

Viral Hepatitis Surveillance and Prevention Update

Viral Hepatitis Surveillance

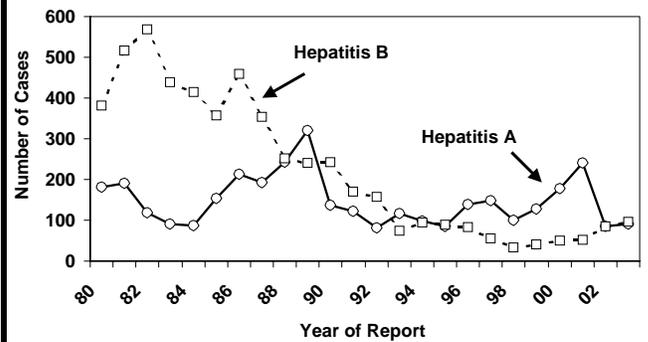
Acute cases of hepatitis A, B, C, delta, and non-A/non-B are physician reportable, and clinical tests indicative of viral hepatitis infection are laboratory reportable. Surveillance case definitions for acute hepatitis A, B, and C have been developed by the Centers for Disease Control and Prevention (CDC) (Table 1). Physicians should report diagnosed acute cases of viral hepatitis to the Connecticut Department of Public Health (DPH) using form PD23, and laboratories should report significant findings using form OL15C. The DPH conducts surveillance for chronic infection based on laboratory reporting of HBsAg and anti-HCV.

Trends in acute hepatitis A and B infection reported since 1980 are shown in Figure 1. In response to an increase in hepatitis A cases involving gay men in New Haven County in 2000-2003, a targeted vaccination campaign was conducted by the DPH, New Haven Health Department, and the Hartford Gay and Lesbian Health Collective. The increase in hepatitis B cases during 2002-2003 was due to a change in surveillance practices. Staff of the DPH

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Figure 1. Number of Acute Hepatitis A and B Cases by Year of Report, Connecticut, 1980-2003.



had begun follow-up of HBsAg-positive laboratory reports to determine acute or chronic status. Reported hepatitis A and B cases by town of residence can be found on the DPH website (www.dph.state.ct.us).

Table 1. Public health surveillance case definitions for acute hepatitis A, B, and C.

Confirmed acute case: meets the clinical case definition and is laboratory confirmed.

Clinical case definition: An acute illness with a) discrete onset of symptoms and b) jaundice or elevated ALT.

Laboratory criteria for confirmation of diagnosis of acute disease

Hepatitis A	Hepatitis B	Hepatitis C
IgM anti-HAV+	IgM anti-HBc+ (preferred)	ALT > 7 times the upper limit of normal;
(Hepatitis A can be confirmed without laboratory testing if there is an epidemiological link to a confirmed case)	or	and
	HBsAg+ (if IgM anti-HBc not done)	IgM anti-HAV negative and IgM anti-HBc negative or HBsAg negative;
		and
		anti-HCV+ (≥ 3.8 signal to cut-off ratio) or anti-HCV+ (verified by RIBA or RNA testing).

ALT = serum alanine aminotransferase; IgM = immunoglobulin M; anti-HCV = hepatitis C antibody; anti-HAV = hepatitis A antibody; anti-HBc = hepatitis B core antibody; HBsAg = hepatitis B surface antigen; RIBA = recombinant immunoblot assay.

The DPH receives more than 5,000 positive laboratory tests for hepatitis C annually. To date, none of these reports have met the surveillance definition for a confirmed case of acute hepatitis C infection. This may be due, in part, to the complexity of the case definition -- necessitated by the lack of a laboratory test specific for acute hepatitis C infection.

Hepatitis B Vaccination Requirements

State statutes mandate that children entering daycare, kindergarten, and 7th grade have documentation of vaccination against hepatitis B, as well as other vaccine preventable diseases. The DPH Immunizations Program periodically evaluates vaccination coverage. The results of the most recent assessments for hepatitis B vaccination are shown in Table 2 and indicate strong compliance with daycare and school entry requirements.

