

# Hepatitis C: Surveillance, Case Definition, and Investigation

Tuesday, June 15, 2021

11am-12pm

NJ Department of Health-Communicable  
Disease Service



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- Today's webinar is being recorded.
- Webinar link and presenter slides will be posted to the NJDOH-CDS Hepatitis C webpage after the webinar.

**NJ Health**  
New Jersey Department of Health

Improving Health Through Leadership and Innovation

Communicable Disease Service

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Home · Diseases & Health Topics A-Z List · Hepatitis C

## Hepatitis C

**Report within 24 hours(written report) of Diagnosis to the Local Health Department**

Hepatitis C is a liver disease caused by a virus. The virus is spread by contact with an infected person's blood. People at greatest risk are those who share drug needles, have multiple sex partners and didn't use condoms, have been on kidney dialysis, received a blood transfusion or organ transplant before July 1992, and health care workers who have contact with blood. Symptoms may include feeling tired, nausea, fever, diarrhea, lack of appetite, yellow skin or eyes. There is no vaccine so avoiding contact with blood from other people is an important prevention measure. Several drugs are used in the treatment of hepatitis C.

**Disease Reporting**

- Communicable Disease Manual Chapter
- Hepatitis C Report
- Hepatitis C Investigation Letter

**Resources & References**

- Perinatal Hepatitis C Case Definition

[Return to the main viral hepatitis page](#)



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## Continuing Education Credits

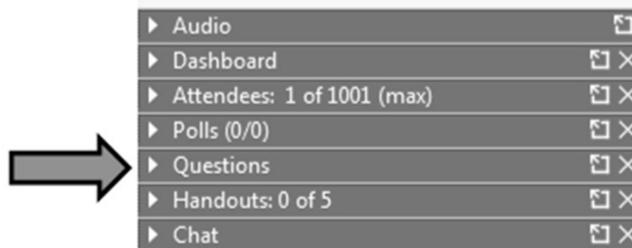
- **Credits/Contact hours offered for this webinar:**
  - 1.0 Public Health and Nursing
  - The New Jersey Department of Health, Communicable Disease Service, is approved as a provider of nursing continuing professional development by New Jersey State Nurses Association (NJSNA), an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation. Provider #P216-6/2021
  
- **Credits provided to those who attend the webinar “live” only.**
  - Must be registered on Go To Webinar and NJLMN and complete evaluation to earn credits.
  - NOTE: Those viewing the recorded webinar are not eligible to receive continuing education credits.
  - Posted webinars are available for 12 months after original air date.



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## Have a Question During the Presentation?

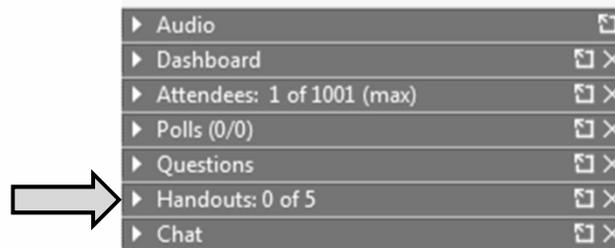
- **All attendee lines are muted. Please use the “Question” box to ask a question.**
  - Questions will be answered at the end of the webinar, time permitting.



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## Presenter Slides

- Slides may be accessed in the “Handouts” box during “live” webinars.
- Slides will be posted on the NJDOH-CDS Hepatitis C webpage, after the webinar.



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## How Do I Get My Credits?

- **A link to the evaluation will sent to the e-mail address used to register on NJLMN after the webinar.**
  - Check your spam/clutter/junk folders if you do not see it in your inbox within 24 hours after the webinar ends.
- **Those seeking continuing education credits MUST complete the evaluation.**
- **Evaluation link closes seven (7) days after it is sent.**
  - Once evaluation closes, certificated are emailed to the address listed in NJLMN (for Nurses)/attendance verified in NJLMN (for PH and Nurses). Credits are **not** automatically awarded when evaluation is completed.
  - Individuals who do not complete the evaluation will not receive credits. No exceptions.



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# Hepatitis C: Surveillance, Case Definition, and Investigation

Tuesday, June 15, 2021

11am-12pm

**Bernice Carr, MPH, MS, HCV Epidemiologist**

**Maryellen Wiggins, MSN, RN, HCV Nurse Coordinator**



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## Presentation Overview

- Hepatitis C basic facts
- Identification of Hepatitis C infection
- Hepatitis C Epidemiology
- Revised CDS-17 Form
- NJDOH case investigation priorities
- New 2020 Acute & Chronic case definitions
- Case definition for perinatal Hepatitis C
- Classification of cases with scenarios
- Treatment and Linkage to Care
- CDRSS management tips
- Revised Hepatitis C chapter



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## Basic Facts of Hepatitis C (HCV)

The infographic consists of eight interconnected hexagonal cells arranged in a honeycomb pattern. The facts are as follows:

- Causes cirrhosis and cancer of the liver
- Bloodborne virus
- Majority infected are not aware
- Incubation is 14 to 180 days, 45 average
- Transmission by needles, perinatal, organ transplant
- Chronic infection in 70-80% of infected
- Symptoms include nausea, jaundice, malaise
- Effective treatments  
No vaccine

  
New Jersey Department of Health

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## WHO SHOULD GET TESTED FOR HEPATITIS C?

The infographic is divided into three vertical panels, each with a title, an image, and a recommendation:

