INFORMATION FOR HEALTHCARE PROVIDERS

Hepatitis B Virus (HBV) Management Quick Reference Guide

For TPH's overview of hepatitis B, please see toronto.ca/hepatitisB

SCREENING

- **Individuals born in areas with HBV prevalence greater than 2%** (e.g., Africa, Asia, Eastern & Southern Europe, the Middle East, Asian-Pacific Islands, Indigenous areas, Central and South America, and the Caribbean) and
- Individuals who have travelled or resided in these areas
- Individuals starting immunosuppressive therapy (particularly cancer chemotherapy), or renal dialysis
- Individuals with chronically elevated ALT or AST of unknown origin
- Children, household and/or sexual contacts of HBsAg-positive individuals or those with a family history of HBV
- All pregnant individuals and infants of HBsAg-positive mother/ birthing parent
- Individuals who have sustained occupational exposure to blood and/or body fluids
- Organ transplant recipients & Individuals who have undergone medical procedures in Canada prior to 1970
- Individuals infected with hepatitis C (HCV) or HIV
- Individuals with higher-risk sexual activity (e.g. unprotected sex, multiple partners, history of STI, MSM)
- Individuals who are currently/previously incarcerated
- Individuals living in congregate settings, including developmental disability support facilities
- Individuals with current/previous substance use with shared paraphernalia ("Works")
- All adults in Canada who have not yet been screened for HBV (2025 Recommendation from AMMI)

TESTING

Public Health Ontario General Test Requisition Form available online.

Pattern	*HBsAg*	*Anti-HBs*	*Anti-HBc*	*Interpretation*
Susceptible (newer infection)	-	-	-	No evidence of past or current infection; not immune
Immune (vaccination)	-	+	-	Vaccine-induced immunity
Immune (past infection)	-	+	+	Resolved prior infection with immunity
Acute Infection	+	-	+ (IgM+)	Recent infection; high infectivity
Chronic Infection	+	-	+ (IgM-)	Persistent infection >6 months
Isolated anti-HBc	-	-	+	See note below**

**An isolated anti-HBc result (HBsAg-, anti-HBs-, and anti-HBc+) has four possible interpretations:

1. **Resolving acute infection** (window period – between HBsAg clearance and anti-HBs appearance)
2. **Remote past infection** with waned anti-HBs below detectable levels
3. **Low-level chronic infection** (occult HBV – HBV DNA may be detectable)
4. **False positive** anti-HBc result

Next Steps: consider HBV DNA testing. If patient is truly susceptible, offer vaccination and confirm response with post-vaccine anti-HBs

INITIAL WORK-UP

- ***Labs***: CBC, AST, ALT, bilirubin, albumin, creatinine, INR
- ***Tests of HBV replication***: HBeAg, anti-HBe, HBV DNA viral load
- ***Rule out viral co-infection***: hepatitis C (anti-HCV), HIV (HIV serology), hepatitis D ("delta", anti-HDV)
- ***Screening***: abdominal ultrasound

ROUTINE FOLLOW-UP

- Counsel on the prevention of HBV transmission.
- Provide advice to reduce liver damage and medication considerations with cirrhosis
- Follow HBV DNA and ALT every six to 12 months
- Screen for **Hepatocellular Carcinoma (HCC) every six months with abdominal ultrasound:** for men >40 years old (>20 years old, if African descent), women >50 years old, any patient with a family history of hepatoma & those with cirrhosis of any age. *HCC may occur in the absence of cirrhosis.*

COUNSELLING FOR HIGH -RISK CONTACTS

High Risk Contacts (Susceptible Sexual, household, occupational)

- **Contacts:** Immunize all susceptible contacts of acute and chronic carriers with HBV vaccine.
  - Order online vaccine for high-risk clients from Toronto Public Health. Batch orders are still available for some vaccines. Please read the **eligibility criteria** before ordering vaccine. **Order Vaccine Online**.
  - HB vaccine is ~ 95–100% effective when given before exposure.
- **Children and Infants:** Discuss immunization for infants and children <7 years at high risk (e.g., frequent contact with an HBV positive person or travel to an endemic country). Ensure proper follow-up.
  - Immunize and provide hepatitis B Immune globulin (HBIG) to infants at birth where the birthing parent has HBV, with follow-up to confirm protection.
  - Pregnancy and breastfeeding are not contraindications to hepatitis B vaccination or HBIG.
- **Sexual contacts:** Give a single dose of HBIG within 14 days of the last sexual contact with the case.
  - Advise that protection cannot be ensured until vaccine course completed and antibodies tested (30 days after the final dose of vaccine).
  - Counsel on use of condoms to reduce, but not eliminate, risk of transmission.
- **Percutaneous/mucosal injuries/exposure (e.g. Occupational, bites):** managed based on immune status of the exposed (injured) person (ideally within 7 days).

PRE & POST VACCINE COUNSELLING

Pre-Immunization Testing (PIT)

- If risk factors are present, testing first is indicated
- Do not delay immunization if a contact's status is unknown, in favour of PIT.