“Vaccinate Before You Graduate”

Connecticut is one of four states funded by the CDC to conduct a demonstration project to prevent viral hepatitis infection in high-risk youth. One of the activities of this project is the “Vaccinate Before You Graduate” campaign. The goal is to increase hepatitis B vaccination in high school students too old to have been vaccinated as a result of 7th grade entry requirements. Since hepatitis B vaccination rates in 11-12th grade students had not been assessed, a survey was distributed to school-based health centers and school nurses in November 2003. As of April 2004, 125 (54%) schools representing 45,998 students responded. Overall, 76% of 11th graders and 70% of 12th graders had documentation of vaccination (range 28% to 100% by individual school) (Table 2). To encourage vaccination, schools were offered free hepatitis B vaccine. Educational materials and an interactive educational theater performance (hepatitis A, B, and C) were developed to facilitate acceptance of vaccination among students and staff. The survey will be repeated during May–June 2004 to measure vaccination acceptance.

Perinatal Hepatitis B Prevention

The DPH has conducted perinatal hepatitis B prevention case management since 1995. Hepatitis B infection (acute or chronic) during pregnancy is a physician-reportable condition. To provide information about hepatitis B prevention, each HBsAg-positive pregnant woman and her obstetrician and pediatrician are contacted before

delivery. Ongoing follow-up is conducted with the mother and pediatrician to ensure the newborn and household contacts are appropriately vaccinated and tested. During 1995-2003, 938 cases were reported and followed-up (annual average 104). Of these, 91% of the newborns received HBIG and hepatitis B vaccine on schedule, and only 1.5% of appropriately tested newborns were hepatitis B infected. Before implementation of this program, only 40% of infants received appropriate treatment (1). It is estimated that 24-31% of newborns could become infected in the absence of immunoprophylaxis (2).

Provider and Community Education Forums

Provider and community education has been an important focus of the DPH viral hepatitis prevention efforts. In November 2003, the DPH co-sponsored, with the Hepatitis Foundation International and the Rhode Island and Massachusetts state health departments, a viral hepatitis conference in New London County for health care providers. In March 2004, the DPH co-sponsored, with the Connecticut Chapter of the American Liver Foundation, a presentation for physicians and community members in Fairfield

Table 2. Hepatitis B vaccination in children, Connecticut, 2003-2004.

Survey	% 3 doses
2002 Immunization Registry Tracking System (2000 birth cohort - 2 years of age)	90%
2002 Immunization Registry Tracking System (2000 birth cohort - 2 years of age: continuous Medicaid enrollees)	88%
2003-2004 Daycare Immunization Survey (19 mo – 5 years of age)	99%
2003-2004 School Entry Immunization Survey (kindergarten)	99%
2003-2004 Annual School Survey (7 th grade)	98%
2003-2004 Annual School Survey (8 th grade)	95%
2004 Vaccinate Before You Graduate (11 th grade)	76%
2004 Vaccinate Before You Graduate (12 th grade)	70%

County. Future presentations are planned for Litchfield and Windham counties.

State Viral Hepatitis Prevention Plan

The DPH has been funded by the Council of State and Territorial Epidemiologists and the CDC to develop a "Connecticut Viral Hepatitis Prevention Plan." Statewide viral hepatitis planning committees were convened and a viral hepatitis forum was held in 2002. Input from the forum and continued work with stakeholders are contributing to the development of the plan. Priorities include surveillance, education and prevention, communication and outreach, and policy development. Release and distribution of the prevention plan will be in 2004.

Reported by: A Roome, A Lombard, HIV/AIDS Surveillance and Viral Hepatitis Prevention Program; V Sacco, Immunizations Program, Connecticut Department of Public Health.

References:

1. Roome A, M Rak, J Hadler. 1996. Prevention of perinatal hepatitis B through enhanced case management - Connecticut, 1994-95, and United States. *MMWR*. 45:584.
2. Roome A, M Rak, J Hadler. 2000. Follow-up of infants of hepatitis B-infected women after hepatitis B vaccination, Connecticut, 1994-1997. *Pedi Inf Dis J* 19:573.

