

Hepatitis A

Hepatitis A is a Class B Disease and must be reported to the state within one business day.

Reportable cases of hepatitis A virus (HAV) infections are those newly infected individuals who are symptomatic, or who have elevated liver enzymes and have IgM antibodies to hepatitis A. IgM antibodies to HAV are the main indicator of recent infection, but there may also be false positive test results. To meet the case definition, a person has to meet both the clinical and the laboratory criteria.

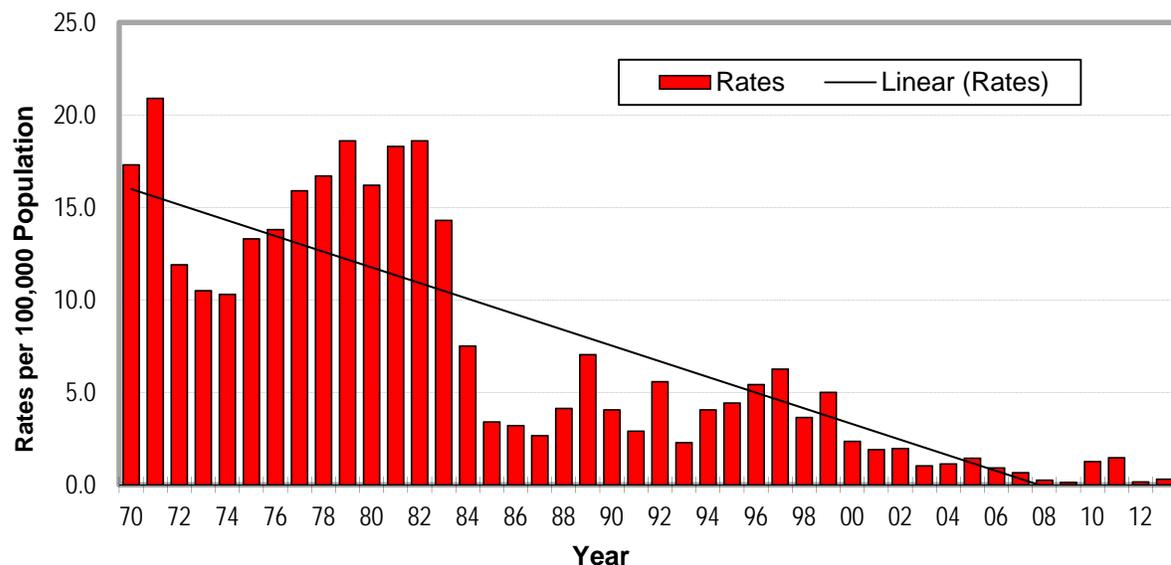
Pre-vaccine Era

Reporting of HAV started in 1970. During the 70s and early 80s the number of cases varied between 500 and 700 a year, for a reporting rate ranging from ten to 20 per 100,000 population. National incidence models showed that the number of cases may have been ten times higher. The U.S. prevalence of infection was 31% during the National Health and Nutrition Examination Survey (NHANES) by the Centers for Disease Control and Prevention (CDC) (1988-1994). Most cases were due to person-to-person transmission for sporadic cases and small community outbreaks. In the late 1980s, the number of cases started to decline sharply to five to ten per 100,000 population. This decline may have been the consequence of better sanitation and stricter application of case definitions.

