

CHAPTER 21

Liver Disease

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There are many causes of liver disease, and the underlying cause is not always clear from administrative data sets. Thus, this report does not break out cause-specific liver disease other than viral hepatitis and hepatocellular carcinoma. Because ICD-10 does not separate acute from chronic liver disease, ICD-9 codes for acute and chronic liver disease were combined to achieve consistency for time trend data (Appendix 1).

In 2004, liver disease was the ninth leading diagnosis at ambulatory care visits, with 2.4 million visits (Table 1). If combined with the 3.5 million visits with a diagnosis of viral hepatitis, then liver disease would have been the third leading diagnosis, after GERD and chronic constipation. All-listed visit rates for liver disease were highest at age 45–64 years. Age-adjusted rates were higher for blacks than whites and slightly higher among females. When listed as a hospital discharge, liver disease was first-listed diagnosis on only 24.4 percent of records. In 2004, liver disease was the third leading diagnosis on hospital discharge records, after only GERD and diverticular disease. Combined with 475,000 viral hepatitis diagnoses, liver disease would have been the second leading diagnosis, with 1.2 million. Rates increased with age and were higher among blacks and males. The rates of age-adjusted ambulatory care visits increased steadily between 1992–1993 and 2003–2005 (Figure 1), in contrast to the 1970s and 1980s, when they were relatively constant.¹ Hospitalization rates were stable through the 1970s and fell throughout the 1980s, as was true for many other diseases.² Between 1999 and 2004, the rate of hospitalization with a diagnosis of liver disease increased by more than a third.

In 2004, there were 36,000 deaths with liver disease listed as underlying cause, which was half the number of deaths with liver disease listed as underlying or other cause (Table 2). Among all digestive diseases, liver disease was the second leading cause of death, after colorectal cancer. Death from liver disease was most common among persons aged 45–64 years, although the mortality rate from liver disease was highest at age 65 years and older. As a result of the large number of deaths occurring at an early age, the YPLL prior to age 75 years was higher than for any other digestive disease. Mortality rates were slightly higher among whites than blacks, and were nearly twice as high among males. Beginning in 1970, through 2004, mortality from liver disease declined slowly but steadily (Figure 2).³ Between 1979 and 2004, liver disease mortality fell 30 percent. This rate of decline would have been halved had deaths from viral hepatitis been included.

According to the Verispan database of retail pharmacy prescriptions (Appendix 2), only three drugs (spironolactone, lactulose, and furosemide) were commonly prescribed for liver disease in 2004, for a total of 731,000 prescriptions at a cost of \$16 million (Table 3). Spironolactone constituted 80 percent of both the number of prescriptions (583,000) and their cost (\$12.8 million).

¹ Dufour MC. Chronic liver disease and cirrhosis. 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. 613–646.

² Ibid.

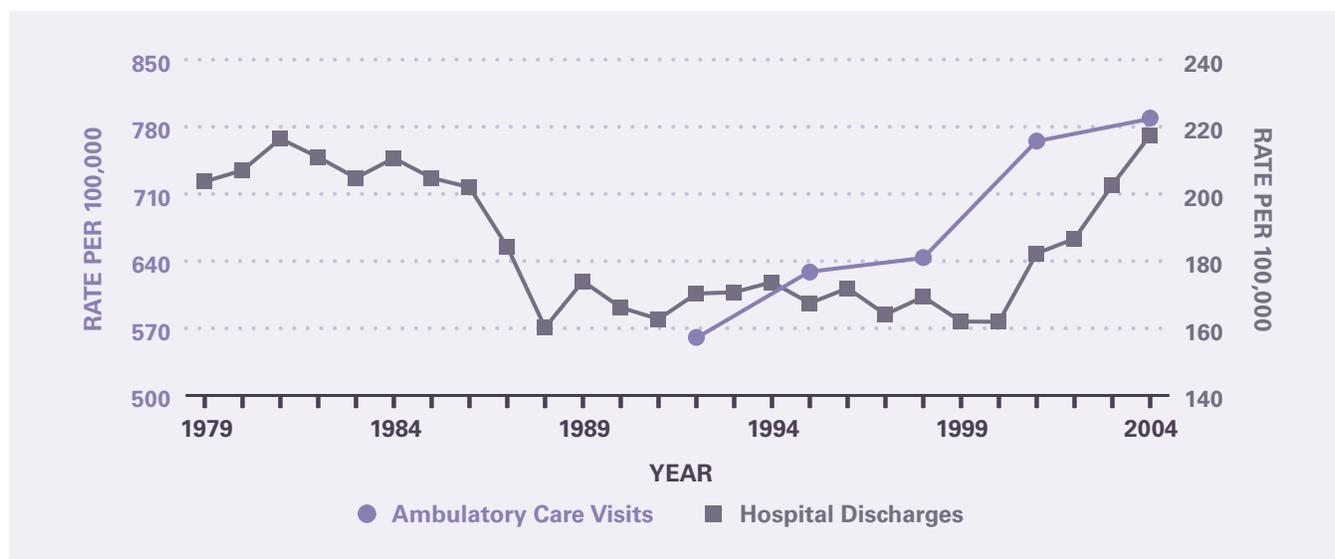
³ Ibid.

