulcerative Colitis	767.9	100.1	868.0
All Inflammatory Bowel Disease	1,838.9	328.0	2,166.9
Diverticular Disease	3,569.3	471.9	4,041.2

Table 1. Direct, Indirect, and Total Costs of Digestive Diseases in the United States, 2004 (\$ Millions) (continued)

DIGESTIVE DISEASE	Direct Costs	Indirect Costs	TOTAL
Liver Disease	2,532.0	10,563.0	13,095.0
Gallstones	5,763.6	406.2	6,169.7
Pancreatitis	2,546.2	1,187.1	3,733.3
Other Digestive Diseases	31,193.0	7,102.2	38,295.2
All Digestive Diseases	85,699.7	40,432.0	126,131.7
Total Costs That Could Not Be Allocated to Specific Conditions	12,118.1	3,576.4	15,694.5
TOTAL	\$97,817.9	\$44,008.4	\$141,826.3

Table 2. Direct Costs of Digestive Diseases in the United States, 2004 (\$ Millions)

DIGESTIVE DISEASE	Hospital (Non-Federal)	Physician Hospital (Non-Federal)	Ambulatory (Non-Federal)	Prescription Drugs	Nursing Home	Home Health Care (2000)	Hospice Care (2000)	TOTAL
Gastrointestinal Infections	\$877.2	\$145.4	\$260.0	\$45.1	\$9.6	\$6.2	—	\$1,343.4
Hepatitis A	10.9	2.6	0.9	—	0.1	0.0	—	14.5
Hepatitis B	48.3	16.8	71.8	66.7	—	0.4	0.6	204.6
Hepatitis C	206.9	95.8	241.8	506.0	—	12.7	2.3	1,065.5
Other Viral Hepatitis	8.9	1.5	3.7	—	0.6	0.9	0.4	15.9
All Viral Hepatitis	274.9	116.6	318.2	572.8	0.7	14.0	3.3	1,300.5
Esophageal Cancer	302.2	49.9	99.7	8.7	0.7	42.3	93.7	597.3
Gastric Cancer	234.8	39.0	35.1	18.4	6.0	24.4	129.8	487.5
Cancer of Small Intestine	92.8	17.2	4.2	—	—	0.0	9.7	123.8
Colorectal Cancer	1,947.4	392.4	465.5	81.0	122.4	277.5	757.5	4,043.7
Primary Liver Cancer	151.7	24.9	26.5	—	33.0	—	25.1	261.2
Bile Duct Cancer	119.1	21.3	7.1	—	—	—	18.5	166.0
Gallbladder Cancer	31.5	6.3	8.4	—	—	3.6	16.8	66.6
Pancreatic Cancer	403.7	71.0	76.3	33.3	12.4	105.9	374.8	1,077.4
Other Digestive Cancers	1,044.1	225.0	123.4	2.1	9.1	46.5	167.8	1,618.0
All Digestive Cancers	4,327.3	847.0	846.2	143.5	183.7	500.1	1,593.7	8,441.5
Hemorrhoids	196.7	79.6	447.3	43.0	7.4	1.8	—	775.8
Gastroesophageal Reflux Disease	1,527.4	774.8	1,391.1	7,689.8	641.9	82.4	17.6	12,125.0
Peptic Ulcer Disease	1,442.5	246.9	199.0	518.6	130.6	61.4	0.9	2,599.9
Chronic Constipation	297.5	154.4	627.3	178.2	254.6	59.0	1.0	1,572.1
Irritable Bowel Syndrome	113.8	50.9	467.2	294.7	19.6	3.3	0.4	949.8

Table 2. Direct Costs of Digestive Diseases in the United States, 2004 (\$ Millions) (continued)

