

Disease Burden from Viral Hepatitis A, B, and C in the United States

	Hepatitis A					
	2007	2006	2005	2004	2003	2002
No. of Acute Clinical Cases Reported ^a	2,979	3,579	4,488	5,683	7,653	8,795
Estimated No. of Acute Clinical Cases ^b	13,000	15,000	19,000	24,000	33,000	38,000
Estimated No. of New Infections ^b (current)	25,000	32,000	42,000	56,000	61,000	73,000
Percent Ever Infected ^c	29.1% - 33.5%					
Number of Persons Living with Chronic Infection ^d	No chronic infection					
Annual Number of Chronic Liver Disease Deaths associated with Viral Hepatitis ^e	No chronic infection					

	Hepatitis B					
	2007	2006	2005	2004	2003	2002
No. of Acute Clinical Cases Reported ^a	4,519	4,758	5,494	6,212	7,526	8,064
Estimated No. of Acute Clinical Cases ^b	13,000	13,000	15,000	17,000	21,000	23,000
Estimated No. of New Infections ^b (current)	43,000	46,000	53,000	60,000	73,000	79,000
Percent Ever Infected ^c	4.3% - 5.6%					
Number of Persons Living with Chronic Infection ^d	800,000 - 1.4 million persons					
Annual Number of Chronic Liver Disease Deaths associated with Viral Hepatitis ^e	3,000					

	Hepatitis C					
	2007	2006	2005	2004	2003	2002
No. of Acute Clinical Cases Reported ^a	849	802	694	758	891	1,223
Estimated No. of Acute Clinical Cases ^b	2,800	3,200	3,400	4,200	4,500	4,800
Estimated No. of New Infections ^b (current)	17,000	19,000	21,000	26,000	28,000	29,000
Percent Ever Infected ^c	1.3% - 1.9%					
Number of Persons Living with Chronic Infection ^d	2.7–3.9 million persons					
Annual Number of Chronic Liver Disease Deaths associated with Viral Hepatitis ^e	12,000					

Notes on sources and methodology:

a. Number of Acute Clinical Cases Reported:

For hepatitis A, hepatitis B, and hepatitis C/non-A, non-B hepatitis, the number of cases reported to the National Notifiable Disease Surveillance System (NNDSS).

b. Estimated Number of Acute Clinical Cases and New Infections:

Incidence estimates for hepatitis A and hepatitis B are derived from catalytic modeling of seroprevalence data from the Third National Health and Nutrition Examination Survey (NHANES III) applied to cases reported to the Nationally Notifiable Disease Surveillance System (NNDSS). Incidence estimates for hepatitis C are derived by adjusting rates from the Sentinel Counties Study of Viral Hepatitis (1982–2006) and Emerging Infection Program (2007) for underreporting and asymptomatic infection.

c. Percent Ever Infected:

Seroprevalence estimates for HAV, HBV and HCV come from the National Health and Nutrition Examination Survey **HAV:** Bell BP, Kruszon-Moran D, Shapiro CN et al. Hepatitis A virus infection in the United States: serologic results from the Third National Health and Nutrition Examination Survey. *Vaccine* 23(2005):5798-5806. **HBV:** McQuillan GM, et al. Prevalence of hepatitis B virus infection in the United States: The National Health and Nutrition and Examination Surveys, 1976 through 1994. *AJPH* 1999; 89(1):14-18. **HCV:** Armstrong GL et al. The prevalence of hepatitis C virus infection in the United States, 1999 through 2002. *Ann Int Med* 2006;144:705-14.