Table 1. Liver Disease: Number and Age-Adjusted Rates of Ambulatory Care Visits and Hospital Discharges With First-Listed and All-Listed Diagnoses by Age, Race, and Sex in the United States, 2004

DEMOGRAPHIC CHARACTERISTICS	AMBULATORY CARE VISITS				HOSPITAL DISCHARGES				
	First-Listed Diagnosis		All-Listed Diagnoses		First-Listed Diagnosis		All-Listed Diagnoses		
	Number in Thousands	Rate per 100,000	Number in Thousands	Rate per 100,000	Number in Thousands	Rate per 100,000	Number in Thousands	Rate per 100,000	
AGE (Years)	Under 15	—	—	—	—	2	2	9	14
	15–44	346	275	490	389	35	28	153	122
	45–64	665	941	1,374	1,944	102	144	365	517
	65+	358	986	503	1,385	47	129	233	640
RACE	White	1,122	446	1,903	749	149	59	596	236
	Black	198	654	289	912	21	63	96	292
SEX	Female	796	512	1,282	815	73	46	327	206
	Male	577	394	1,116	762	112	78	432	305
TOTAL		1,373	468	2,398	816	185	63	759	259

SOURCE: National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS) (3-year average, 2003–2005), and Healthcare Cost and Utilization Project Nationwide Inpatient Sample (HCUP NIS)

Figure 1. Liver Disease: Age-Adjusted Rates of Ambulatory Care Visits and Hospital Discharges With All-Listed Diagnoses in the United States, 1979–2004

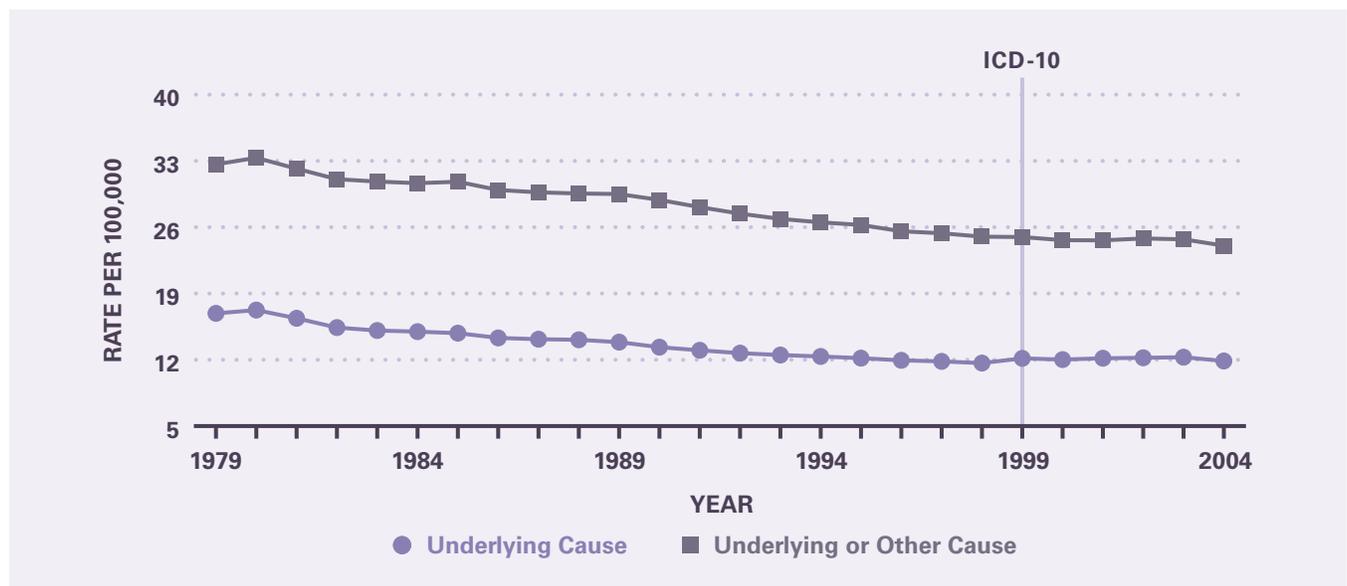


SOURCE: National Ambulatory Medical Care Survey (NAMCS) and National Hospital Ambulatory Medical Care Survey (NHAMCS) (averages 1992–1993, 1994–1996, 1997–1999, 2000–2002, 2003–2005), and National Hospital Discharge Survey (NHDS)

Table 2. Liver Disease: Number and Age-Adjusted Rates of Deaths and Years of Potential Life Lost (to Age 75) by Age, Race, and Sex in the United States, 2004

DEMOGRAPHIC CHARACTERISTICS	UNDERLYING CAUSE			UNDERLYING OR OTHER CAUSE		
	Number of Deaths	Rate per 100,000	Years of Potential Life Lost in Thousands	Number of Deaths	Rate per 100,000	
AGE (Years)	Under 15	146	0.2	10.7	491	0.8
	15–44	4,169	3.3	146.4	7,851	6.2
	45–64	18,154	25.7	367.6	35,259	49.9
	65+	13,620	37.5	34.4	29,486	81.2
RACE	White	31,041	12.1	462.8	61,685	24.1
	Black	3,784	11.8	72.8	8,547	27.1
SEX	Female	13,385	8.2	178.9	27,503	16.8
	Male	22,705	16.2	380.2	45,588	32.8
TOTAL		36,090	12.3	559.1	73,091	24.9

SOURCE: Vital Statistics of the United States

Figure 2. Liver Disease: Age-Adjusted Rates of Death in the United States, 1979–2004

SOURCE: Vital Statistics of the United States

Table 3. Liver Disease: Costliest Prescriptions

DRUG	Prescription (#)	Prescription	Retail Cost	Cost
Spironolactone	583,486	79.8%	\$12,838,400	80.0%
Lactulose	115,294	15.8	3,006,568	18.7
Furosemide	32,450	4.4	208,205	1.3
TOTAL	731,230	100.0%	\$16,053,173	100.0%

SOURCE: Verispan