Vaccine Era

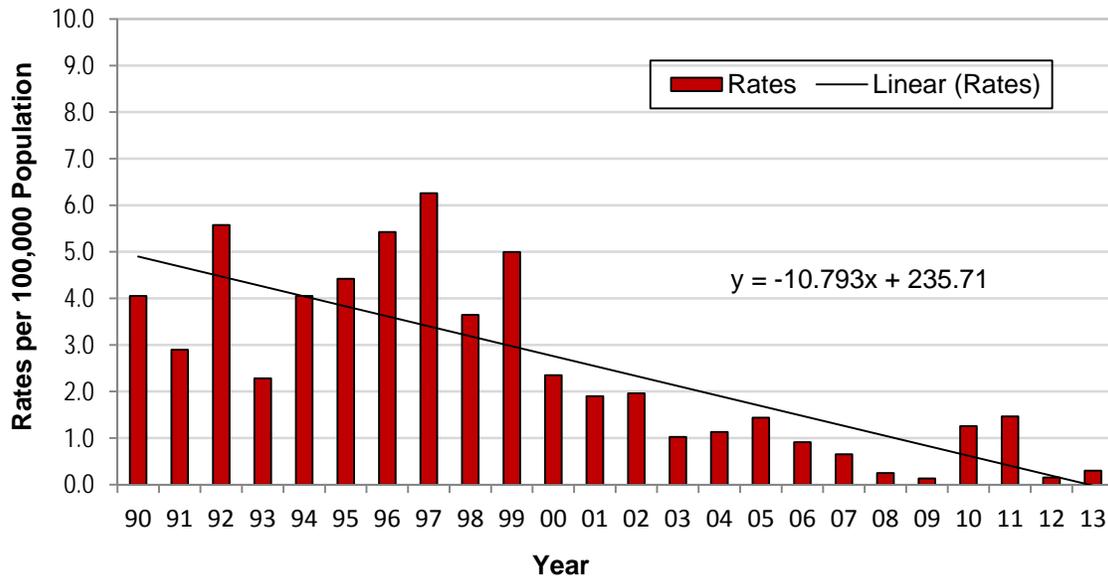
An inactivated HAV vaccine was approved in 1995. In subsequent years, there was a further decline to very low rates. (Most hepatitis A infections are asymptomatic; reported cases represent only less than one per 100,000 population), (Figure 1).

Figure 1: Acute HAV Infections - Louisiana, 1970-2013



Since 1999, when routine HAV immunization of children was recommended by the Advisory Committee on Immunization Practices (ACIP) of the CDC, the rate per 100,000 population of reported cases of hepatitis A fell from over 200 cases to eight cases reported in 2012 (Figure 2).

Figure 2: Incidence of Acute HAV Infections - Louisiana, 1990-2013



The trend line shows a decrease in reported cases over time. This decrease is probably due to a true decrease in new cases rather than an artifact of reporting.

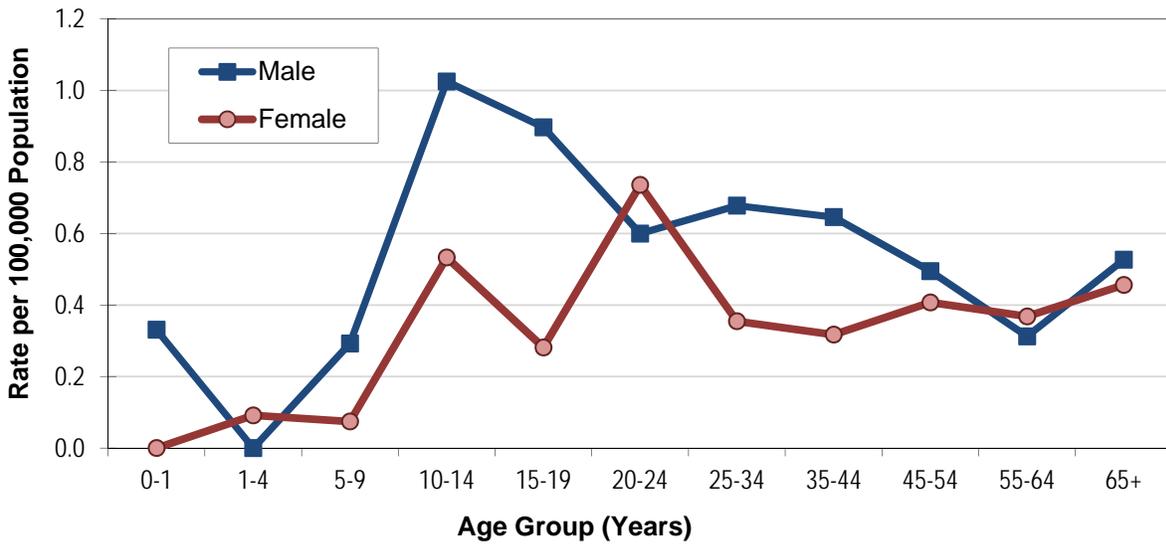
The proportion of young adults ever infected with hepatitis A was estimated to be 25% in 2004 by a survey done by the Louisiana Department of Health (LDH), Office of Public Health (OPH) Laboratory among young adults whose blood was tested for other purposes.