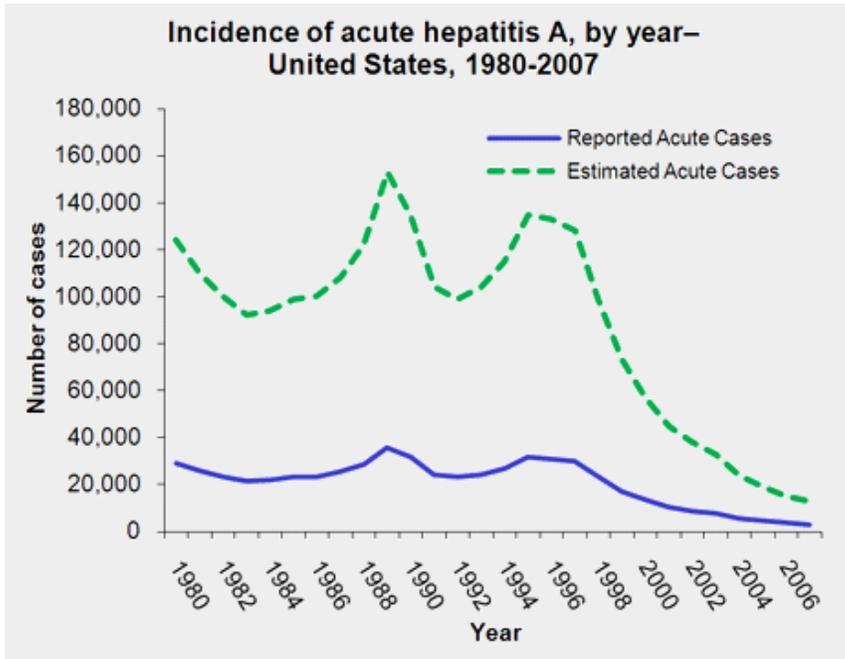
d. Number of Persons Living with Chronic Infection:

HBV: CDC. Recommendations for identification and public health management of persons with chronic hepatitis B virus infection. *MMWR* 2008;57(No. RR-8). **HCV:** Armstrong GL et al. The prevalence of hepatitis C virus infection in the United States, 1999 through 2002. *Ann Int Med* 2006;144:705-14.

e. Annual Number of Chronic Liver Disease Deaths associated with Viral Hepatitis:

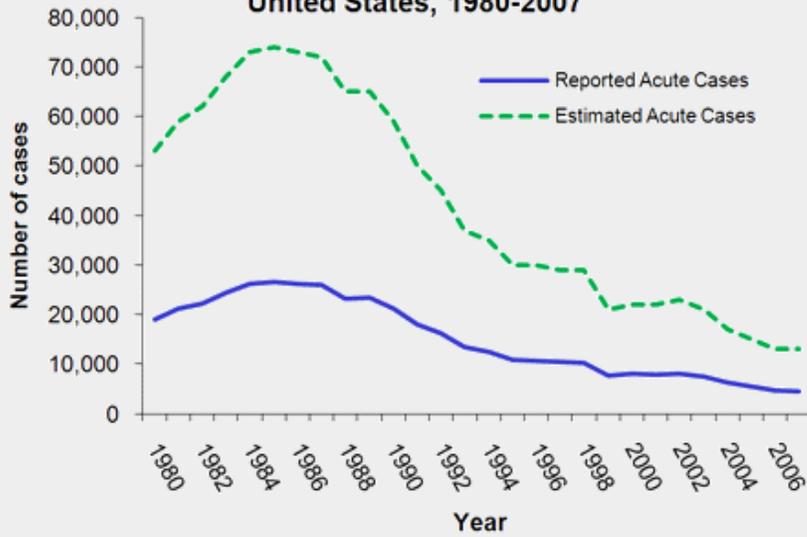
HBV: Vogt TM et al. Hepatitis B mortality in the United States, 1990–2004. Paper presented at 45th Annual Meeting of the Infectious Disease Society of America; October 4–7, 2007; San Diego, CA. and Manos MM et al. Limitations of conventionally derived chronic liver disease mortality rates: results of a comprehensive assessment. *Hepatology* 2008;47:1150-7. **HCV:** Wise M et al. Changing trends in hepatitis C-related mortality in the United States, 1995–2004. *Hepatology* 2008;47:1–8.

