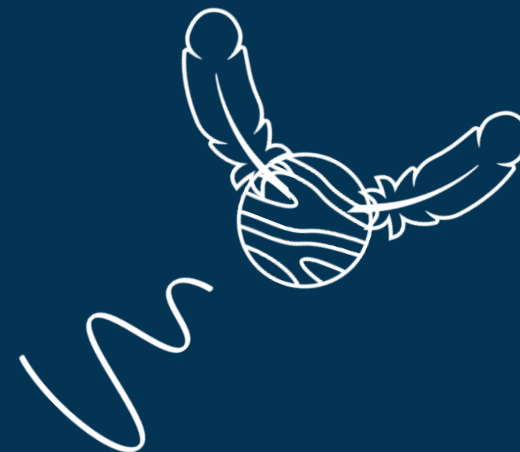


A Quidditch Match – WCLN versus Hepatitis

Recommended Strategies for Defeating Hepatitis

WSLH Regional Meetings: 9/13/23, 9/14/23, 9/19/23

Presenters: Caroline Mohr, Hepatitis C Surveillance Specialist
Stephanie Borchardt, Hepatitis B Coordinator



The Principles of Quidditch

Know your Opponent

Know the Rules and
Guidelines

Work as a
Team—Get the
Snitch!

Agenda

1. Chasers: Hepatitis A
2. Beaters: Hepatitis B
3. Seekers: Hepatitis C
4. The Score so far: Viral Hepatitis Lab Survey and CDC Supplemental Grant
5. The Golden Snitch: Viral Hepatitis Elimination
6. Questions and Answers

