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Dialysis Lab Interpretation - Part 3: Hepatitis B & C

Clinical Education

4/2021



NORTHWEST
Kidney Centers

Learning Objectives



At the end of this presentation, the nurse will be able to:

1. Have a better understanding of NKC surveillance policies for Hep B and Hep C
2. Identify when Hep B & Hep C labs are drawn
3. Properly interpret Hep B & Hep C results
4. Determine nursing implications for positive results or sero-conversion
5. Identify the personnel to notify in event of positive results

Important Note



- This module will focus on lab interpretation for Hepatitis B and Hepatitis C
- Hepatitis B vaccination series will be discussed in the vaccination module.

Hepatitis B Virus (HBV)



Hepatitis B is a vaccine-preventable liver infection caused by the hepatitis B virus (HBV). (VERY infectious)

Transmission: through blood, semen, or other body fluids from a person infected with Hep B and enters the body of someone who is not infected.

How?

Through sexual contact; sharing needles, syringes, or other drug-injection equipment; or from mother to baby at birth, exposure to body fluids.

Hepatitis B Virus (HBV)



Signs & symptoms

Some people may be asymptomatic, but for those that do, symptoms can include:

- fatigue
 - poor appetite
 - stomach pain
 - nausea
 - Jaundice
-
- ❖ Many people may only have short-term illness
 - ❖ For others, it can be a long-term, chronic infection that can lead to serious health issues like cirrhosis or liver cancer.

Hepatitis B Virus (HBV)



- Virus can live on surfaces up to SEVEN days
- Spread by contact with blood/body fluids, sharing needles and from mother to newborn
- If exposed, risk = 23% to 62% that you will be infected
- Hemodialysis patients & healthcare workers at high risk of becoming infected with HBV
- Approximately 800,000 to 1.4 million people in US have chronic HBV infection

HBV Tests Terminology



Viral Hepatitis B Marker and Their Significance			
Hepatitis B Virus (HBV)			
	Definition	Common Terminology	Meaning of a Positive Test
HBsAg	Hepatitis B surface antigen	Surface antigen	HBV infection (additional tests needed to determine chronic or acute status)
Anti-HBs	Antibody to hepatitis B surface antigen	Surface antibody	Immunity to HBV (due to natural infection or HBV vaccination)
Anti-HBc	Antibody to hepatitis B core antigen	Core antibody	Natural infection (acute, resolved, or chronic); not present after vaccination
Anti-HBc IgM	Antibody to hepatitis B core, IgM fraction	Core IgM	Current or recent HBV infection (within 6 months); presence of anti-HBc IgM without HBsAg denotes "window" phase late in some acute HBV infections where HBsAg has dropped below detectable levels; can persist in some chronic HBV infections

Adapted from materials by the Hennepin County Community Health Department and the Minnesota Department of Health

HBV Surveillance – New Patients



Policy # SS-N3001 (New Patient) All new patients will have recent results (30 days prior to admit)

- ✓ **HBsAg** (surface antigen) **reactive = positive** for HBV
- ✓ **HBsAb** (surface antibody)
- ✓ **HBcAb** (Core Antibody)

****HBV positive patients require isolation****

HBV Surveillance – New Patients



Policy # IC-H6003 (Hep B) = If a patient has a negative HBsAg and negative HBsAb with a positive HBcAb, then an IgM anti-HBc must be ordered

If a patient is diagnosed with chronic HBV infection, the patient will be dialyzed in isolation at **Burien** or **SeaTac**

****Always consult with Infection Prevention Nurse if unsure.****

HBV Surveillance – Existing Patients



Policy # IC-H6003 = Hep B Surveillance & Vaccination

Important note about Hep B blood draws:

Do not draw Hep B labs on patients currently receiving the Hepatitis B vaccination series (wait at least 30 days post vaccination)

Refer to above policy if HBsAg result is “positive” or “reactive” and patient labs drawn during the vaccination series