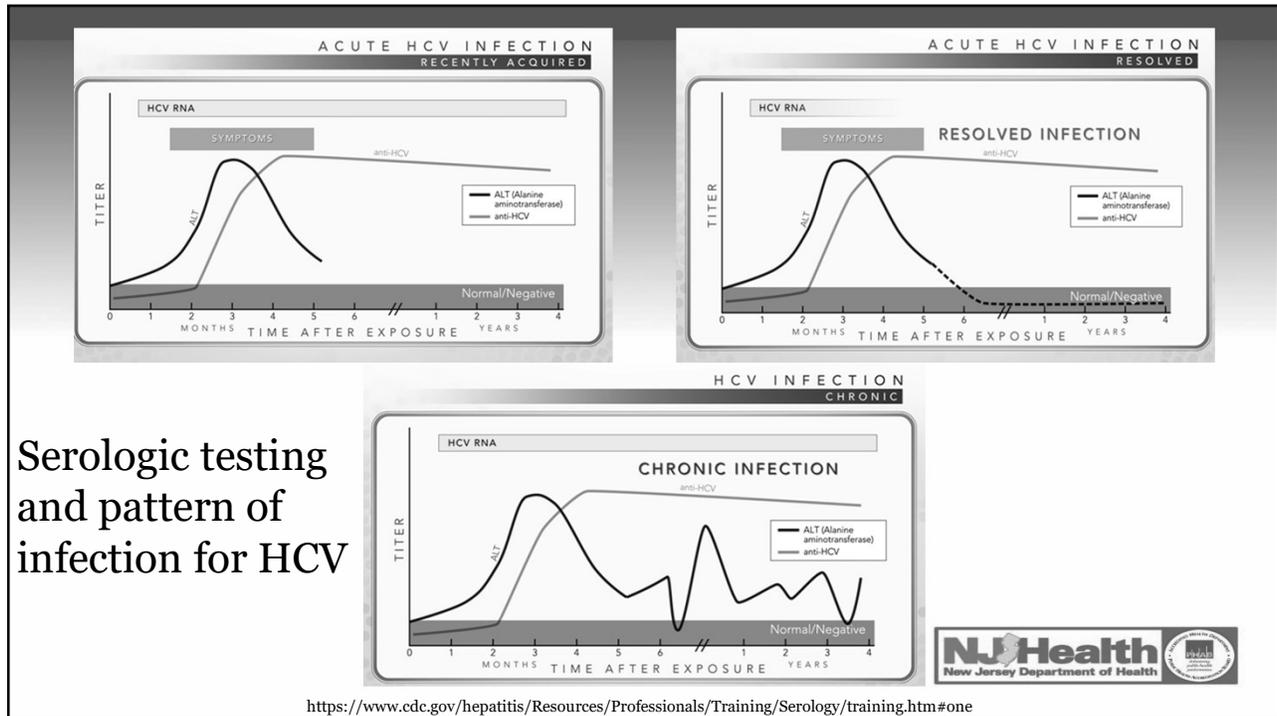
- EVERY ADULT**  
  
At least once
- EVERY PREGNANT WOMAN**  
  
Every pregnancy
- EVERYONE WITH RISK FACTORS**  
  
Regularly

SOURCE: CDC Recommendations for Hepatitis C Screening, MMWR, April 2020

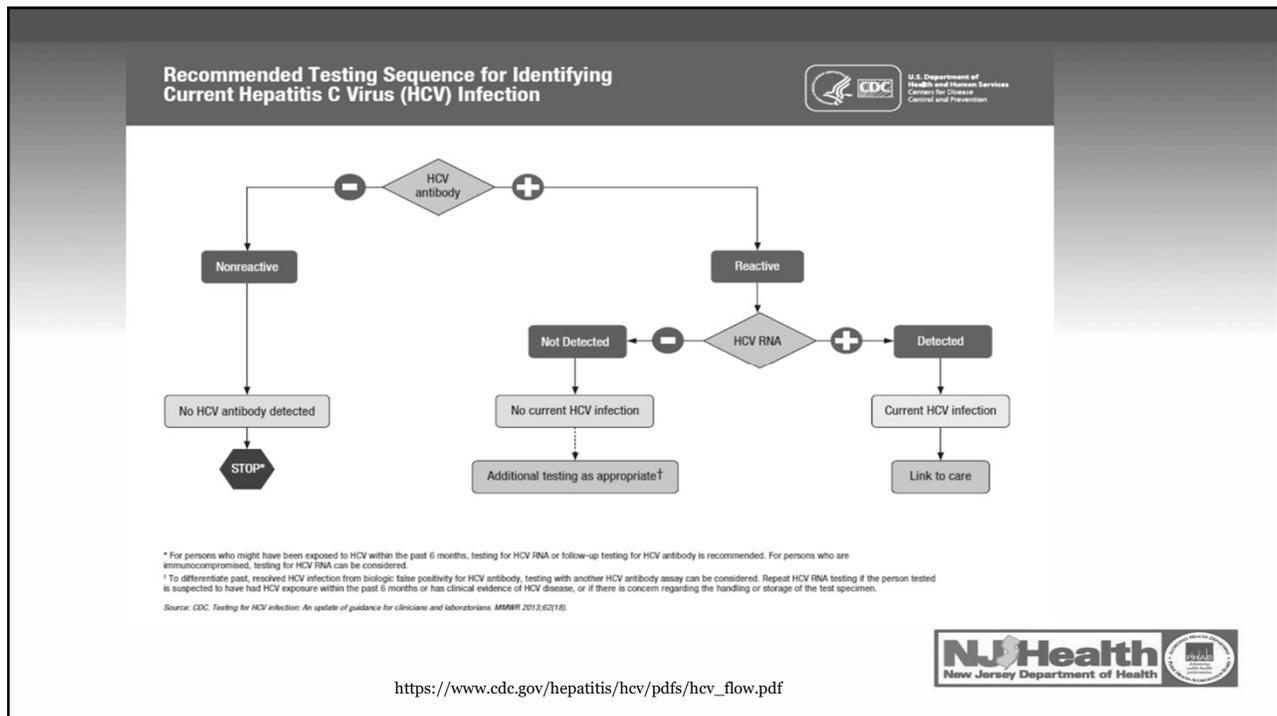
  
New Jersey Department of Health

<https://www.cdc.gov/hepatitis/hcv/vitalsigns/index.html>

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## Communicable Disease Reporting and Surveillance System, CDRSS

- CDRSS is the main tool to capture and report details of communicable diseases in New Jersey
- At least 90% of HCV labs are reported electronically in CDRSS
- HCV Investigators provide updates on HCV reports for residents in their jurisdiction in CDRSS