Hepatitis A

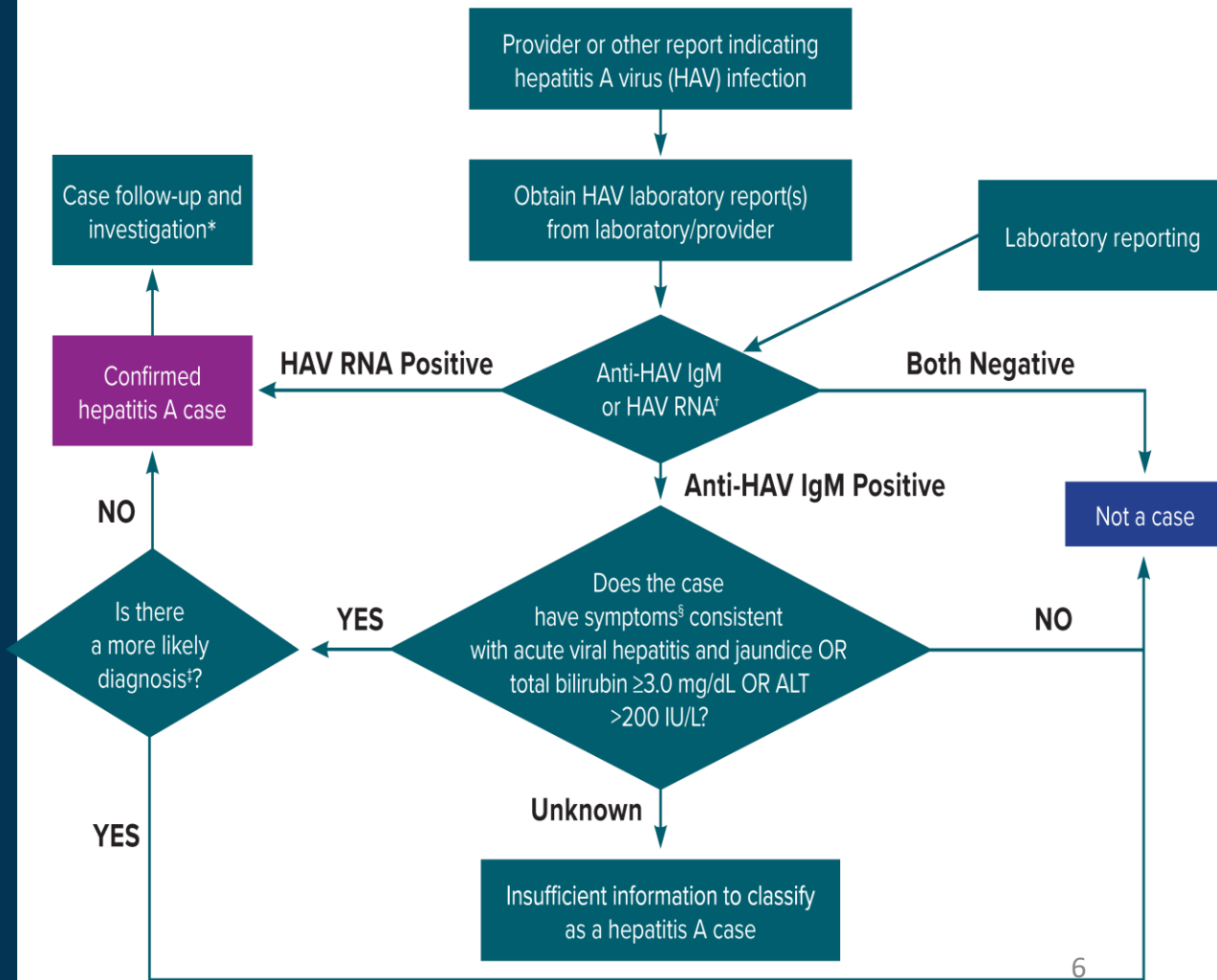
Caroline Mohr



Viral Hepatitis

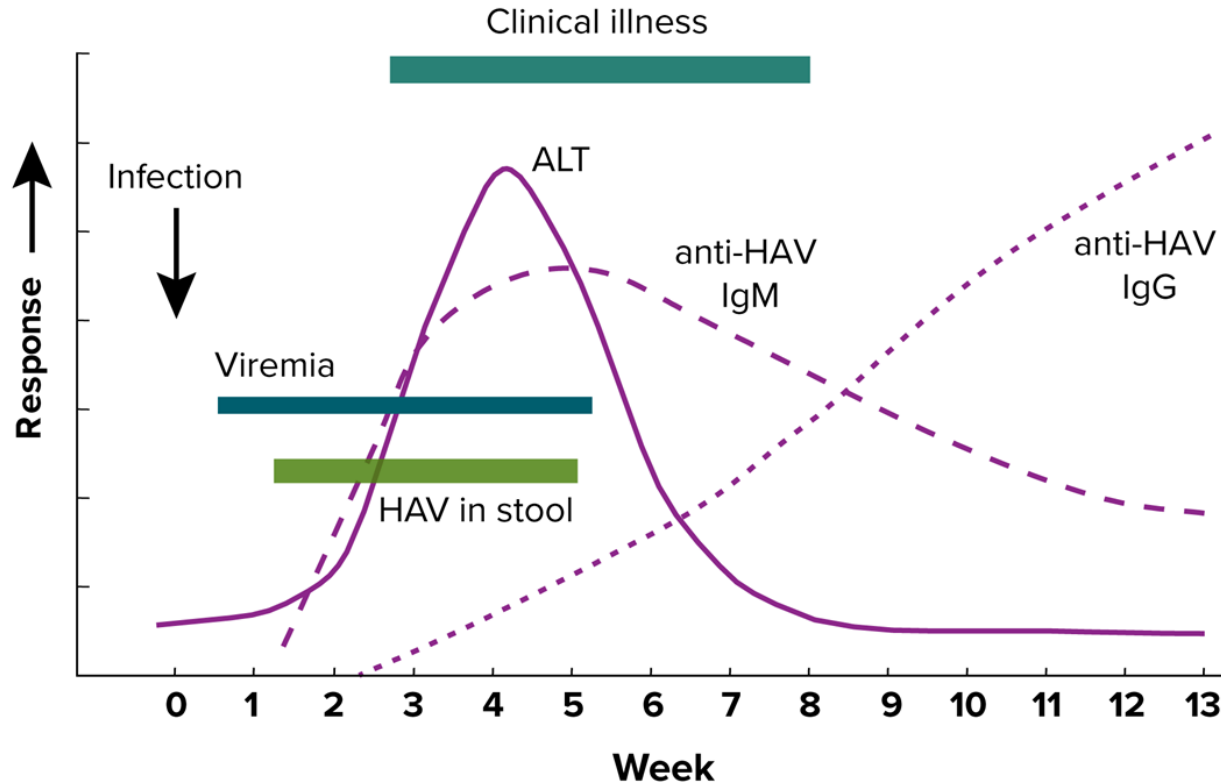
	Hepatitis A Virus (HAV)	Hepatitis B Virus (HBV)	Hepatitis C Virus (HCV)	Hepatitis D Virus (HDV)	Hepatitis E Virus (HEV)
Viral Genome	RNA	DNA	RNA	RNA	RNA
Transmission	Fecal-Oral	Blood and bodily fluids	Blood	Blood and bodily fluids	Fecal-Oral
Incubation	15-50 days	60-150 days	14-182 days	Requires HBV for replication	14-70 days
Testing	Total anti-HAV reflex to IgM anti-HAV	HBsAg Anti-HBs Anti-HBc	Anti-HCV reflex to RNA	Anti-HDV total HDV RNA	Anti-HEV total HEV RNA
Possible Chronic Infection	No	Yes	Yes	Yes	Yes
Vaccine	Yes	Yes	No	No	Yes (in China only)
Treatment	Supportive	No cure: regular monitoring and antiviral drugs	Cure with DAAs (8-12 weeks)	In development	Supportive

HAV Screening



People should only be tested for hepatitis A if they have symptoms and think they might have been infected.

Typical Serologic Course of HAV



Interpretation of HAV Laboratory Results

Total anti-HAV	Anti-HAV IgM	Interpretation*
Positive	Positive	Current infection, recent infection, or recent vaccination
Positive	Not done	Previous infection or current infection; cannot differentiate recent from remote infection or prior vaccination
Positive	Negative	Previous infection or vaccination
Negative	Negative	Not infected (i.e. susceptible)
Not done or negative	Positive	Current infection or false-positivity/cross-reactivity

*Ingestion of high levels of biotin can significantly interfere with certain commonly used biotinylated immunoassays, such as those used to detect anti-HAV, and cause false-positive or false-negative laboratory test results. Currently, the US Food and Drug Administration (FDA) is investigating thresholds associated with false-positive and false-negative tests. This section will be updated as more information becomes available.

Hepatitis B

Stephanie Borchardt



HBV Universal Screening Recommendations

Update: All adults should be tested at least once for hepatitis B. Have you been tested?

- Hepatitis B infection can cause liver cancer and early death
- Most people with the virus don't know they have it
- Treatment is available — **schedule your screening today**



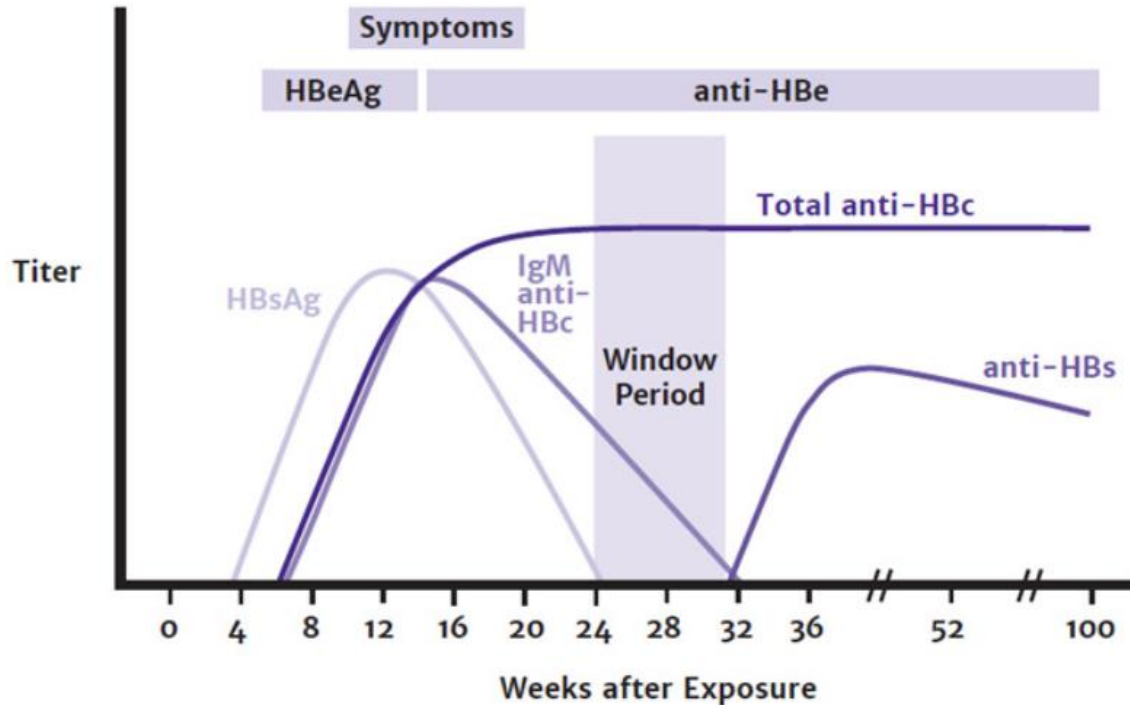
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MARCH 10, 2023