Notify Infection Prevention Manager, CMO, and patient’s Nephrologist for ALL HBsAg reactive results

HBV Surveillance – Existing Patients



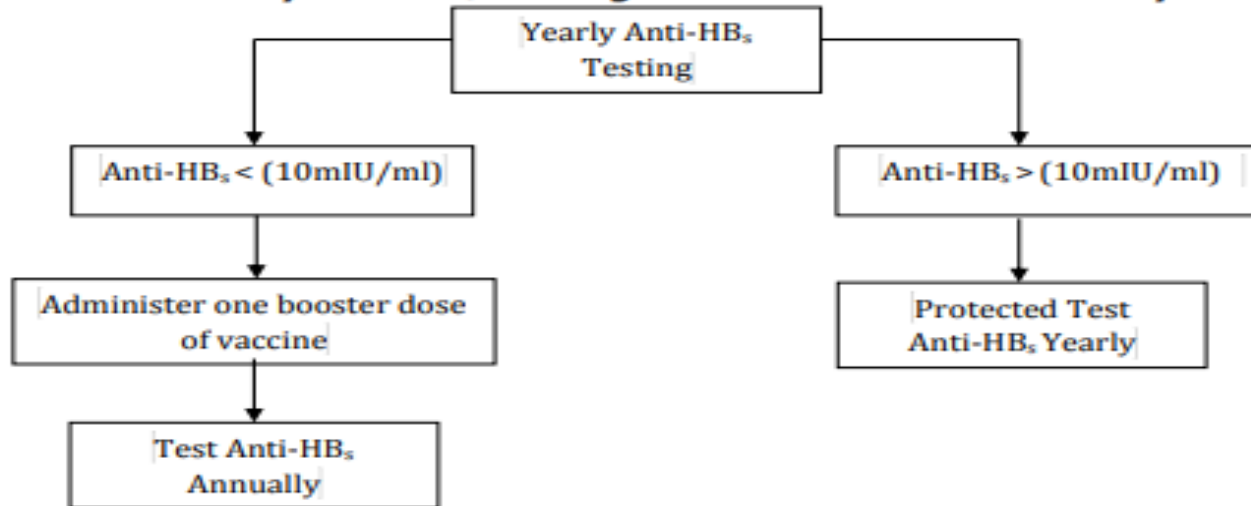
HBsAg

- ✓ Monthly if patient is **HBsAG negative** AND **Anti HBs negative**
- ✓ Annually (January) on **ALL PATIENTS**