<https://cdrs.doh.state.nj.us>



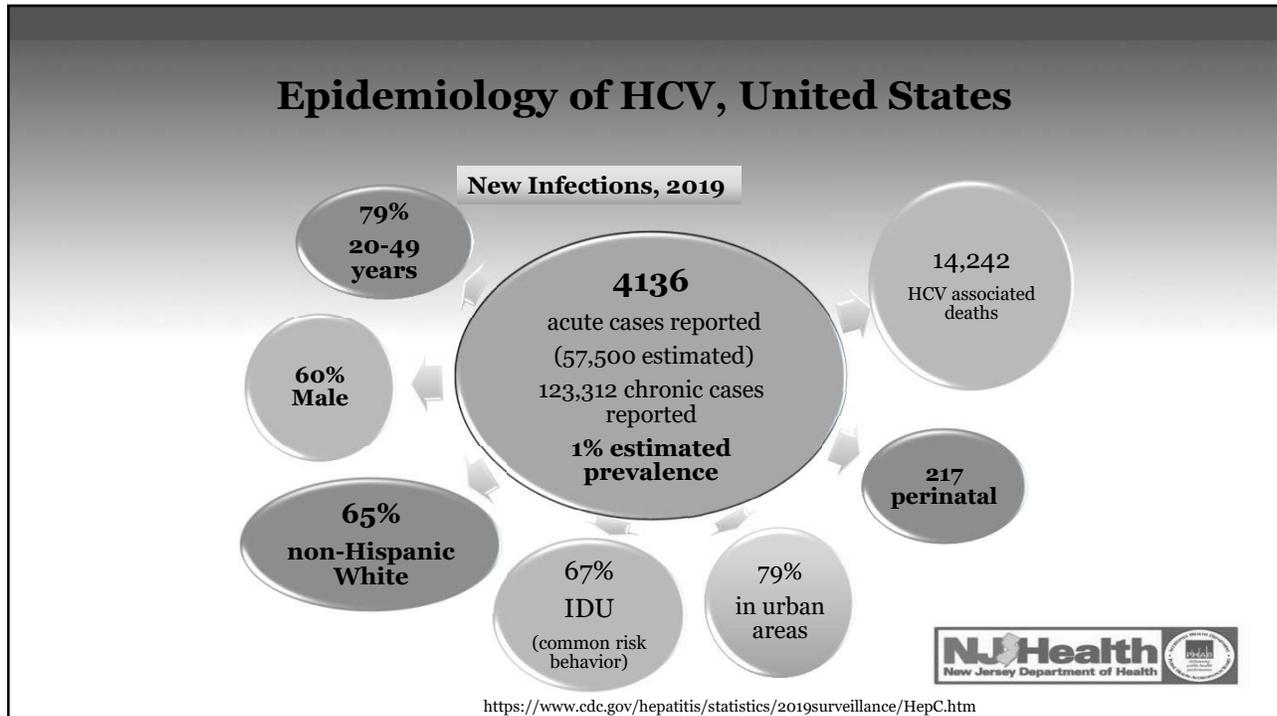
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## Interpretation of HCV Laboratory Test Names

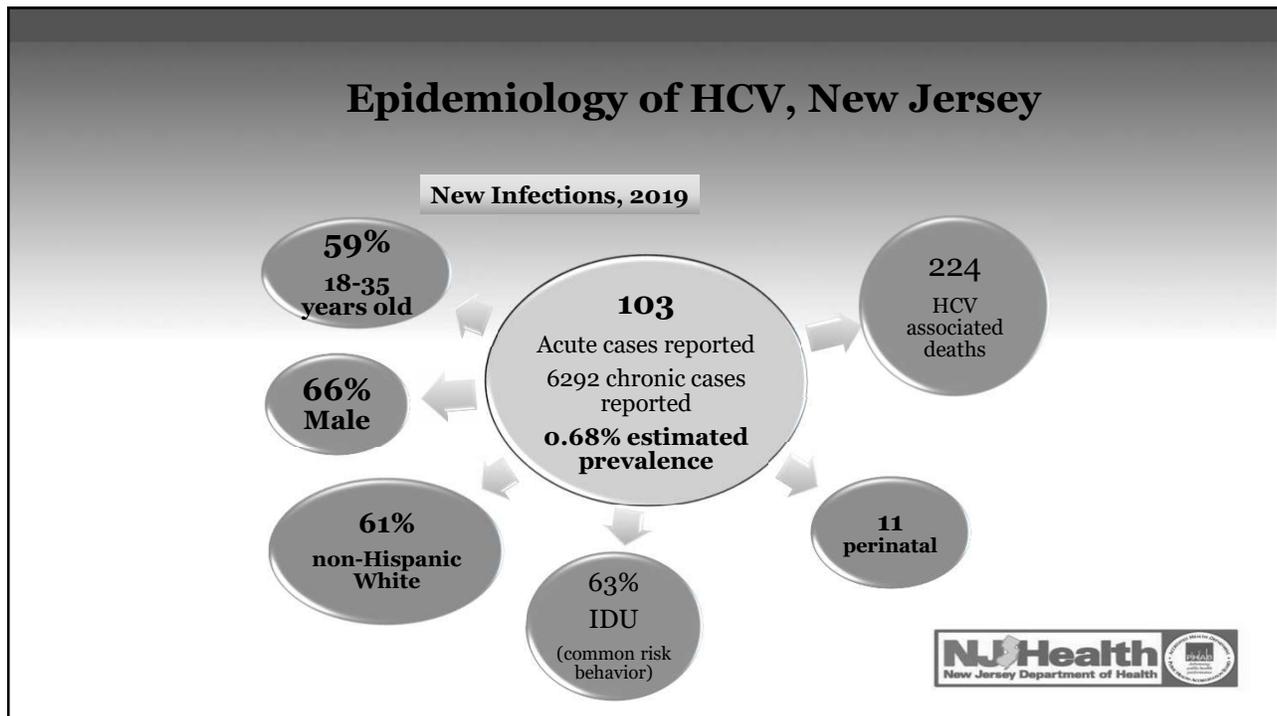
CDRSS Test Name	Test Type
Hepatitis C Virus Antibody (Anti-HCV)	Antibody test
Hepatitis C Virus Antibody Signal to Cut Off Ratio (S/CO)	Antibody test
Hepatitis C Virus Genotype	Nucleic Acid Test (NAT)
Hepatitis C Virus RNA (PCR – Qualitative)	Nucleic Acid Test
Hepatitis C Virus RNA (PCR – Quantitative)	Nucleic Acid Test
Alanine Aminotransferase (ALT) <i>Serum glutamic pyruvic transaminase (SGPT)</i>	Liver function
Alkaline Phosphatase (Alk Phos)	Liver function
Aspartate Aminotransferase (AST) <i>Serum glutamic-oxaloacetic transaminase (SGOT)</i>	Liver function
Bilirubin Total – Bili (total)	Liver function