MMWR

Anyone who requests HBV testing should be tested.

Typical Serologic Course of HBV



Screening and Testing for Hepatitis B Virus Infection: CDC Recommendations — United States, 2023

Recommendations and Reports / March 10, 2023 / 72(1);1–25

Erin E. Conners, PhD¹; Lakshmi Panagiotakopoulos, MD¹; Megan G. Hofmeister, MD¹; Philip R. Spradling, MD¹; Liesl M. Hagan, MPH-Rogers-Brown, PhD¹; Carolyn Wester, MD¹; Noele P. Nelson, MD, PhD¹ ([VIEW AUTHOR AFFILIATIONS](#))

[View suggested citation](#)

Summary

Chronic hepatitis B virus (HBV) infection can lead to substantial morbidity and mortality. Although treatment is not considered curative, antiviral treatment, monitoring, and liver cancer surveillance can reduce morbidity and mortality. Effective vaccines to prevent hepatitis B are available. This report updates and expands CDC's previously published Recommendations for Identification and Public Health Management of Persons with Chronic Hepatitis B Virus Infection (MMWR Recomm Rep 2008;57[No. RR-8]) regarding screening for HBV infection in the United States. New recommendations include hepatitis B screening using three laboratory tests at least once during a lifetime for adults aged ≥ 18 years. The report also expands risk-based testing recommendations to include the following populations, activities, exposures, or conditions associated with increased risk for HBV infection: persons incarcerated or formerly incarcerated in a jail, prison, or other detention setting; persons with a history of sexually transmitted infections or multiple sex partners; and persons with a history of hepatitis C virus infection. In addition, to provide increased access to testing, anyone who requests HBV testing should receive it, regardless of disclosure of risk, because many persons might be reluctant to disclose stigmatizing risks.

HBV Triple Panel

Population	Recommendation	
	Screening and Testing	Vaccination
Adults with no known risk factors for hepatitis B	<ul style="list-style-type: none">If never previously screened, test for HBsAg, anti-HBs, and total anti-HBc (triple panel)	<ul style="list-style-type: none">Vaccinate adults aged 18 – 59 years

Are providers mostly ordering single HBsAg tests? Reference labs only running single tests? Advocate for the **triple panel!**

Interpretation of HBV Laboratory Results

Test and Result	Interpretation	Action
HBsAg—Positive Total anti-HBc — Positive IgM anti-HBc — Positive Anti-HBs — Negative	Acute infection	Link to hepatitis B care
HBsAg — Positive Total anti-HBc — Positive IgM anti-HBc — Negative ¹ Anti-HBs — Negative	Chronic Infection	Link to hepatitis B care
HBsAg — Negative Total anti-HBc — Positive Anti-HBs — Positive	Resolved Infection	Counsel about HBV infection reactivation risk
HBsAg — Negative Total anti-HBc — Negative Anti-HBs — Positive ²	Immune from receipt of prior vaccination (if documented complete series)	If no documentation of full vaccination, then complete vaccine series per ACIP recommendations.
HBsAg — Negative Total anti-HBc — Positive Anti-HBs — Negative	<i>Only core antibody is positive. See possible interpretations and corresponding actions:</i>	
	Resolved infection where anti-HBs levels have waned	Counsel about HBV infection reactivation risk
	Occult Infection	Link to hepatitis B care
	Passive transfer of anti-HBc to an infant born to an HBsAg-positive gestational parent	No action
	A false positive, thus patient is susceptible	Offer HepB vaccine per Advisory Committee on Immunization Practices (ACIP)
	A mutant HBsAg strain that is not detectable by laboratory assay	Link to hepatitis B care
HBsAg — Negative Total anti-HBc — Negative Anti-HBs — Negative ³	Susceptible, never infected (if no documentation of HepB vaccine series completion)	Offer HepB vaccine per ACIP recommendations

CSTE: Updated Position Statement

- Publication coming soon!
- Aligns Hep B case classification more closely with current Hep C case classifications
- Expands criteria for Acute classification
- Surface antigen, IgM, and HBV DNA all critical tests

Hepatitis C

Caroline Mohr



HCV Universal Screening Recommendations



CDC and ACOG recommend testing all patients for hepatitis C during every pregnancy.



CDC recommends testing all adult patients for hepatitis C.