Anti-HBs

- ✓ Annually (January) on **ALL PATIENTS**

Yearly Anti-HB_s Testing for Patients with Immunity

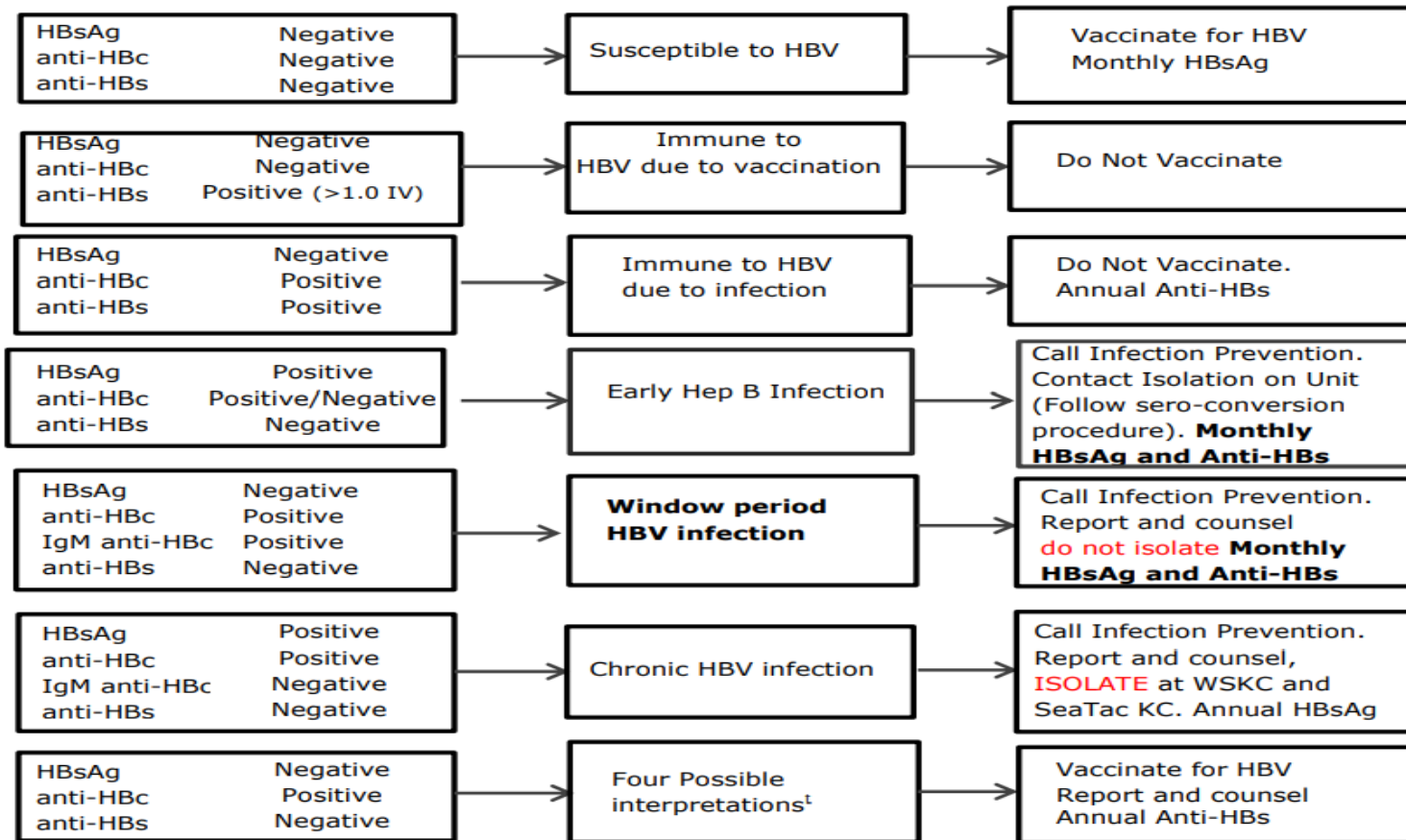


HBV Results Interpretation



Policy # IC-H6003 & CDC Interpretation Guidelines

Interpretation of Hepatitis B Laboratory Results, Vaccination and follow up lab Protocol (Attachment B)



Hepatitis C (HCV)



- Mode of transmission = exposure to infected blood
- Most common bloodborne infection in the U.S.
3.2 million chronic infection
- Prevalent among those born during 1945-1965
- Many infections due to illegal IV drug use
- About 40%-60% of chronic liver disease is due to HCV
- HD patients are at increased risks of acquiring HCV

- HCV reactive (positive) patients do not require isolation

Hepatitis C Surveillance



Policy # IC-H6040

Routine Surveillance Monitoring Hepatitis C
Antibody Screen:

- (a) All new patients will have Hepatitis C Ab drawn on admission
- (b) Hep C Antibody screen will be drawn semi-annually on ALL patients

