

The burdens of digestive diseases

Although this journal has an international readership, a recent publication (Everhart, J. E. US Department of Health and Human Services *NIDDK National Institute of Diabetes and Digestive and Kidney Diseases* [online], <http://www2.niddk.nih.gov/AboutNIDDK/ReportsAndStrategicPlanning/BurdenOfDisease/DigestiveDiseases/> [2009]) provides an interesting reference point for the incidence, prevalence and (relative) costs of digestive diseases in western society.

In this report, Everhart discusses the staggering burden of digestive diseases in the US. In 2004, a primary diagnosis of a digestive disease led to over 72 million outpatient visits, which equates to 35 visits for each 100 US residents. Outpatient visits were highest for persons aged >65 years; age-adjusted rates of visits were comparable for black and white individuals, but 20% higher for women than men. The number of outpatient visits increased by approximately one-third during 1992–2005. Furthermore, in 2004, 4.6 million patients were discharged from hospital with a primary diagnosis of a digestive disease, and 13.5 million patients were discharged with a primary or secondary diagnosis of a digestive disease. These findings equate to five overnight hospitalizations for digestive disorders per 100 US residents. Again, persons aged >65 years had the highest rate of hospitalization and women had a 10% higher age-adjusted rate of hospitalization than men. However, black patients had higher rates of hospitalization than white ones. While the rate of hospitalizations for all diagnoses increased by approximately 13% during 1998–2004, hospitalizations for digestive diseases increased by 35% over the same period and, in 2004, 30% of all hospital discharge diagnoses listed a digestive disorder. As Everhart states, “rates of hospitalizations with digestive disease diagnoses increased both absolutely and as a proportion of all hospitalizations.” The largest increases in discharge diagnoses (not limited to the primary diagnosis) were accounted for by GERD, viral hepatitis, chronic constipation, intestinal infections and pancreatitis. By contrast, hospitalization rates declined for peptic ulcer disease and gallstones (in the latter case, owing to a shift towards outpatient surgeries).

Digestive disorders accounted for 236,000 deaths in the US in 2004—approximately 10% of all deaths. Of note, age-adjusted mortality was nearly 30% greater in black patients than in white ones, and men had 53% higher mortality than women. The years 1979–2004 showed a gradual decline of approximately 20% in digestive disease mortality with the greatest reduction attributed to decreased mortality associated with digestive cancers. These cancers accounted for the largest

number of deaths in 2004 (colorectal cancer 54,000, pancreatic cancer 32,000, esophageal cancer 14,000 and gastric cancer 11,000). Gastrointestinal infections and viral hepatitis accounted for approximately 4,000 and 5,000 deaths, respectively. Acute and chronic liver disease was the second largest cause of death after colorectal cancer but accounted for the greatest reductions in life-span and contributed to mortality related to liver and bile duct cancers. The distribution of digestive diseases that carry a substantial mortality risk is distinctly different from that of the leading causes for ambulatory visits (led by GERD, chronic constipation, abdominal hernias, hemorrhoids, diverticular disease and IBS). Furthermore, the most common digestive disease diagnoses from hospital discharge records were GERD, diverticular disease, liver disease, constipation, gallstones and peptic ulcer disease.

The total direct costs of digestive diseases in the US in 2004 approached \$100 billion, of which hospital facility charges accounted for 40%. Of note, total physician charges associated with hospitalization came to approximately \$15 billion (15% of the total direct costs). Ambulatory visit charges, excluding those for ambulatory surgery, were \$16 billion and prescription drug costs for outpatients were estimated to be \$12.3 billion; over half of these costs were associated with drugs for GERD, peptic ulcer disease, hepatitis C, IBS and IBD. In addition to direct costs, indirect costs (for example, losses of patients' income, education and leisure time) were estimated to be \$44 billion; even so, this figure does not include indirect costs associated with the contribution family members might make to a patient's health care. The highest indirect costs were associated with liver diseases and individual digestive cancers.

While clearly an underestimate, the total estimated cost of digestive diseases in the US in 2004 was \$142 billion, at the same time that the estimated cost of health care for all diseases in the US was estimated to be \$1.9 trillion. According to Everhart, if digestive disease costs were assumed to account for only 10% of all US health care spending, the resulting direct costs would be about twice the estimates he provided. I recognize the likelihood and need that US expenditure on health care will be reduced; clearly, then, digestive disease prevention, early diagnosis, improved treatment, and reduction in health-care discrepancies among ethnic and social groups affected by these disorders are important targets for improving health-care cost-effectiveness and patients' quality of life.

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Competing interests
The author declares no competing interests.