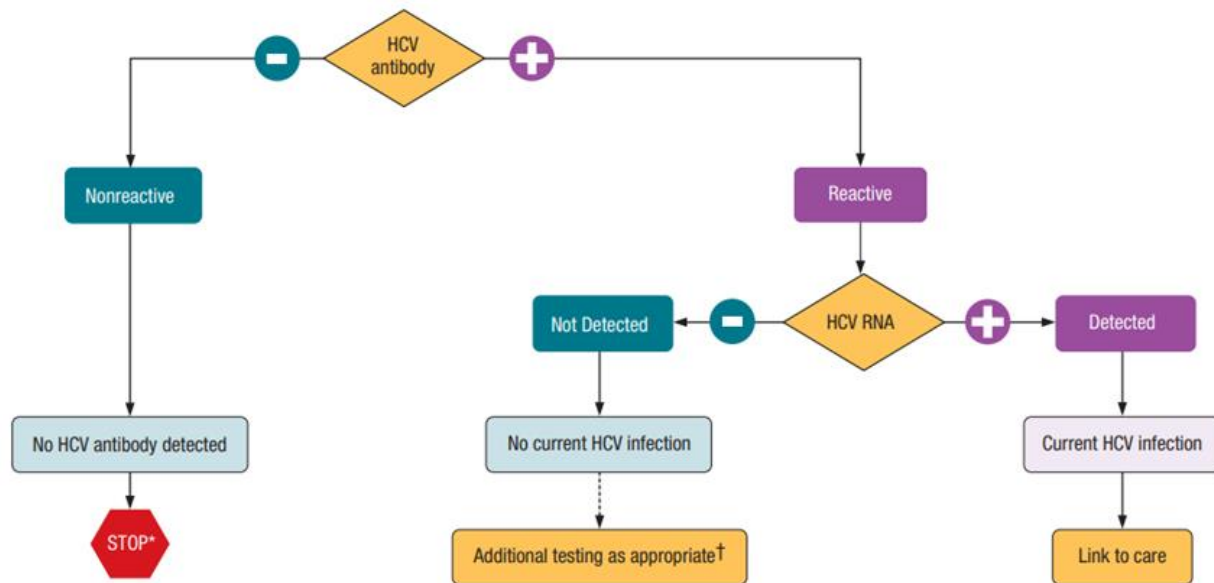


CDC Hepatitis C Testing Algorithm

Recommended Testing Sequence for Identifying Current Hepatitis C Virus (HCV) Infection



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

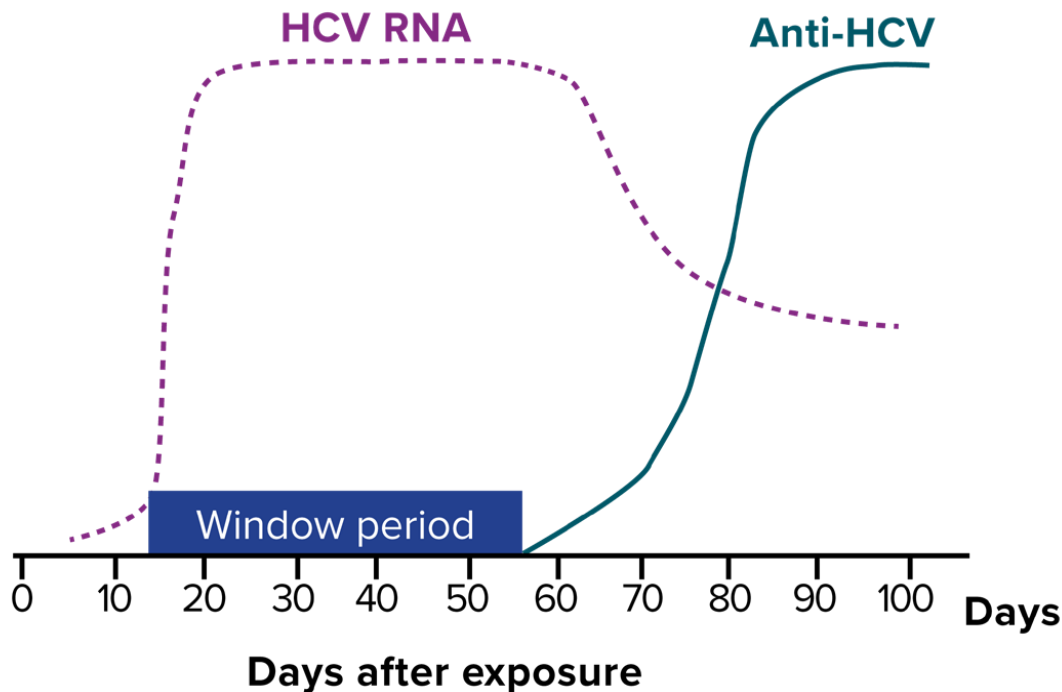


* For persons who might have been exposed to HCV within the past 6 months, testing for HCV RNA or follow-up testing for HCV antibody is recommended. For persons who are immunocompromised, testing for HCV RNA can be considered.

† To differentiate past, resolved HCV infection from biologic false positivity for HCV antibody, testing with another HCV antibody assay can be considered. Repeat HCV RNA testing if the person tested is suspected to have had HCV exposure within the past 6 months or has clinical evidence of HCV disease, or if there is concern regarding the handling or storage of the test specimen.

Source: CDC. Testing for HCV infection: An update of guidance for clinicians and laboratorians. *MMWR* 2013;62(18).

Typical Serologic Course of HCV



Best Practices for Testing and Reporting Hep C

**HCV Antibody with reflex to
NAT/PCR for everyone 18 and older,
more often for pregnant persons
and people with exposure factors**