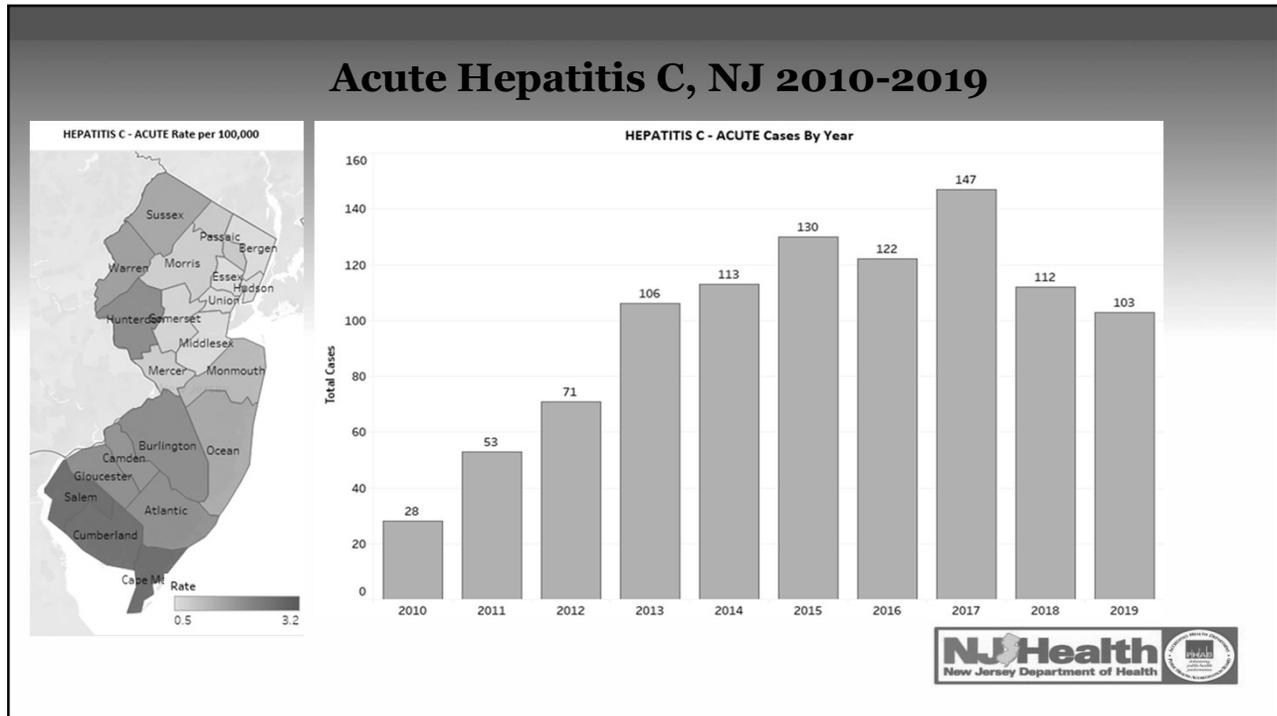
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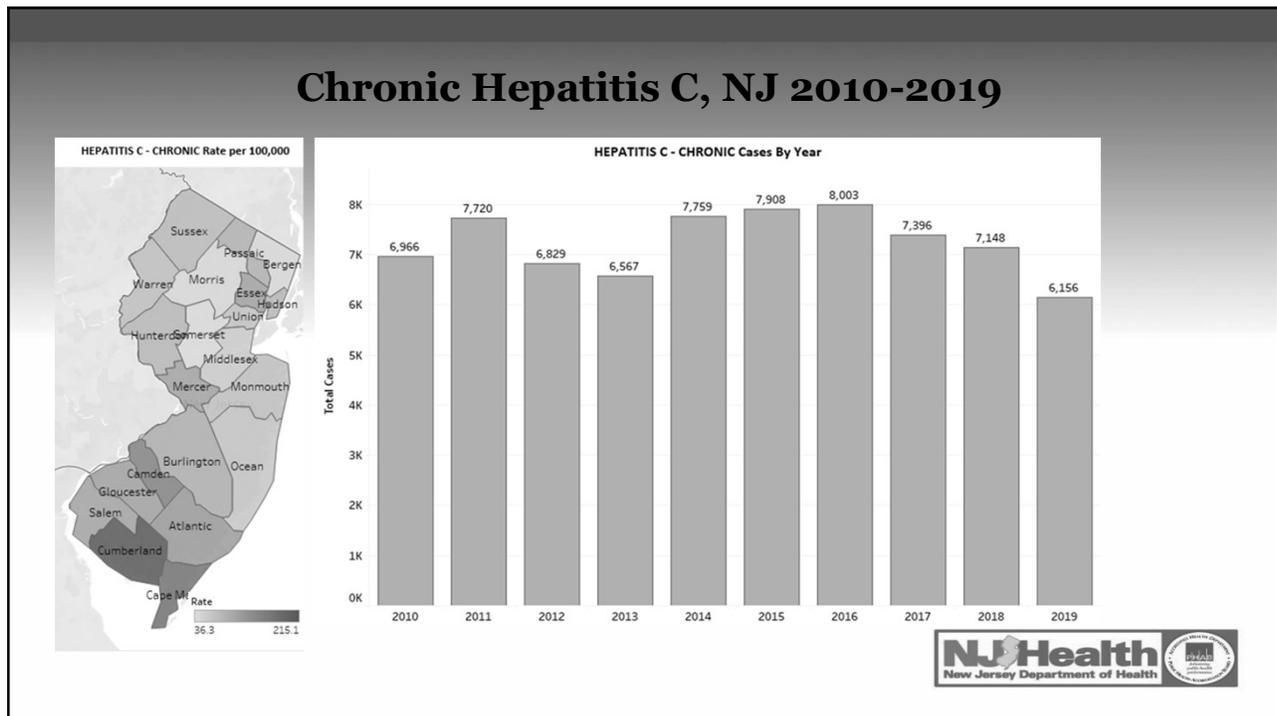
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