

HEPATITIS B

Includes Acute and Chronic Infection

Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of acute hepatitis B and chronic hepatitis B. In the U.S. military, potential applicants are considered medically ineligible for service if they have current acute or chronic hepatitis, hepatitis carrier state, clinically apparent hepatitis within the preceding six months, persistent symptoms of hepatitis, or evidence of liver function impairment.¹ New service members are screened for immunity to hepatitis B virus on the basis of serological evidence of immunity or documentation of previous receipt of hepatitis B vaccine. The vaccine is given to those without evidence of immunity.

Clinical Description

Hepatitis B virus (HBV) causes an inflammatory liver disease (hepatitis B) in affected individuals. The virus is spread by percutaneous or mucous membrane exposure to infected blood or body fluids. Risk factors include high-risk sexual activity, illegal injection drug use, and birth to an infected mother. Most adults who become infected with HBV develop acute hepatitis B and then recover completely. A small proportion of those infected with HBV become chronically infected with the virus; of these individuals, most are asymptomatic. A relatively small proportion of those who are chronically infected develop chronic active hepatitis with persistent liver inflammation, tissue damage, and dysfunction. Chronic infection increases the risk of hepatocellular carcinoma.²

Case Definition and Incidence Rules

Applicable independently to cases of acute or chronic hepatitis B

For surveillance purposes, a case of *acute* or *chronic* hepatitis B is defined as:

- *One hospitalization* with a defining diagnosis of acute or chronic hepatitis B (see ICD9 and ICD10 code lists below) in *any* diagnostic position; or
- *Two outpatient medical encounters*, occurring *within 90 days* of each other, with a defining diagnosis of acute or chronic hepatitis B (see ICD9 and ICD10 code lists below) in *any* diagnostic position; or
- One record of a reportable medical event of a *confirmed* case of hepatitis B.
- Individuals who have met the case definition of an acute case may be considered a subsequent chronic case after a single hospitalization or outpatient diagnosis of chronic hepatitis B.

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¹ Memorandum for the Assistant Secretaries of the Army, Navy and Air Force, Chairman, Joint Chiefs of Staff, and Executive Director, TRICARE Management Activity. Vaccination of new recruits against hepatitis B. Washington, DC: The Assistant Secretary of Defense, 29 April 2002.

² Kuper H, Ye W, Broome U, et al. The risk of liver and bile duct cancer in patients with chronic viral hepatitis, alcoholism, or cirrhosis. *Hepatology*. 2001; 34:714-718.



Case Definition and Incidence Rules *(continued)*

- For individuals with diagnoses of both acute *and* chronic hepatitis B recorded on the same day, all encounters on that day are considered chronic hepatitis B.

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of onset documented in a reportable medical event report, or the first hospitalization or outpatient medical encounter that includes a defining diagnosis of acute or chronic hepatitis B.
- An individual may be considered an incident case only *once per lifetime* for acute hepatitis B and *once per lifetime* for chronic hepatitis B.

Exclusions:

- Outpatient medical encounters with evidence of a hepatitis B immunization within one week before or after the case-defining encounter. The following vaccine administration codes are used to identify instances of hepatitis B immunization: CVX codes: 008, 030, 042, 043, 044, 045, 051, 102, 104, 110; CPT code: 90746.
- Individuals who met the case definition for *chronic* hepatitis B prior to the surveillance period are excluded from being counted as cases of either acute or chronic hepatitis B during the surveillance period.
- Individuals who met the case definition for *acute* hepatitis B prior to the surveillance period are excluded from being counted as cases of *acute* hepatitis B during the surveillance period; they may be counted as cases of *chronic* hepatitis B during the surveillance period.

Codes

The following ICD9 and ICD10 codes are included in the case definition:

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Hepatitis B (Acute)	<i>B16 (acute hepatitis B)</i>	--
	- B16.0 (acute hepatitis B with delta-agent with hepatic coma)	070.21 (acute viral hepatitis B with hepatic coma, with hepatitis delta)
	- B16.1 (acute hepatitis B with delta-agent without hepatic coma)	070.31 (acute viral hepatitis B without mention of hepatic coma, with hepatitis delta)
	- B16.2 (acute hepatitis B without delta-agent with hepatic coma)	070.20 (acute viral hepatitis B with hepatic coma, without mention of hepatitis delta)

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	- B16.9 (acute hepatitis B without delta-agent and without hepatic coma)	070.30 (acute viral hepatitis B without mention of hepatic coma, without mention of hepatitis delta)
	B19.1 (unspecified viral hepatitis B)	070.20 (above)
	- B19.10 (unspecified viral hepatitis B without hepatic coma)	070.30 (above)
	- B19.11 (unspecified viral hepatitis B with hepatic coma)	
Hepatitis B (Chronic)	<i>B18 (chronic viral hepatitis)</i>	--
	- B18.0 (chronic viral hepatitis B with delta-agent)	070.23 (chronic viral hepatitis B with hepatic coma, with hepatitis delta) 070.33 (chronic viral hepatitis B without mention of hepatic coma, with hepatitis delta)
	- B18.1 (chronic viral hepatitis B without delta-agent)	070.22 (chronic viral hepatitis B with hepatic coma, without mention of hepatitis delta) 070.32 (chronic viral hepatitis B without mention of hepatic coma, without mention of hepatitis delta)
	Z22.51 (carrier of viral hepatitis B)	V02.61 (hepatitis B carrier)

Development and Revisions

- In June of 2014 the case definition was updated to include ICD10 codes.
- This case definition for hepatitis B was developed in August 2011 by the *Medical Surveillance Monthly Report (MSMR)* staff for use in an article on hepatitis B.¹ The case definition was developed based on reviews of the ICD9 and ICD10 codes, the scientific literature, and previous AFHSC analyses.

Case Definition and Incidence Rule Rationale

- The 90 day interval between the two outpatient visits is used to increase the sensitivity of the case definition because acute hepatitis B can take 1 to 3 months to resolve and repeat encounters are likely to occur within this time period. Further, the time interval permits medical evaluations to distinguish prolonged courses of acute hepatitis B from chronic hepatitis B.
- Outpatient medical encounters with evidence of a hepatitis B immunization *within one week before or after* the case-defining encounter may represent screening or “rule out” visits: therefore, the encounters are excluded from contributing to the two outpatient visits required to define a case.

Code Set Determination and Rationale

- ICD9 code 070.59 (other specified viral hepatitis without mention of hepatic coma) / ICD10 B18.9 (chronic viral hepatitis, unspecified) are not included in the code set. The code include Hepatitis B and C but is not specific to either.



Reports

AFHSB reports on hepatitis B in the following reports:

- Periodic *MSMR* reports

Review

Nov 2018	Case definition reviewed and updated by the AFHSB Surveillance Methods and Standards (SMS) working group.
Jun 2014	Case definition reviewed and updated by the AFHSC Surveillance Methods and Standards (SMS) working group.
Oct 2011	Case definition reviewed and adopted by the AFHSC Surveillance Methods and Standards (SMS) working group.
Aug 2011	Case definition developed by AFHSC <i>MSMR</i> staff.

Comments

Armed Forces Reportable Events: Hepatitis B is a reportable medical event in the Armed Forces Reportable Events surveillance system under “Vaccine Preventable” disease.