Age Group, Race Distribution

Less than 10% of children younger than six years of age infected with hepatitis A display symptoms compared with 40% to 50% of those from six to 14 years of age and 70% to 80% of those older than 14 years of age. Because the percentage of hepatitis A cases with symptoms increases with age, the age group distribution of reported cases does not reflect the actual age group distribution of infections.

The age group distribution shows two peaks, one among children aged ten to 14 years and another among females, ages 20 to 24 years. Men who have sex with men are also at high risk, which may explain the comparatively high rates among males, ages 20 to 44 years (Figure 3).

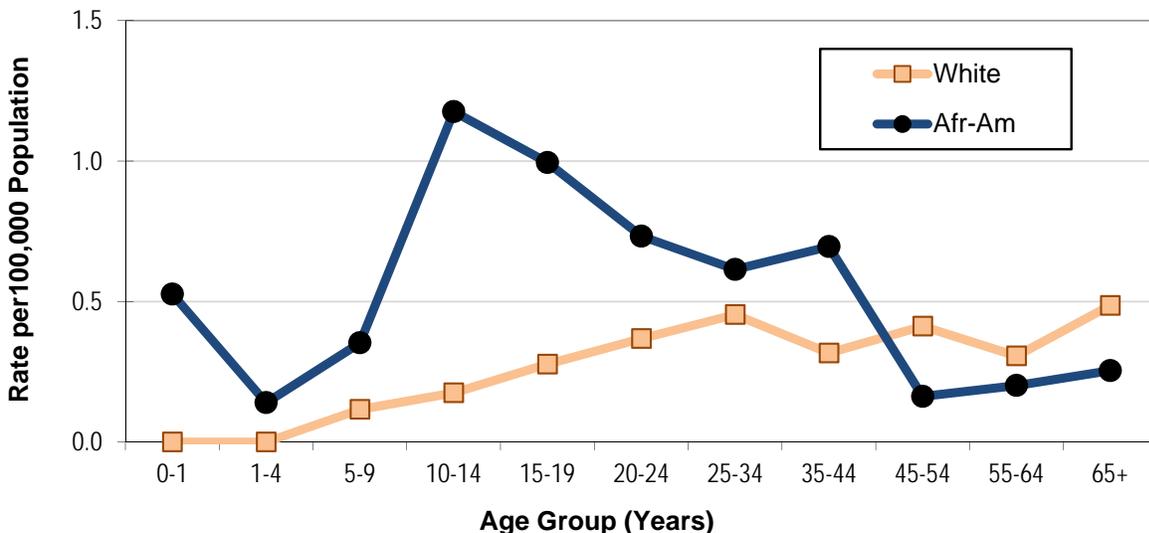
Figure 3: Acute HAV Average Annual Incidence Rates by Gender and Age - Louisiana, 2005-2013



Transmission of hepatitis mainly occurs via the fecal-oral route. Children and toddlers (newborn to four-years-old) are most at the risk of infection, but the majorities of those infected at a very young age are asymptomatic, and therefore not recognized or reported.

The average incidence by age group shows a slightly different pattern by race. For the White population, there is a slight peak for the five to nine-year-old age group, a slight peak for young adults (20 to 34 years), and another peak in the older age group (65+ years). For African-Americans, there is a peak in children between the ages of ten to 14 years due to nine cases being reported in 2006. If the 2006 cases were excluded, the average incidence for 2005 and 2007-2011 would be 0.4 per 100,000. Also, a slight peak occurs in young adults, between the ages of 20 and 44 years (Figure 4).

Figure 4: Acute HAV Average Annual Incidence Rates by Race and Age - Louisiana, 2005-2013



Geographical Distribution

The geographical distribution is unremarkable. Large numbers of cases are reported in heavily populated areas like Orleans and Jefferson parishes with other parishes reporting fewer cases. A five-year average shows that the only parishes with high rates are low population parishes who reported high number of cases for short periods (for example, St. Landry - 15 cases in 2006; West Baton rouge – two cases in 2006; St. James - two cases in 2007; Acadia – three cases in 2007). There do not seem to be parishes which are continuous hotbeds of hepatitis A.