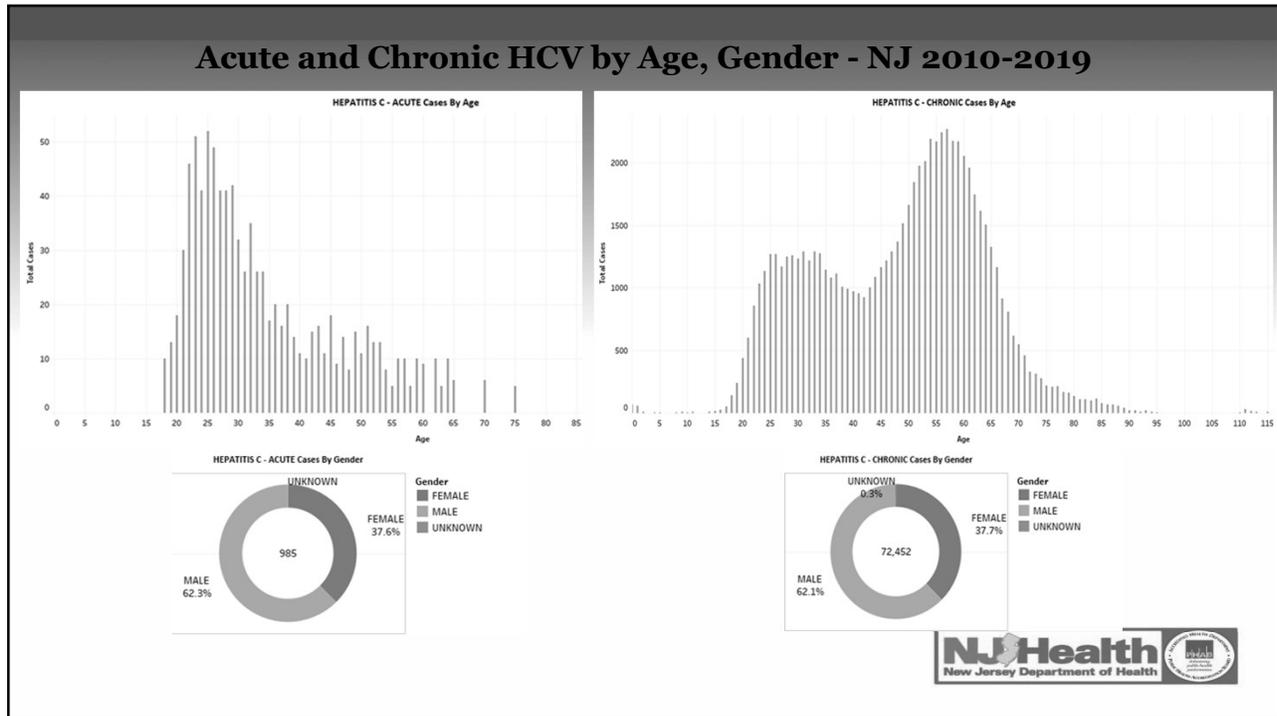
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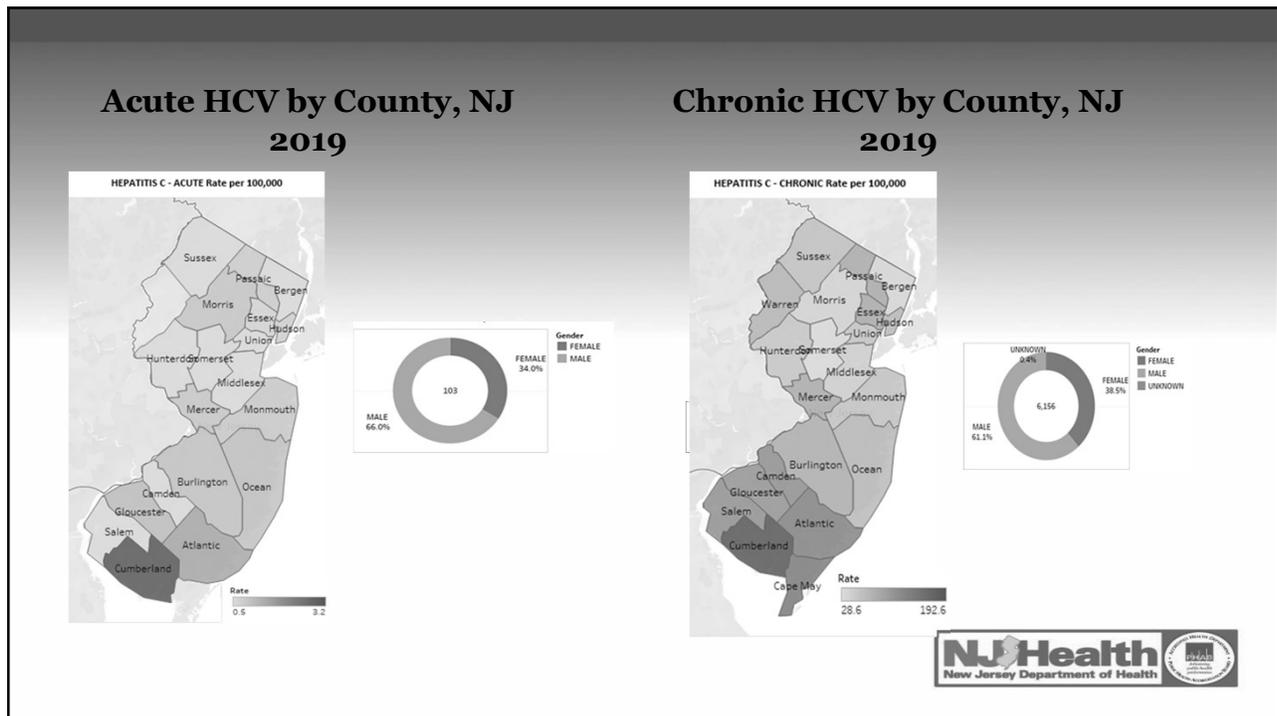
17