Post-Vaccine Serology (PVS)

- Indicated only to assess level of protection against a continual known or repeated potential exposure to HBV (e.g. Occupational, household, higher-risk exposures, etc.) and is conducted ***at least 30 days after last dose.***
- Immunity through vaccine: when surface antibodies (anti-HBs) level is ≥ 10 mIU/mL.
- **For vaccinated infants:** Conducted when baby is between 9-18 months of age.
- **For all other vaccinated contacts/exposed (sexual, household, occupational):** PVS between 1-6 months after last dose.

Vaccine Non-Responders

- For those who fail to show a response to the first series of vaccinations (HBsAb <10 mIU/mL), an additional three-dose series will produce a protective antibody response in 50-70% of recipients.
- Individuals who fail to respond to **two complete 3 dose series**, are unlikely to benefit from further HBV immunization

PREGANCY AND INFANT MANAGEMENT

Universal Prenatal Screening:

- Screen **ALL** pregnant individuals for HBsAg in the first trimester of EACH pregnancy.
- If not tested prenatally or no record → test at admission for delivery.
- **High-risk individuals:** Retest at delivery even if previously negative earlier in pregnancy.

If Pregnant Individual is HBsAg Positive

- **Complete baseline labs:** ALT, AST, bilirubin, albumin, INR, CBC, creatinine.
- **HBV-specific tests:** HBeAg, anti HBe, HBV DNA viral load, and fibrosis assessment
- **Refer** to specialist (hepatology, GI, ID or experienced primary HCP) for HBV management in pregnancy

Antiviral Therapy in pregnancy

- **Refer** to specialist (hepatology, GI, ID or experienced primary HCP) for HBV management in pregnancy
- Consider antiviral therapy (TDF or TAF) if HBV DNA >200,000 IU/mL, ideally starting by the second trimester to reduce risk of vertical transmission.

Infant Immunoprophylaxis

Infants born to known HBsAg positive birthing parents:

- Within 12 hours of birth: 1st dose hepatitis B vaccine and HBIG (different sites).
- Complete 3 dose series (0, 1, 6 months).
- **Infants <2000 grams** at birth should receive an additional dose at 2 months (total of 4 doses)

If maternal/birth parent HBsAg status unknown:

- Test for HBsAg.
- If HBsAg status is unknown within 12 hours of birth, consider giving Hepatitis B vaccine and HBIG based on maternal risk - *err on the side of providing both if infection is possible.*

PREGANCY AND INFANT MANAGEMENT (CONT.)

- If HBsAg + → follow positive result pathway.
- If HBsAg - → follow negative result pathway.

Post Vaccine Serology (PVS) Testing

- Perform **HBsAg** and **anti HBs testing** at 9 to 12 months of age, or 1–4 months after the final dose.
- **Interpretation:**
  - **Immune/uninfected:** HBsAg -, anti HBs ≥ 10 IU/L → no further action.
  - **Infected:** HBsAg + → refer.
  - **Non immune/ not protected:** anti HBs <10 IU/L → repeat full vaccine series & and repeat serology (per CIG).

Breastfeeding

- Safe once the infant has received **HBIG** and the **first Hep B vaccine dose at birth.**
- Not contraindicated for individuals taking treatment **(TDF or TAF).**
- No evidence of increased risk of HBV transmission from an HBsAg positive mother/birthing parent.

REFERRAL

Reasons for referral to specialty care (by a Hepatologist, GI, ID specialist, or a family physician with experience in HBV management):

- If age > 40 years old with positive HBV DNA
- If elevated ALT (men >30 U/L, women >20 U/L)
- If evidence of cirrhosis (e.g., low platelets, splenomegaly, hepatic mass or portal hypertension)
- If HBeAg +
- If HBeAg - , with HBV DNA viral load > 2,000 IU/ml
- Any HBsAg positive patient starting immunosuppressive therapy (even if normal ALT & negative HBV DNA)

Acute HBV: Refer to a specialist urgently if:

- Signs of liver failure (e.g., encephalopathy, worsening jaundice)
- INR elevated or rising
- Bilirubin elevated or rising
- Platelet count low or falling
- Clinical deterioration despite supportive care

INFORMATION FOR PATIENTS

- Toronto Public Health (TPH) – **Hepatitis B Disease Fact Sheet**
- Toronto Public Health (TPH) – **Hepatitis B Vaccine Fact Sheet**
- Available at **toronto.ca/hepatitis**
- **Liver Canda - Viral Hepatitis (A, B, C, and D) Booklet**, available at **liver.ca/hepatitis-b**
- **CASL and AMMI's Updated Management of Chronic Hepatitis B: 2025 Guidelines**
- CANImmunize App (**CANImmunize.ca**): digital immunization record that can be shared with schools and public health.

CONTACT US

To contact TPH, please call **416-338-8400** or email **CDCBloodborne@toronto.ca**

For more resources on hepatitis, please visit our website at: **www.toronto.ca/hepatitis**

Please **do not include any Personal Health Information** in the emails, to be in accordance with Privacy Legislation.

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