See WI statute 252

Best Practices for Testing and Reporting Hep C

**Required to report: positive
antibody, positive and negative
NAT/PCR**

See WI statute 252

Other Important Criteria

AST, ALT, and bilirubin

Jaundice

Pregnancy status:
for perinatal follow-
up

The Score so far: Hepatitis Lab Survey

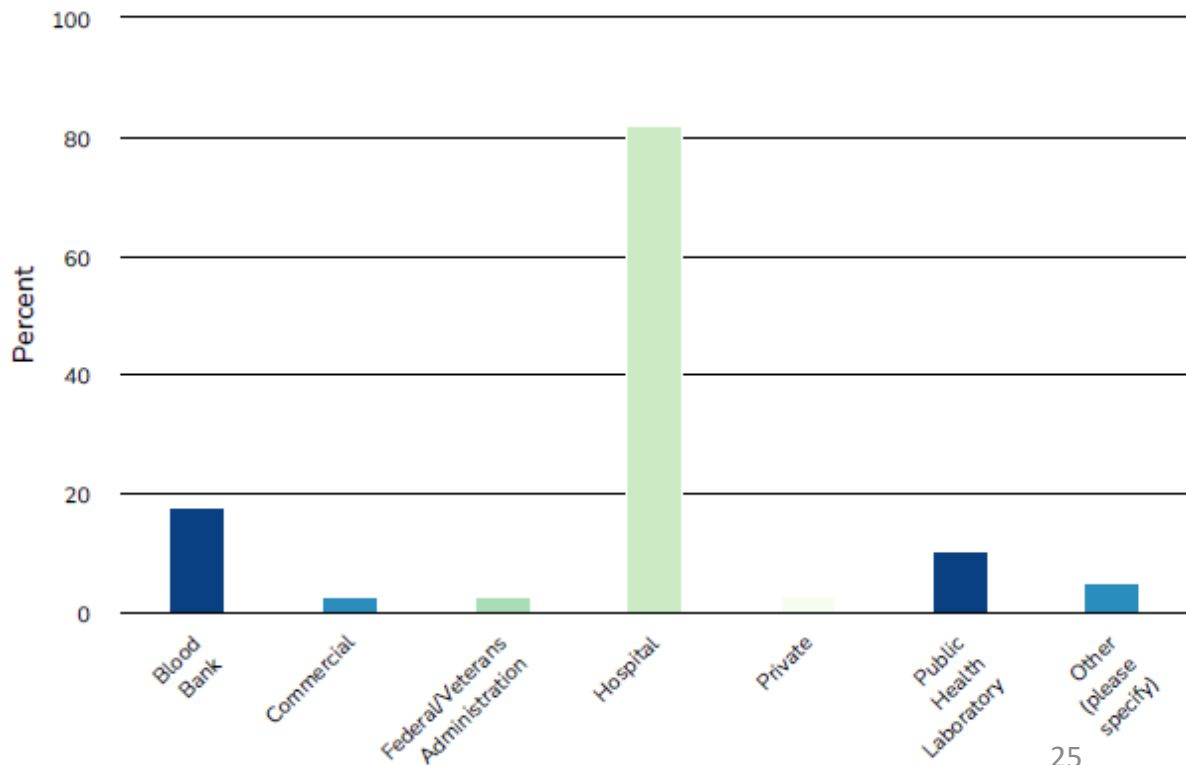


Viral Hepatitis Lab Survey

39 responses

Majority of respondents were from hospital systems (82.1%)

5% report results to public health via paper or e-fax

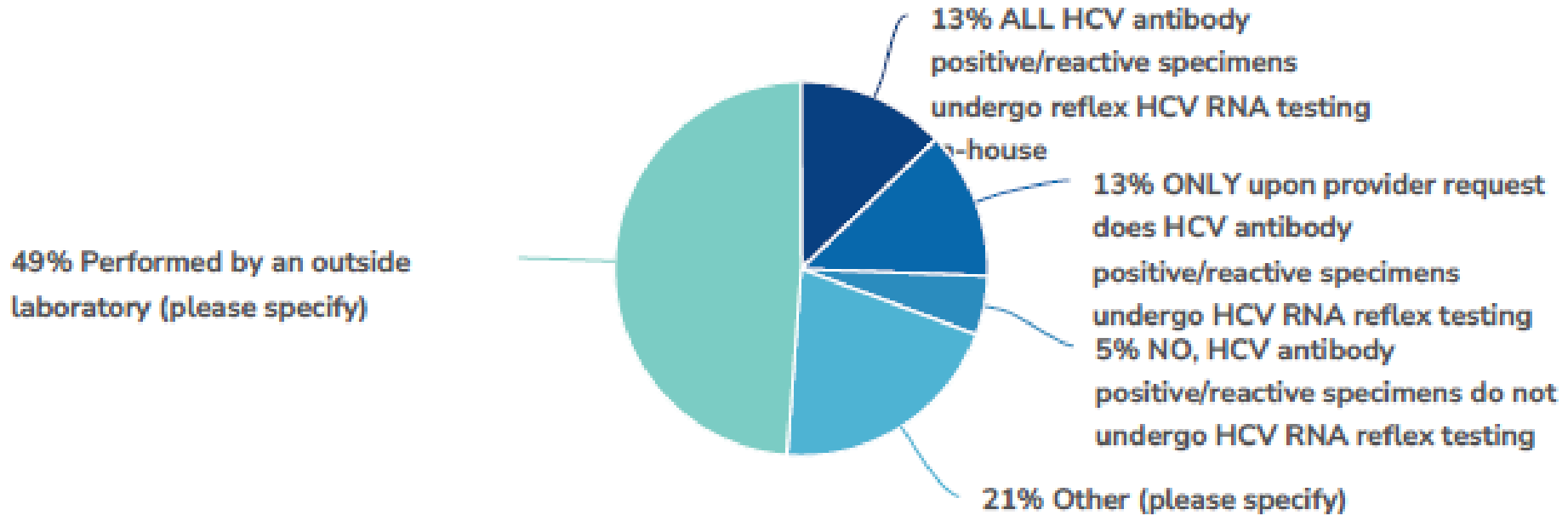


Viral Hepatitis Lab Survey

**Reporting questions?
WEDSS questions? We
want to support you!**

**DHS WEDSS
DHSWEDSS@dhs.wisconsin.gov**

When does your Laboratory Perform Reflex Testing on a Positive HCV Antibody Test?