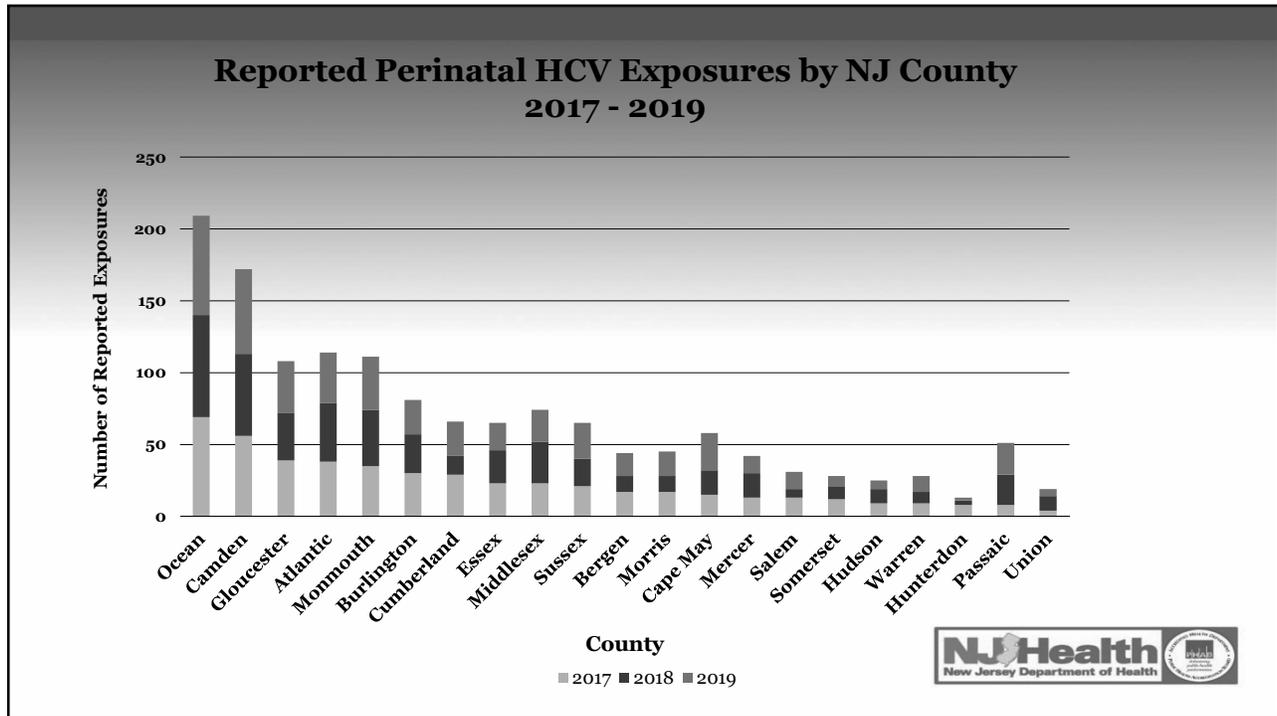
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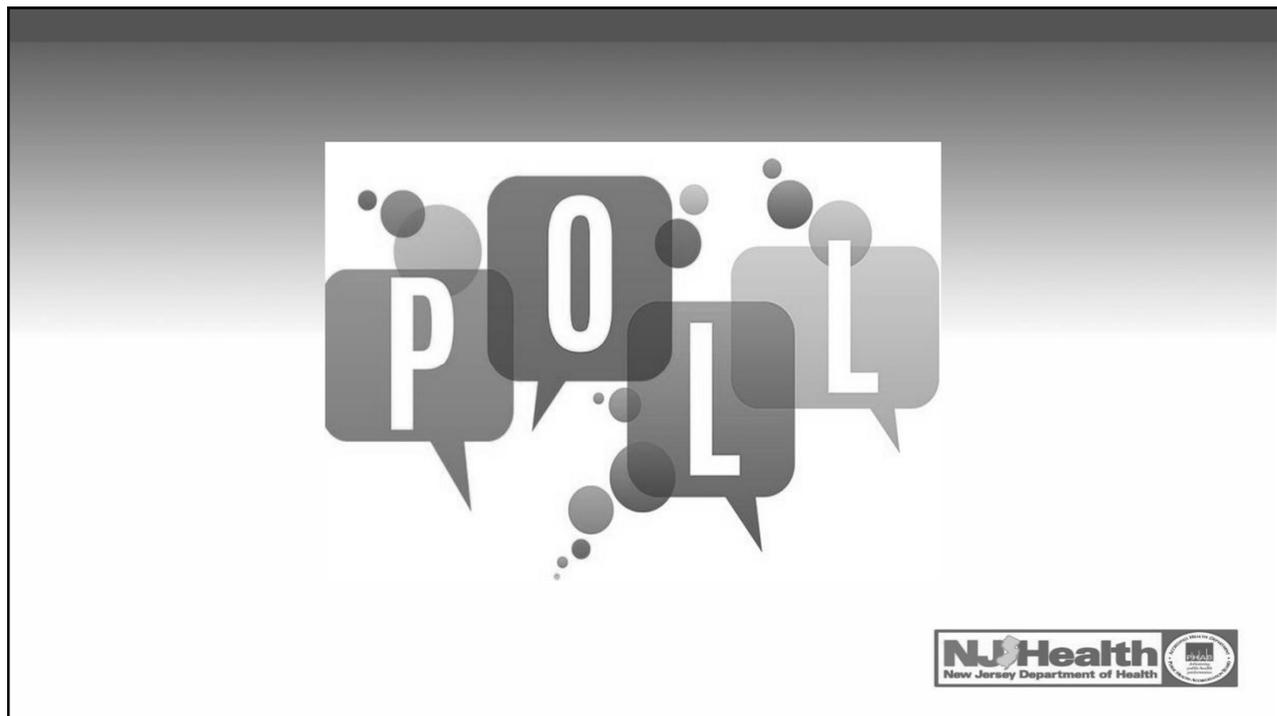
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To be  
revised