Hepatitis C Sero-conversion Protocol

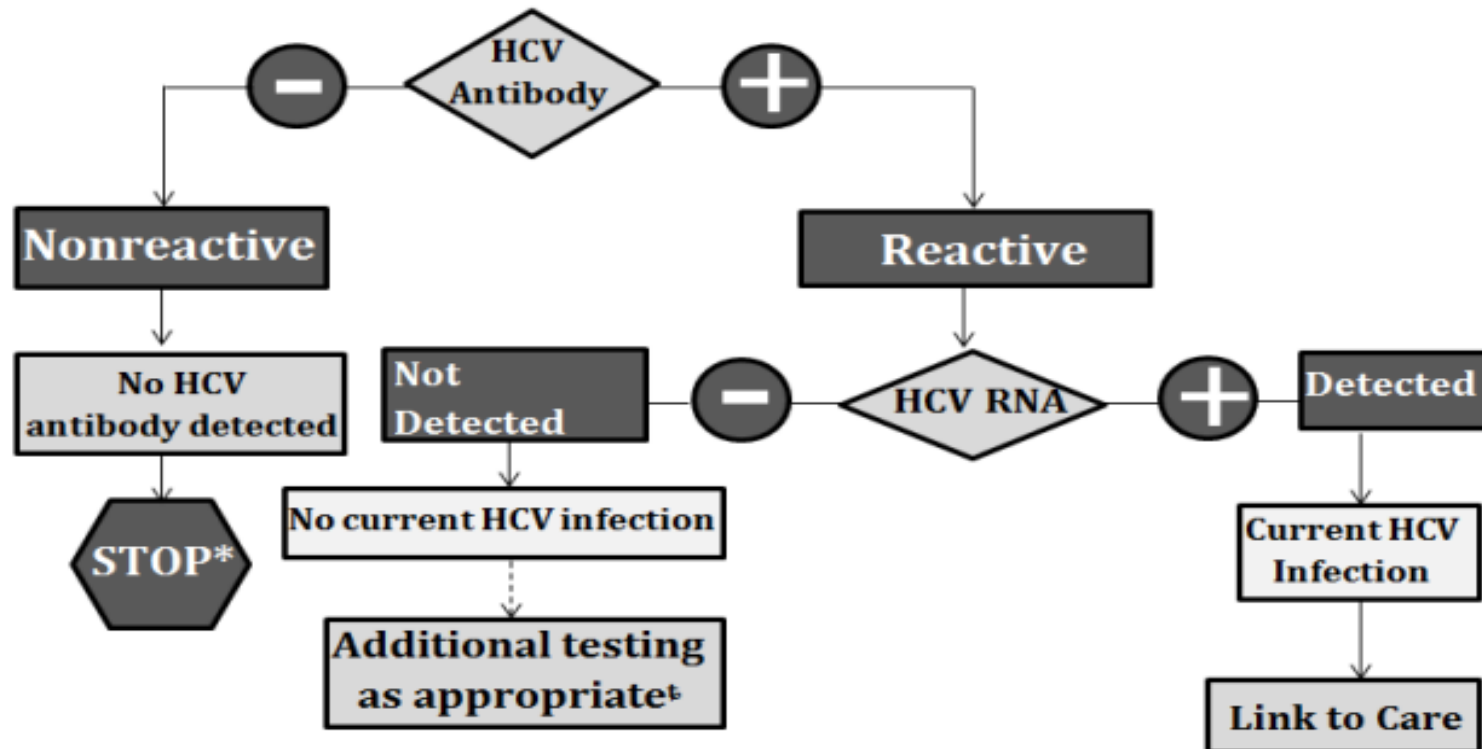
Notify Infection Prevention Department, CMO, Medical Director, and patient's nephrologist.

HCV Testing Algorithm



Northwest Kidney Centers

Recommended Testing Sequence For Identifying Current Hep C Virus (HCV) Infection



IC-H6040

Interpretation of HCV Results



Interpretation of Results of Tests for Hepatitis C Virus (HCV) Infection and Further Actions

