Appendix 2 – Hepatitis Laboratory Tests

Laboratory Tests Available for HAV, HBV and HCV

Hepatitis A	Anti-HAV Total (anti-HAV IgG + anti-HAV IgM) or Anti-HAV IgG		• Immunity from past infection or vaccination. • Pre-vaccination testing is only indicated for populations where there may be higher levels of pre-existing immunity (e.g., chronic liver disease, HBV or HCV co-infection). Refer to the BCCDC Immunization Manual. • There are no indications for post-vaccination HAV serology or boosters following a complete hepatitis A vaccine series. Almost 100% of immune competent vaccine recipients will develop immunity.
	Anti-HAV IgM		Acute HAV requires confirmation with clinical history, as a positive anti-HAV IgM can indicate: • Acute hepatitis A infection. • Recent hepatitis A vaccination. About 5% of people immunized with hepatitis A vaccine will develop a positive anti-HAV IgM. • A false-positive test result, given the low prevalence of HAV infections in BC. • A remote resolved infection with HAV (can remain detectable for years after acute infection).
Hepatitis B	HBsAg	Screening tests	• Implies acute or chronic HBV infection. • Remains positive for 3-4 weeks after receipt of hepatitis B vaccine.
	Anti-HBs	Screening tests	• Immunity due to vaccination or past infection. • Remains positive for approximately 6 months following hepatitis B immune globulin (HBIg). • Anti-HBs ≥ 10 IU/L confirms a protective antibody level and does not have to be repeated if immune competent. Even with waning antibody levels, protective immunity persists for decades. • Pre-vaccination testing is appropriate only in certain populations (see the BCCDC Hepatitis B Guidelines, Section 4.4). • Post-vaccination testing is not necessary for people who do not have a known risk, except in certain populations (see the BCCDC Hepatitis B Guidelines, Section 4.5 and Table 4-2).
	Anti-HBc Total (IgG + IgM)	Screening tests	• Identifies prior HBV infection. • Not present after immunization. • Can be false positive in areas of low HBV prevalence.
	Anti-HBc IgM		• Rarely required for clinical management. Requires clinical correlation for interpretation. • Appears early in acute infection, lasting > 6 months. • Can occur in approximately 20% of people with chronic HBV infection during flares or reactivation.
	HBeAg	*Used by specialists to monitor treatment.* ***Not*** *for routine testing in general practice.*	• Indicates viral replication and correlates with higher HBV DNA levels. • Identifies infected individuals at higher risk for transmitting HBV.
	Anti-HBe	*Used by specialists to monitor treatment.* ***Not*** *for routine testing in general practice.*	• Identifies infected individuals at lower risk for transmitting HBV.
	HBV DNA	*Used by specialists to monitor treatment.* ***Not*** *for routine testing in general practice.*	• Indicates the magnitude of HBV replication and risk of disease progression. • Useful for therapeutic monitoring of chronic HBV infection. • High viral load correlates with a higher risk of cirrhosis and HCC.

Hepatitis C	Anti-HCV	• Indicates infection with HCV at some point in time. • Does not differentiate between a resolved case and current infection (approximately 25% of people will spontaneously clear an initial HCV infection). • Detectable within 5-10 weeks after infection. If immunocompromised (e.g., HIV where CD4+ is less than 50), there may be a delay in seroconversion and this can lead to a false negative. • Usually persists for life and does not need to be repeated once positive, even if successfully treated or after an infection has spontaneously cleared on its own. • Antibodies are not protective. If someone has cleared an initial HCV infection (whether spontaneously or due to treatment), they can get reinfected.
	HCV RNA	• Confirms current infection with HCV. • HCV RNA levels do not correlate with disease progression. • Used to determine successful virological cure 12 weeks post-treatment (sustained virological response, SVR12) and to monitor for HCV re-infection.
All Hepatitis	ALT, AST (not routinely required but needed to generate the APRI score), Platelets, Albumin, INR	• Elevation reflects hepatocyte injury. • Can occur in acute or chronic hepatitis and other types of liver disease. • Patients with severe cirrhosis may have ALT levels within the normal range. • The AST to Platelet Ratio Index (APRI) is an indirect method of predicting significant and severe fibrosis or cirrhosis and is one of the acceptable methods of staging needed when applying for HCV treatment coverage (www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/pharmacare/prescribers/special-authority). • For an online APRI calculator, see www.hepatitisc.uw.edu/page/clinical-calculators/apri. • See the associated BC Guideline: Abnormal Liver Chemistry - Evaluation and Interpretation.