Reference Labs Continue to be Highly Utilized

Hepatitis A Virus
tests

Over 69% of labs sent to reference facility

Hepatitis B Virus
tests

Over 54% of labs sent to reference facility

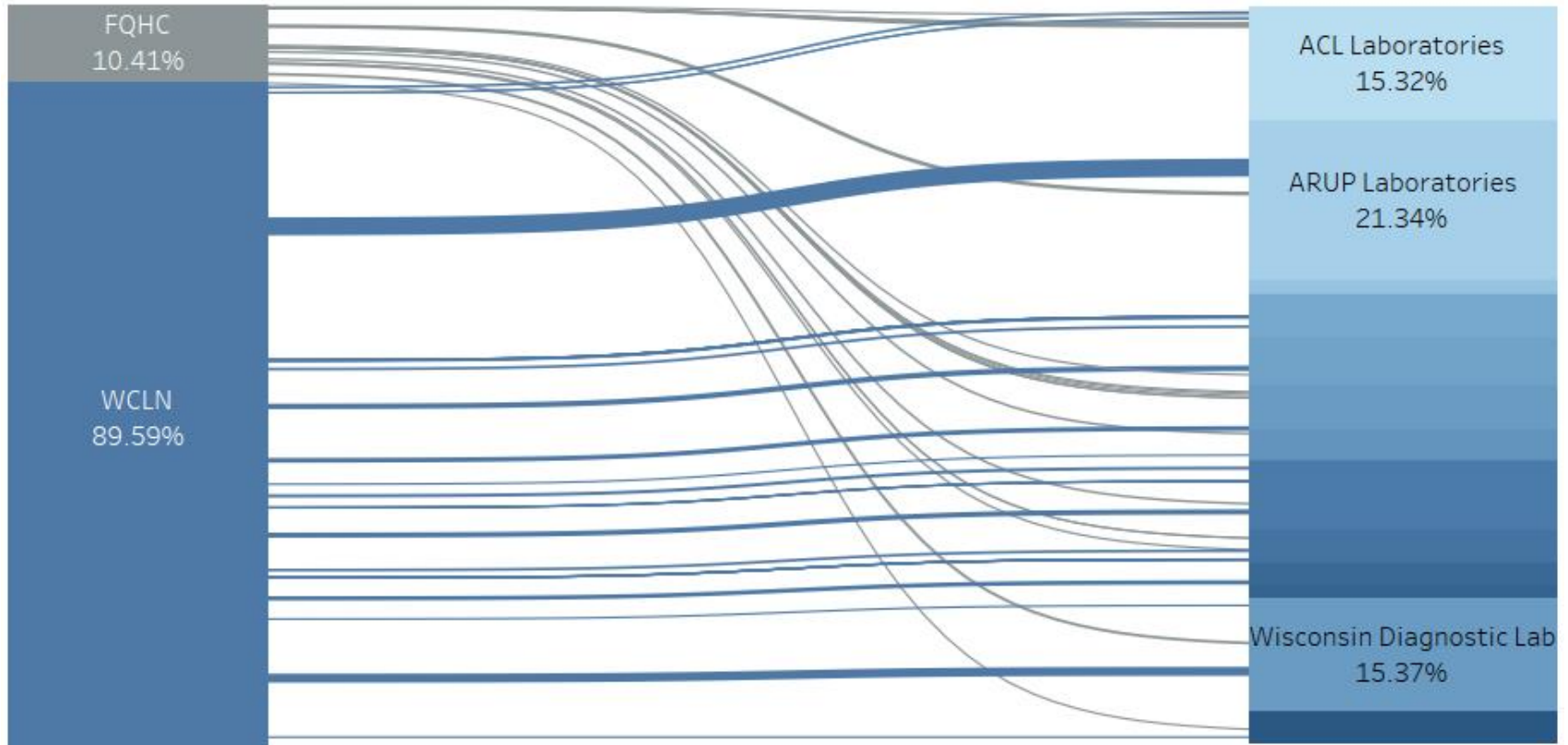
Hepatitis C Virus
tests

Over 54% of labs sent to reference facility

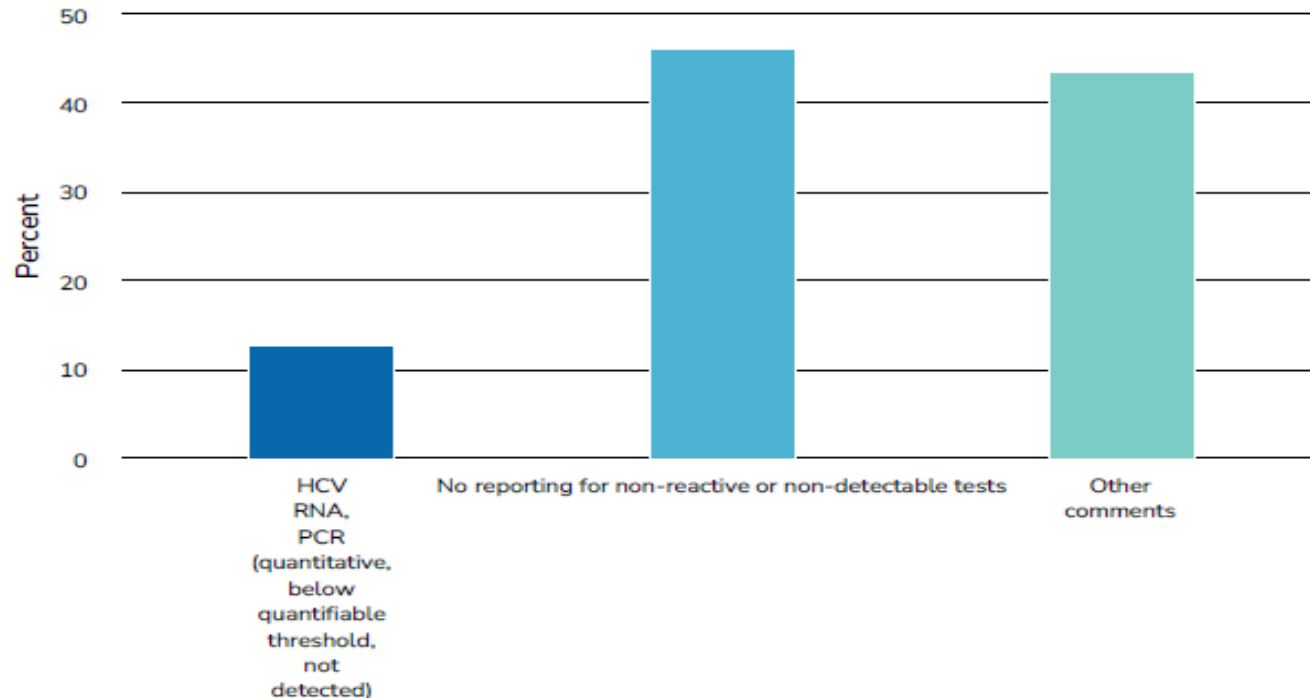
HIV

Over 80% send to reference facility

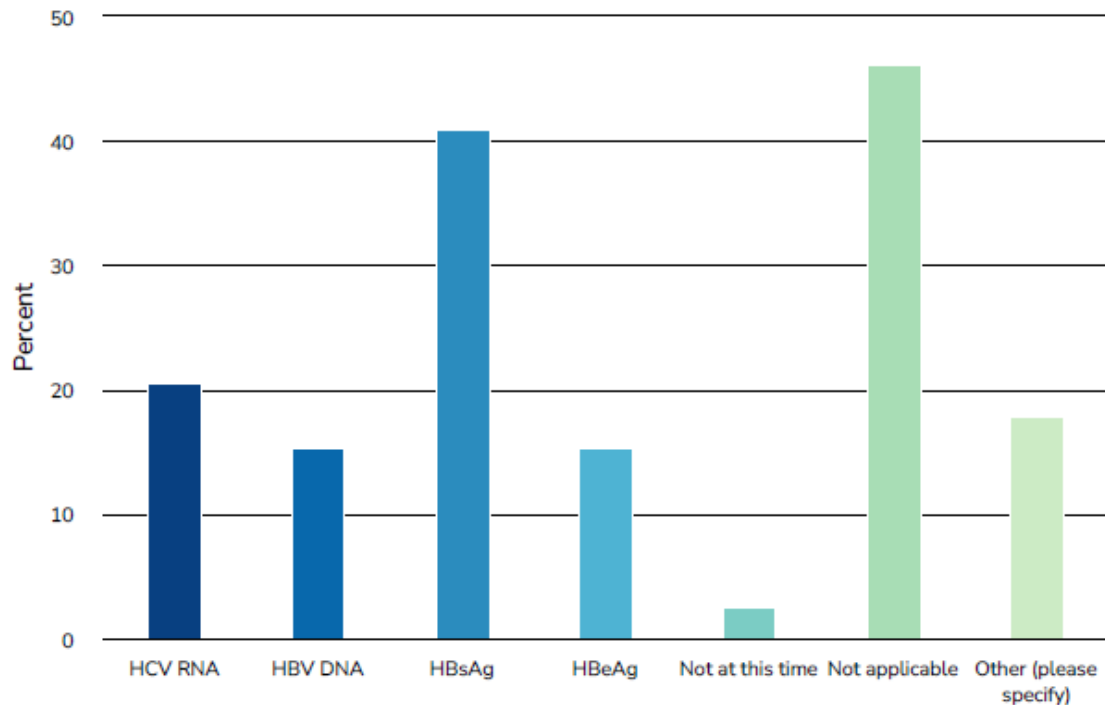
HCV Lab Monitoring Dashboard



Labs Reporting Non-detectable HCV Results to DHS or Public Health



If Requested, Could your Laboratory Report both Positive and Negative Lab Results?



26% of labs don't anticipate barriers to reporting negative hepatitis tests.

Viral Hepatitis Testing Summary

	Hepatitis A Virus (HAV)	Hepatitis B Virus (HBV)	Hepatitis C Virus (HCV)	Hepatitis D Virus (HDV)	Hepatitis E Virus (HEV)