Test Outcome	Interpretation	Further actions
HCV antibody nonreactive	No HCV antibody detected	Sample can be reported as nonreactive for HCV antibody. No further action required. If recent exposure in person tested is suspected, test for HCV RNA.*
HCV antibody reactive	Presumptive HCV infection	A repeatedly reactive result is consistent with current HCV infection, or past HCV infection that has resolved, or biologic false positivity for HCV antibody. Test for HCV RNA to identify current infection.
HCV antibody reactive, HCV RNA detected	Current HCV infection	Provide person tested with appropriate counseling and link person tested to care and treatment.†
HCV antibody reactive, HCV RNA not detected	No current HCV infection	No further action required in most cases. If distinction between true positivity and biologic false positivity for HCV antibody is desired, and if sample is repeatedly reactive in the initial test, test with another HCV antibody assay. In certain situations,§ follow up with HCV RNA testing and appropriate counseling.

Where are the Results Posted?



Hep B & Hep C results are posted in Clarity & Ascend Lab Check

In **Clarity** > Patient Chart View > Lab Results > **Liver Studies**

HepB SAb - Quant	None	01/05/2021	158.0
Hep B Core Ab, Total	None	03/06/2020	Negative
Hep B Surface Ag	None	01/05/2021	Negative
Hep C Ab Screen	None	01/05/2021	Non-Reacti

Also, in **RTC "Pre-Treatment"** screen

Hep B Surface Ag Status	01/05/2021	03/06/2020	10/15/2019	04/19/2019
	Negative	Negative	Negative	Negative
Hep C Ab Status	03/20/2019			
	Non-Reactive			

In **Ascend Lab Check** > Patients > Results > **Hepatitis**

Hepatitis	
Hep B Surface Ag	Negative
Hep B Surface Ab Quant	158
Hep C Ab Screen	Non-Reactive

Nursing Implications



What matters most when reviewing Hepatitis B & C results – what do you want to focus on?

1. Hep B Surface Ag = negative

2. Hep C Ab screen = negative

All good!



What if Hep B Surface Ag is +?



Think Sero-conversion!

For Hep B (see **Policy IC-H6003** page 5)

1. **Determine** if the labs were drawn during the vaccination series. ***
2. **Notify** Infection Prevention Dept., CMO, & patient's Nephrologist.
3. **Isolate** patient & initiate contact precautions
4. If possible, dialyze patient in a private room or **dedicate** a dialysis station at the end of the row - at least 6 feet away from next station.

What if Hep B Surface Ag is +?



Continued...

For Hep B (see **Policy IC-H6003** page 5)

5. **Dedicate** all equipment to that one patient (Equipment can be disinfected and reassigned after the patient has been cleared).
6. Staff assigned should be **immune** to Hep B (has antibodies) – check K-Health records.
7. Staff **cannot “concurrently”** provide care to non-immune Hep B patients & the isolated patient until the treatment is done.

What if Hep B Surface Ag is +?



Continued...

For Hep B (see **Policy IC-H6003** page 5)

7. **Test** patient for **HBV DNA PCR and HBsAg** initially

8. Then **test** HBsAg every week until result is negative.

9. Once **PCR is negative**, above precautions can be discontinued.

10. **Notify** Medical Director if **HBsAg** results continue to be positive for four consecutive weeks.

What if Hep C Ab Screen is +?