DIGESTIVE DISEASE	Hospital (Non-Federal)	Physician Hospital (Non-Federal)	Ambulatory (Non-Federal)	Prescription Drugs	Nursing Home	Home Health Care (2000)	Hospice Care (2000)	TOTAL	
Other Functional Intestinal Disorders	429.6	111.8	217.7	270.6	88.6	16.3	4.7	1,139.3	
All Functional Intestinal Disorders	840.9	317.0	1,312.2	743.5	362.8	78.7	6.2	3,661.2	
Appendicitis	1,930.7	261.1	92.2	5.6	15.4	5.6	—	2,310.6	
Abdominal Wall Hernia	3,527.6	541.9	1,496.4	59.5	22.2	49.8	1.6	5,698.9	
Crohn's Disease	427.1	78.3	160.6	261.5	6.2	137.2	0.1	1,071.0	
Ulcerative Colitis	296.3	58.1	113.7	272.9	6.4	20.5	0.1	767.9	
All Inflammatory Bowel Disease	723.4	136.3	274.3	534.4	12.6	157.8	0.2	1,838.9	
Diverticular Disease	2,239.0	421.2	553.8	100.2	181.8	71.0	2.2	3,569.3	
Liver Disease	1,799.9	310.1	214.6	16.1	62.1	45.3	84.0	2,532.0	
Gallstones	4,314.6	748.1	619.1	18.6	41.9	21.1	0.1	5,763.6	
Pancreatitis	1,982.2	258.0	85.5	88.6	50.5	75.8	5.7	2,546.2	
Other Digestive Diseases	14,630.3	3,285.8	7,875.6	1,752.6	1,552.5	1,885.6	210.6	31,193.0	
All Digestive Diseases	40,634.6	8,489.8	15,985.5	12,331.7	3,275.6	3,056.6	1,925.8	85,699.7	
Total Costs That Could Not Be Allocated to Specific Conditions									
Over-the-Counter Drugs								2,141.0	
Outpatient Endoscopy								3,718.5	
Hospital-Based Physicians								6,258.6	
TOTAL									\$97,817.9

Table 3. Indirect Costs of Digestive Diseases in the United States, 2004 (\$ Millions)

DIGESTIVE DISEASE	Hospital Stay	Ambulatory Care	Mortality	TOTAL
Gastrointestinal Infections	\$165.6	\$65.8	\$161.1	\$392.5
Hepatitis A	2.5	0.2	15.8	18.5
Hepatitis B	10.1	15.4	227.7	253.2
Hepatitis C	46.7	51.2	1,685.7	1,783.6
Other Viral Hepatitis	2.0	1.2	28.9	32.0
All Viral Hepatitis	61.3	68.0	1,958.0	2,087.3
Esophageal Cancer	41.8	9.1	1,924.5	1,975.4
Gastric Cancer	31.5	2.3	1,381.3	1,415.0
Cancer of Small Intestine	12.1	0.3	147.5	159.9
Colorectal Cancer	226.3	38.1	5,190.8	5,455.2
Primary Liver Cancer	22.5	2.3	1,293.8	1,318.6
Bile Duct Cancer	14.1	0.7	500.6	515.5
Gallbladder Cancer	3.5	1.1	146.1	150.6
Pancreatic Cancer	54.9	7.5	3,163.2	3,225.6
Other Digestive Cancers	148.5	6.4	1,336.0	1,490.9
All Digestive Cancers	555.3	67.7	15,083.7	15,706.7
Hemorrhoids	32.9	59.8	5.0	97.6
Gastroesophageal Reflux Disease	231.6	194.8	88.5	515.0
Peptic Ulcer Disease	181.8	16.3	320.6	518.7
Chronic Constipation	52.3	75.6	12.4	140.4
Irritable Bowel Syndrome	21.8	35.4	0.4	57.5
Other Functional Intestinal Disorders	80.1	26.7	22.9	129.7
All Functional Intestinal Disorders	154.2	137.7	35.7	327.7
Appendicitis	264.1	19.6	72.5	356.3
Abdominal Wall Hernia	160.3	107.3	104.3	371.9
Crohn's Disease	84.8	25.1	118.1	227.9
Ulcerative Colitis	56.7	11.6	31.8	100.1
All Inflammatory Bowel Disease	141.5	36.6	149.9	328.0
Diverticular Disease	314.9	36.0	120.9	471.9
Liver Disease	345.2	38.2	10,179.6	10,563.0

Table 3. Indirect Costs of Digestive Diseases in the United States, 2004 (\$ Millions) (continued)

DIGESTIVE DISEASE	Hospital Stay	Ambulatory Care	Mortality	TOTAL
Gallstones	303.4	32.1	70.7	406.2
Pancreatitis	398.2	13.0	775.9	1,187.1
Other Digestive Diseases	2,485.5	983.3	3,633.4	7,102.2
All Digestive Diseases	5,795.9	1,876.2	32,759.8	40,432.0
Total Costs That Could Not Be Allocated to Specific Conditions				
Additional Work Loss				3,576.4
TOTAL				\$44,008.4