NY DEPARTMENT OF HEALTH COMMUNICABLE DISEASE SERVICES  
HEPATITIS C CASE INVESTIGATION FORM

CDRSS #: [click here to enter text.](#)

**PATIENT INFORMATION**

Name Last  First  Middle  Ethnicity  Hispanic  Non-Hispanic  Other/Unknown  
 Address Street  City  County  Race  White  Black  Asian  
 Apt.  State  Zip  Phone #  American Indian or Alaskan Native  
 Email  If child <36 months, is the mother HCV+?  Yes  No  Unknown  
 DOB  Age  Sex  Male  Female  Other / Unknown

**DIAGNOSIS**

Has patient been diagnosed with hepatitis C at any time in the past?  Yes  No  Unknown  
 If "Yes" - Date of illness onset for **NEW** diagnosis:  Select Date  
 Patient informed of **NEW** diagnosis?  Yes  No  Unknown  
 Disease information provided?  Yes  No  Unknown  
 Did this include information about prevention and control?  Yes  No  Unknown  N/A

**CLINICAL SYMPTOMS**

Did the patient have any symptoms?  Yes  No  Unknown  
 Fever  Malaise  Anorexia  Nausea  Date of earliest symptom onset:  Select date.  
 Diarrhea  Jaundice  Other Symptom:   
 If "Yes", provide onset date and symptoms that apply to  Abdominal Pain

**LABORATORY INFORMATION**

Reason for current hep C testing:  Symptoms  Routine testing  Reported Risk Factors  Prenatal Screening  Other:  Most recent lab tests:  No Tests Performed

Test	Anti-HCV	HCV RNA PCR	HCV genotype	ALT (SGPT)	AST (SGOT)	Bilirubin
Result	<input type="text"/>					
Date	<input type="text"/>					

In the past 12 months, did patient have a negative Hep C test result?  Yes  No  Unknown

**RISK FACTORS**

Patient ever have contact with person known to have hep C?  Sex Partner  Other:   Yes  No  Unknown  
 (Indicate type of contact)  Household Member (non-sexual)

Lifetime number of sexual partners? (Indicate number) # male:  # female:   Unknown  
 Patient ever incarcerated for more than 24 hours? Type of facility:   Yes  No  Unknown  
 Patient ever received a blood transfusion?  Yes (before 1992)  Yes (after 1992)  No  Unknown  
 Patient ever accidentally punctured with a needle or other object soiled with blood?  Yes  No  Unknown  
 Was patient ever treated for a sexually transmitted disease?  Yes  No  Unknown  
 Patient ever had a tattoo?  Yes  No  Unknown  
 Patient ever had a body piercing?  Yes  No  Unknown  
 Patient ever exposed to someone else's blood? (medical, dental, public safety, blood worker)  Yes  No  Unknown  
 Patient ever undergone hemodialysis?  Yes  No  Unknown  
 Patient ever injected drugs not prescribed by a doctor?  Yes  No  Unknown  
 Patient had dental work or oral surgery within the last 6 months?  Yes  No  Unknown  
 Patient currently a resident of a long-term care facility?  Yes  No  Unknown

General comments or other risk factors:

is there anything in patient's history that warrants further public health investigation?  
 Yes  No  Unknown → Please explain:

Please return the completed form to:  
 Local Health Department Name   
 Address, P.O. Box, City, State, Zip   
 Contact Name (First, Last), Contact Title   
 Contact Email Address   
 Phone # | Fax #

Name of Clinical Contact: First, Last  Email:  Date Sent (to LHD):  Select date.

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## Priority HCV Cases for Investigation

- All cases suspected to be acute
- All cases suspected to be a seroconversion: that is, positive HCV test within 12 months of a documented negative HCV test
- All cases 40 years of age and younger.
- All cases with a healthcare associated risk factor: hemodialysis, healthcare worker, blood, organ or tissue transplant
- All pregnant women and perinatal cases



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## Priority Case Investigation Guidelines



Two attempts to collect information on the CDS-17 form, from the provider who ordered the testing



If unsuccessful, two attempts to collect information directly from the case



If no response, then send a final letter to the case and request follow up to the health department



Contact the referring medical facility for suspected acute cases for additional clinical information



If no response within 30 days of the letter, close the case based on the case classification algorithms.

<https://www.nj.gov/health/cd/topics/hepatitisc.shtml>



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## Non Priority HCV Cases for Investigation

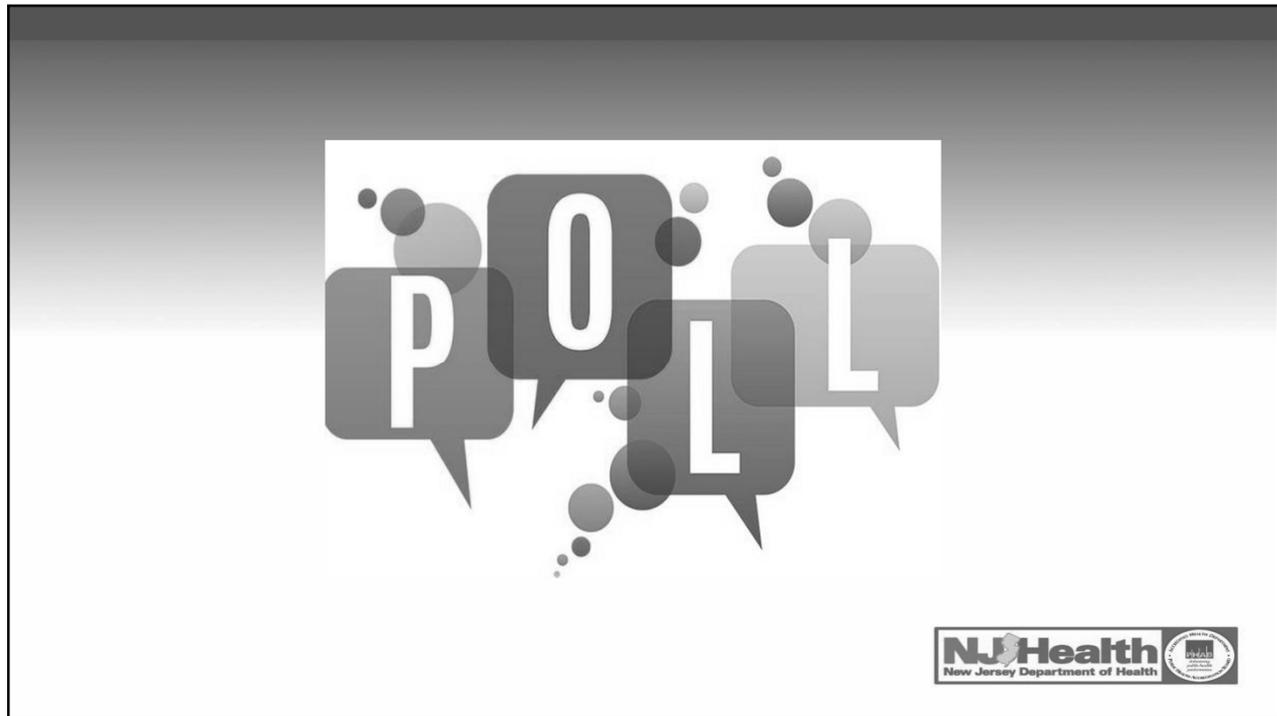
Cases older than 40 years of age that **do not** meet the criteria for acute illness or seroconversion, **are not** healthcare associated, and **are not** associated with a pregnancy

### **Investigation**

A single attempt to collect information on the CDS-17 from the provider who ordered the testing. The case should be closed based on the Case Classification Algorithms using existing information.