Hepatitis A Infection Among Patrons of a Fairfield County Restaurant

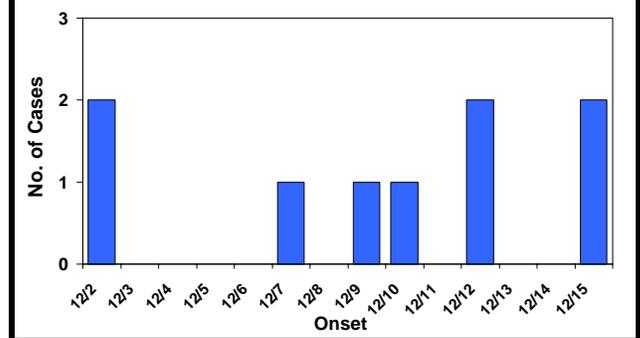
In December 2003, 2 cases of hepatitis A from the same community in Fairfield County were reported to the Department of Public Health (DPH) by a clinical laboratory. During the same week, 3 additional cases were identified in residents of the same area. Interviews with all 5 cases identified an association with an eating establishment. The local health department (LHD) was notified and an investigation of Restaurant A was conducted by the LHD and the DPH.

To identify additional cases, a request was made to laboratories to immediately report by fax all positive IgM anti-HAV test results from Fairfield County to the DPH. A review of hepatitis A surveillance data was conducted. Persons newly reported with hepatitis A were interviewed and questioned about eating food from Restaurant A.

An outbreak-related case was defined as a person with a positive IgM anti-HAV test who had eaten at Restaurant A during the preceding 6 weeks.

A total of 9 Connecticut residents meeting the case definition were identified. Of these, 6 were male; ages ranged from 5 years to 48 years (median 36 years); and 2 were hospitalized. Dates of onset ranged from December 2 to December 15 (Figure 1). Two secondary cases generated from household exposure to a primary case were also identified.

Figure 1. Hepatitis A Infection Among Patrons of Restaurant A Connecticut, December 1 – December 15, 2003



An investigation of Restaurant A identified one food worker who traveled to the Dominican Republic in mid-October and was diagnosed with acute hepatitis A in late November. This food worker had worked at Restaurant A during the 2 weeks before onset of symptoms.

Food workers at Restaurant A were individually interviewed about recent illness and good hygienic practices were reinforced (e.g., strict hand washing after bathroom use). Hepatitis A educational materials were distributed.

Serum samples were drawn on all restaurant employees to identify antibody titers suggestive of a recent hepatitis A infection or immunity to hepatitis A through a previous exposure. All samples were seronegative for IgM anti-HAV (recent infection). Four samples were positive for IgG anti-HAV (past infection).

The environmental investigation of Restaurant A focused on hand washing and bathroom facilities, types of foods handled, and prepared food storage. This investigation identified excessive bare-hand contact with ready to eat food items and a lack of suitable hand washing facilities. The restaurant management agreed to voluntarily close for 2 weeks to address deficiencies identified in the environmental investigation.

In This Issue...

Viral Hepatitis Update, Hepatitis A Outbreak

A statement notifying the public of potential exposure to hepatitis A virus was released. Patrons who had consumed food at Restaurant A and experienced symptoms suggestive of hepatitis were asked to consult with their health care provider. Immune globulin (IG) was not recommended for patrons of Restaurant A since more than 2 weeks had elapsed since possible exposure to the index case. However, it was recommended that household members of persons who developed hepatitis A consider IG.

Reported by: Z Dembek, P Mshar, T Rabatsky-Ehr, K Frenette, Epidemiology and Emerging Infections Program; T Weeks, J Bashura, Food Protection Program, Connecticut Department of Public Health.

Editorial:

Hepatitis A virus is transmitted via the fecal-oral route and can be passed person-to-person and by contaminated food. The most likely source of infection in this outbreak was food served at Restaurant A from early to mid-November that was prepared by the implicated food worker. Deficiencies in food handling practices that could

have facilitated the transmission of hepatitis A to patrons were identified at Restaurant A.

Prevention of hepatitis A infection depends on identifying persons at risk and administering IG within 10 days after exposure. Health care providers aware of food workers potentially infected with viral hepatitis should immediately notify the DPH and the LHD.

Because food workers with acute HAV infection may expose large numbers of persons, the DPH strongly encourages the pre-employment vaccination of all food workers and bartenders.

Prompt and appropriate management of household contacts with IG can prevent subsequent cases.

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