Viral Genome	RNA	DNA	RNA	RNA	RNA
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Incubation	15-50 days	60-150 days	14-182 days	Requires HBV for replication	14-70 days
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Possible Chronic Infection	No	Yes	Yes	Yes	Yes
Vaccine	Yes	Yes	No	No	Yes (in China only)
Treatment	Supportive	No cure: regular monitoring and antiviral drugs	Cure with DAAs (8-12 weeks)	In development	Supportive



The Golden Snitch: Viral Hepatitis Elimination

Hepatitis Elimination

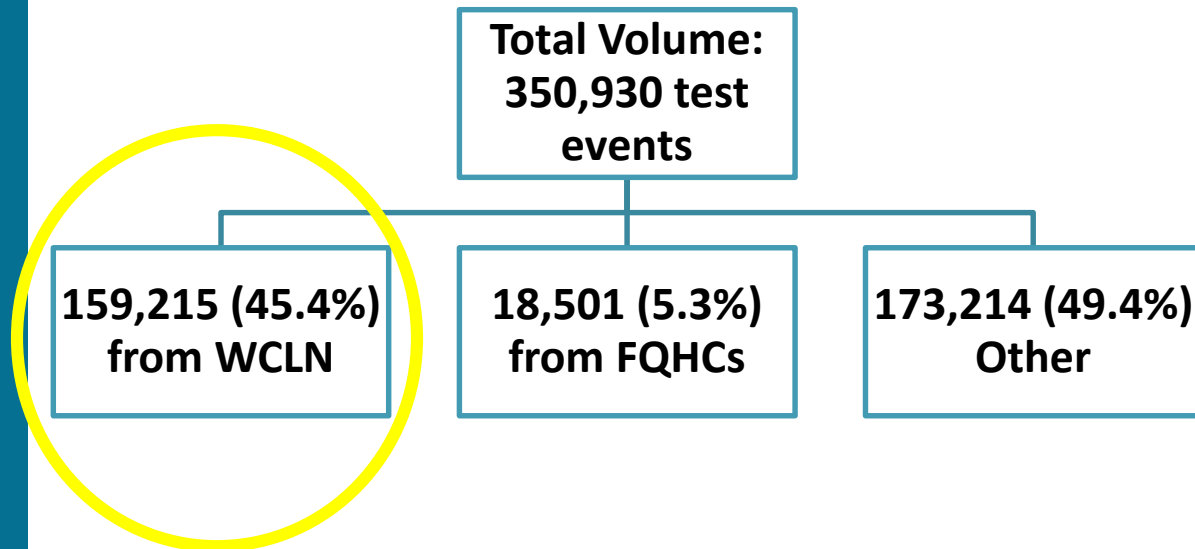
Nationwide hepatitis elimination goals by 2030 are:

- To prevent new hepatitis infections and deaths.
- To increase the number of people who know their hepatitis status.
- To ensure that every person living with hepatitis has health care and treatment, free from stigma and discrimination.