Acute Disease Burden Data, 1980–2007



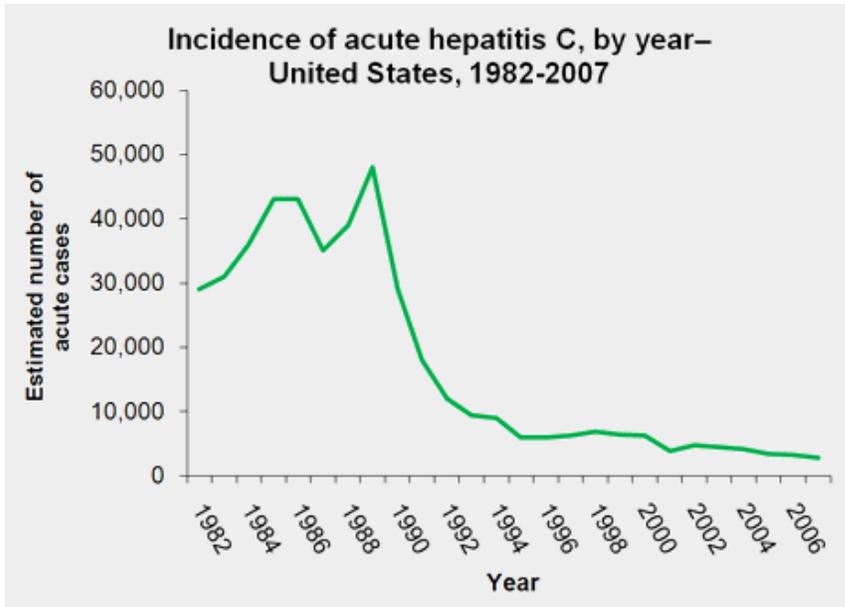
Incidence of hepatitis A, United States			
Year	Reported Acute Cases	Estimated Acute Cases	Estimated Total New Infections
1980	29,087	124,000	234,000
1981	25,802	110,000	223,000
1982	23,404	100,000	228,000
1983	21,534	92,000	221,000
1984	22,038	94,000	232,000
1985	23,211	99,000	228,000
1986	23,429	100,000	239,000
1987	25,280	108,000	255,000
1988	28,506	122,000	305,000
1989	35,822	153,000	380,000
1990	31,522	135,000	373,000
1991	24,219	104,000	288,000
1992	23,112	99,000	274,000
1993	24,238	104,000	284,000
1994	26,796	115,000	333,000
1995	31,582	135,000	356,000
1996	31,032	133,000	335,000
1997	30,021	128,000	341,000
1998	23,299	99,000	243,000
1999	17,047	73,000	181,000
2000	13,397	57,000	143,000
2001	10,616	45,000	93,000
2002	8,795	38,000	73,000
2003	7,653	33,000	61,000
2004	5,683	24,000	56,000
2005	4,488	19,000	42,000
2006	3,579	15,000	32,000
2007	2,979	13,000	25,000

**Incidence of acute hepatitis B, by year-
United States, 1980-2007**



Incidence of hepatitis B, United States

Year	Reported Acute Cases	Estimated Acute Cases	Estimated Total New Infections
1980	19,014	53,000	208,000
1981	21,151	59,000	229,000
1982	22,176	62,000	239,000
1983	24,319	68,000	267,000
1984	26,116	73,000	281,000
1985	26,612	74,000	287,000
1986	26,106	73,000	283,000
1987	25,915	72,000	287,000
1988	23,175	65,000	253,000
1989	23,421	65,000	255,000
1990	21,277	59,000	232,000
1991	17,911	50,000	193,000
1992	16,126	45,000	175,000
1993	13,361	37,000	144,000
1994	12,517	35,000	133,000
1995	10,805	30,000	113,000
1996	10,637	30,000	112,000
1997	10,416	29,000	110,000
1998	10,258	29,000	109,000
1999	7,694	21,000	79,000
2000	8,036	22,000	81,000
2001	7,844	22,000	78,000
2002	8,064	23,000	79,000
2003	7,526	21,000	73,000
2004	6,212	17,000	60,000
2005	5,494	15,000	53,000
2006	4,758	13,000	46,000
2007	4,519	13,000	43,000



Incidence of hepatitis C, United States		
Year	Estimated Acute Cases	Estimated Total New Infections
1982	29,500	180,000
1983	30,800	188,000
1984	36,000	219,000
1985	42,700	261,000
1986	43,000	262,000
1987	35,400	216,000
1988	39,400	240,000
1989	47,800	291,000
1990	29,400	179,000
1991	18,400	112,000
1992	12,000	73,000
1993	9,400	57,000
1994	8,900	54,000
1995	5,900	36,000
1996	5,900	36,000
1997	6,300	38,000
1998	6,800	41,000
1999	6,400	39,000
2000	6,300	38,000
2001	3,900	24,000
2002	4,800	29,000
2003	4,500	28,000
2004	4,200	26,000
2005	3,400	21,000
2006	3,200	19,000
2007	2,800	17,000