Hepatitis A - Related Hospitalizations

In 1997, the Louisiana Legislature mandated the reporting of hospital discharge data. The Louisiana Hospital Discharge Database (LaHIDD) serves as the state registry containing inpatient discharge data submitted to LDH, OPH by Louisiana hospitals. Yearly LaHIDD datasets contain parish, age, admit date, demographic and diagnosis information on all inpatients. These datasets are a tremendous resource allowing epidemiologists to examine absolute numbers and trends due to infectious diseases, for example, hepatitis related disease (Table).

Table: Hepatitis A-Related Hospital Admissions - Louisiana, 1999-2010

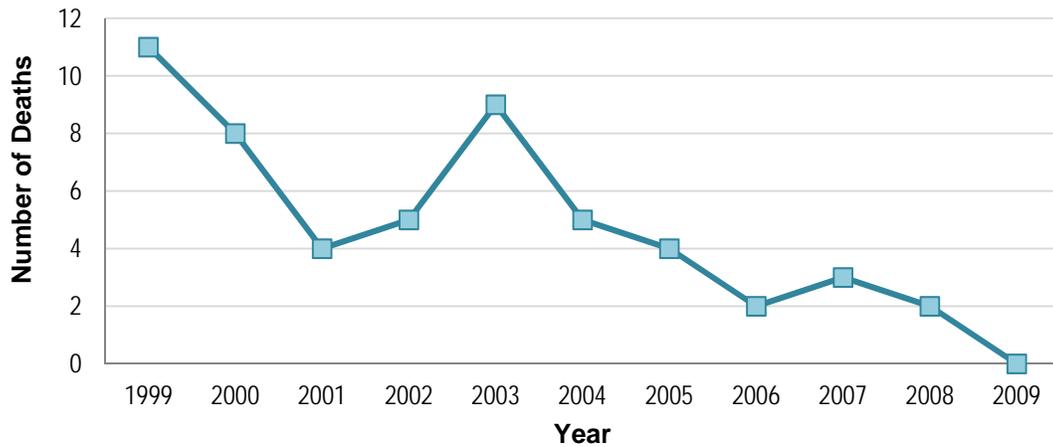
Year	Admissions	Admit Rate	Males	Females	Percent Males
1999	156	3.5	73	83	46.8%
2000	120	2.7	58	62	48.3%
2001	124	2.8	66	58	53.2%
2002	118	2.6	68	50	57.6%
2003	113	2.5	63	50	55.8%
2004	37	0.8	24	13	64.9%
2005	41	0.9	24	17	58.5%
2006	99	2.3	47	52	47.5%
2007	119	2.8	61	58	51.3%
2008	121	2.7	65	56	53.7%
2009	105	2.3	56	46	53.3%
2010	86	1.9	45	41	52.3%

Hepatitis A – Related Deaths

The ICD 10 codes for hepatitis A are: B15 for acute hepatitis A; B150 for hepatitis A with hepatic coma; B159 for hepatitis A without hepatic coma.

At the time of this report, death data was available for the years of 1999 to 2009. A low number of hepatitis A related deaths are reported each year. The highest number of deaths related to hepatitis A occurred in 1999 with 11 deaths. Since 2003, the numbers of hepatitis A related deaths have been decreasing (Figure 5).

Figure 5: Hepatitis A - Related Deaths - Louisiana, 1999-2009



There is a higher number of hepatitis A related deaths in males compared to females. With the exception of 2006 and 2007, the average age of death between 1999 and 2009 ranged between 51 and 65 years of age. In 2006, the average age of death was 73 years and in 2007, the average death age was 34 years. The younger average death age in 2007 was due in part, to the death of a 25 year-old male with liver cell carcinoma listed as the primary cause of death and hepatitis A (ICD 10 code B159) listed as a secondary cause of death. The 53 deaths between 1999 and 2009 related to hepatitis A were among people with various occupations; there seemed to be no obvious association between the infection and the person's line of work.