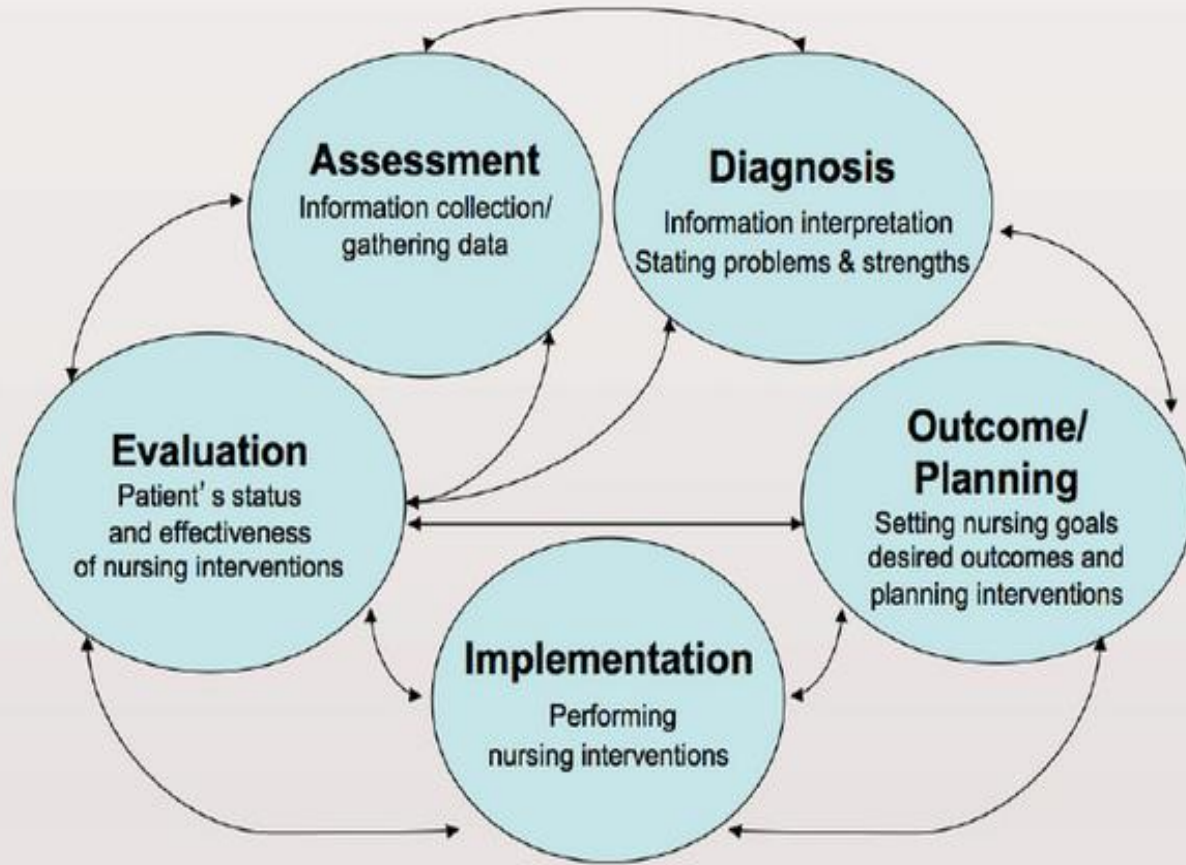


Policy # IC-H6040

Hepatitis C Sero-conversion Protocol

- Notify Infection Control Department at 8714, CMO, Medical Director and patient's nephrologist.
- Redraw the Hepatitis C Ab and Hep C RNA by PCR.
- Review the Hepatitis C status of other patients in the unit on the same shift and on the same machine. Draw Hepatitis C serology on identified patients that are at potential risk.
- Review the patient's history for risk factors that might contribute to HCV conversion i.e. blood transfusion, drug use, recent hospitalization.
- NKC Infection Control staff will conduct audits of infection control practices, machine cleanliness and medication handling and storage. NKC Infection control staff will also review and reinforce infection control practices with unit staff.

Remember The Nursing Process!



The steps of the nursing process are interrelated, forming a continuous circle of thought and action that is both dynamic and cyclic (Doenges & Moorhouse, 2008 a+b)

* Remember, it is more than just about results!



- Always check patient's Hep B & Hep C status – they are readily available & visible in **RTC** > **Pre-Treatment screen**
- Hep B Ag positive patients need to be isolated – chronic positive are dialyzed at SeaTac and Burien
- Notify Infection Prevention Manager, CMO, and patient's Nephrologist for Hep B Surface Ag & Hep C Ab screen positive results
- Always take necessary precautions to avoid any exposure to blood borne pathogens – follow Infection Prevention procedures

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Questions?



Questions are the path to learning