How Does WCLN Support Elimination?

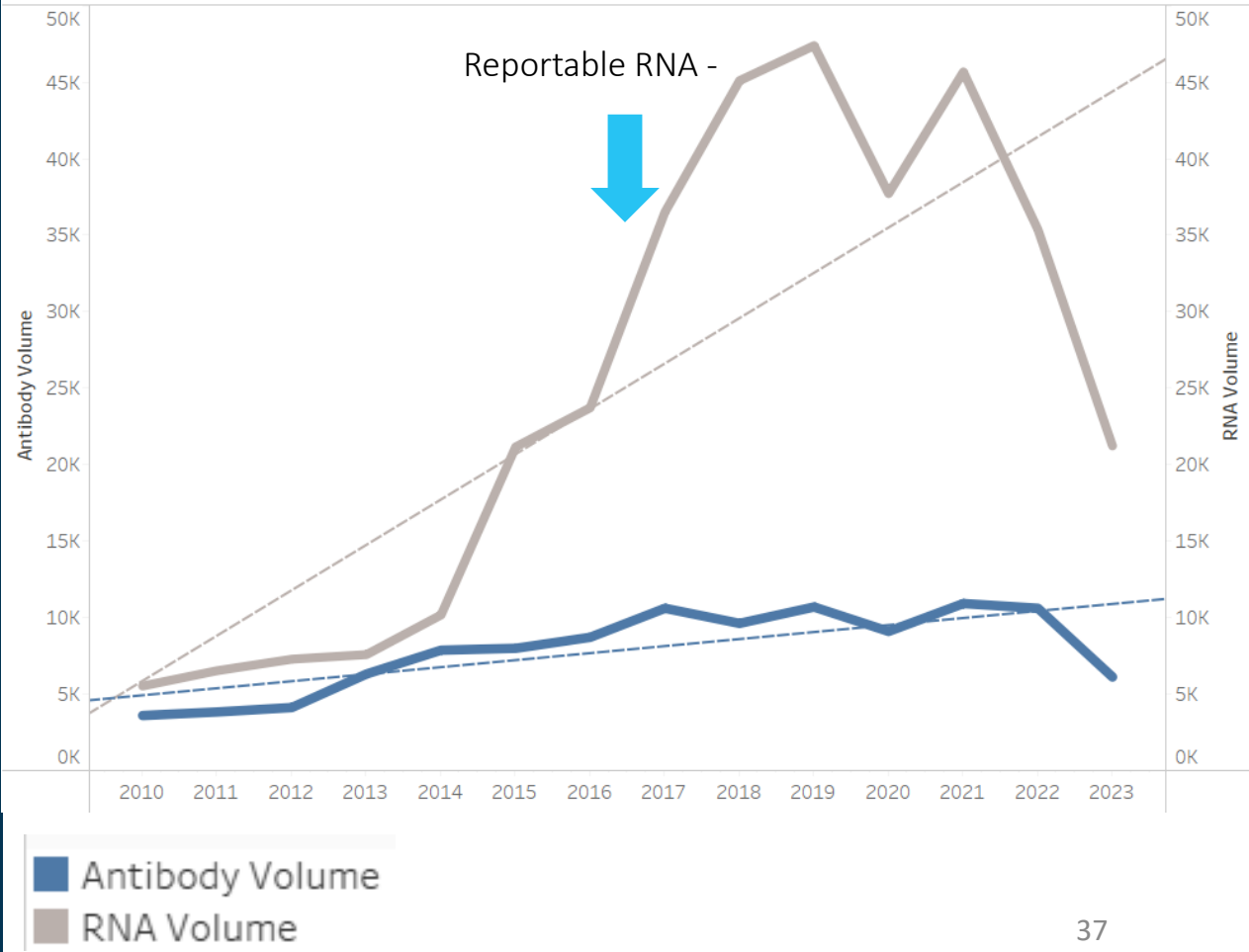
- **Continue to support providers and reference labs in ordering and completing recommended test sets**
- **Coordinate more complete and seamless reporting of all viral hepatitis test results from your and other labs**

RNA/Geno Volume (2010-2023)



HCV RNA and Ab Reported Results

RNA and Ab Test Volume, 2010 - 2023



How Can WCLN Support Elimination Further?

- **Attend elimination community webinars**
- **Join elimination planning work groups**
- **Provide feedback on draft elimination plan**

HCV Elimination Goals and Workgroups

Email with questions, suggestions, comments about HCV elimination planning in Wisconsin and what you would like to see included in the statewide plan.

DHSHepatitisEliminationPlan@dhs.wisconsin.gov

Workgroups will begin soon!

WSLH/DHS Grant Partnership

Integrating Genomic and Epidemiologic Surveillance

Develop system for detecting HCV transmission clusters

Build capacity to integrate genomic data into HCV surveillance

Assess effectiveness of genomic surveillance

Supplemental Grant: How Can You Help?

WSLH is requesting HCV samples from
07/01/2023 – 04/30/2024 to sequence.

Please contact WSLH or Dr. Alana Sterkel if you'd
like to participate and/or have any questions.

Questions?



Resources for Health Professionals

CDC Hepatitis A Guidelines and Recommendations:

<https://www.cdc.gov/mmwr/volumes/69/rr/rr6905a1.htm>

CDC Online Serology Training:

<https://www.cdc.gov/hepatitis/resources/professionals/training/serology/training.htm>

Guidelines for Screening, Management and Pre-Treatment Work-up for HCV within IHS, Tribal and Urban Indian Healthcare Facilities:

https://cdn.indiancountryecho.org/wp-content/uploads/2022/10/HCV_Guidelines.pdf

UCSF National Clinician Consultation Center (HCV):

<https://nccc.ucsf.edu/clinician-consultation/hepatitis-c-management/>

Thank you!

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