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## 2020 Acute Hepatitis C Case Classification

Evidence of **seroconversion**: Documentation of a negative HCV Antibody or NAT test result followed by a positive within 12 months

Or

**Clinical and Laboratory Criteria:**  
 Positive hepatitis C antibody test or HCV detection test,  
**And**  
 Evidence of Jaundice, **Or**  
 Bili  $\geq 3$  mg/dl, **Or**  
 ALT  $> 200$ U/L, **And**  
 Absence of more likely diagnosis

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## Acute Hepatitis C Case Classification

### Acute Probable HCV

Evidence of seroconversion

Or

Meets Clinical Criteria,

And

Presence of positive HCV Antibody test (detected or signal to cutoff), with unknown HCV NAT test result

### Acute Confirmed HCV

Evidence of seroconversion

Or

Meets Clinical Criteria,

And

Presence of positive HCV NAT test (qualitative or quantitative RNA or genotype)



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## Acute Probable HCV Laboratory Presentation in CDRSS

Test	Specimen	Lab Name	Lab Specimen ID	Date Specimen Collected	Value	Report Units	Result
LIVER FUNCTION - ALANINE AMINOTRANSFERASE (ALT) OR SGPT	SERUM/PLASMA			02/10/2021	395		
LIVER FUNCTION - ASPARTATE AMINOTRANSFERASE (AST) OR SGOT				02/10/2021	248		
LIVER FUNCTION - BILIRUBIN		JEFFERSON WASHINGTON TOWNSHIP HOSPITAL		02/10/2021	10.3		
HEPATITIS C VIRUS ANTIBODY SIGNAL TO CUTOFF RATIO (S/CO)	SERUM/PLASMA	JEFFERSON CHERRY HILL HOSPITAL	21H-041H0366	02/10/2021	13.16		POSITIVE/REACTIVE



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## Acute Confirmed HCV Laboratory Presentation in CDRSS

Test	Specimen	Lab Name	Lab Specimen ID	Date Specimen Collected	Value	Report Units	Result
HEPATITIS C VIRUS RNA BY PCR (QUANTITATIVE)	SERUM	LABCORP	22850478740	08/16/2018	1490.0000	IU/mL	
HEPATITIS C VIRUS GENOTYPE	SERUM/PLASMA	LABCORP	22850478740	08/16/2018	HEPATITIS C VIRUS SUBTYPE 1A (ORGANISM)		HEPATITIS C VIRUS SUBTYPE 1A (ORGANISM)
HEPATITIS C VIRUS ANTIBODY (ANTI-HCV)	BLOOD/SERUM	UNKNOWN/OTHER		05/11/2018	REACTIVE		POSITIVE/REACTIVE
LIVER FUNCTION - ALANINE AMINOTRANSFERASE (ALT) OR SGPT	BLOOD/SERUM	UNKNOWN/OTHER		05/11/2018	>631 U/L		POSITIVE/REACTIVE
LIVER FUNCTION - ALKALINE PHOSPHATASE	BLOOD/SERUM	UNKNOWN/OTHER		05/11/2018	136 U/L		POSITIVE/REACTIVE
LIVER FUNCTION - ASPARTATE AMINOTRANSFERASE (AST) OR SGOT	BLOOD/SERUM	UNKNOWN/OTHER		05/11/2018	511 U/L		POSITIVE/REACTIVE
LIVER FUNCTION - BILIRUBIN	BLOOD/SERUM	UNKNOWN/OTHER		05/11/2018	1.3 mg/dl		POSITIVE/REACTIVE



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## Chronic Hepatitis C Case Classification

### Chronic Probable HCV

- Absence of clinical criteria for acute HCV
- No evidence of seroconversion
- Presence of positive HCV antibody test (detected or signal to cutoff)
- Unknown HCV Nat test result

### Chronic Confirmed HCV

- Absence of clinical criteria for acute HCV
- No evidence of seroconversion
- Presence of positive HCV Nat test at any time in case (qualitative or quantitative RNA or genotype)



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## Chronic Probable HCV Laboratory Presentation in CDRSS

Test	Specimen	Lab Name	Lab Specimen ID	Date Specimen Collected	Value	Report Units	Result
LIVER FUNCTION - ASPARTATE AMINOTRANSFERASE (AST) OR SGOT	BLOOD/SERUM	(KS) CLINICAL REFERENCE LABORATORY		01/11/2021	47	U/L	
LIVER FUNCTION - BILIRUBIN	BLOOD/SERUM	(KS) CLINICAL REFERENCE LABORATORY		01/11/2021	0.5	mg/dl	
HEPATITIS C VIRUS ANTIBODY SIGNAL TO CUTOFF RATIO (S/CO)	BLOOD/SERUM	(KS) CLINICAL REFERENCE LABORATORY		01/11/2021	>11.0		POSITIVE/REACTIVE
LIVER FUNCTION - ALANINE AMINOTRANSFERASE (ALT) OR SGPT	BLOOD/SERUM	(KS) CLINICAL REFERENCE LABORATORY		01/11/2021	73	U/L	



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## Chronic Confirmed HCV Laboratory Presentation in CDRSS

Test	Specimen	Lab Name	Lab Specimen ID	Date Specimen Collected	Value	Report Units	Result
LIVER FUNCTION - ASPARTATE AMINOTRANSFERASE (AST) OR SGOT				02/07/2021	80		
LIVER FUNCTION - ALANINE AMINOTRANSFERASE (ALT) OR SGPT				02/07/2021	70		
LIVER FUNCTION - BILIRUBIN				02/07/2021	0.6		
HEPATITIS C VIRUS RNA BY PCR (QUANTITATIVE)	BLOOD/SERUM	(PA) THOMAS JEFFERSON UNIVERSITY HOSPITAL		01/04/2021	8040	IU/ml	POSITIVE/REACTIVE
HEPATITIS C VIRUS ANTIBODY SIGNAL	BLOOD/SERUM	JEFFERSON CHERRY	21H-	01/04/2021	S/CO		POSITIVE/REACTIVE



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## Chronic Confirmed HCV Laboratory Presentation in CDRSS Detected to Not Detected

Test	Specimen	Lab Name	Lab Specimen ID	Date Specimen Collected	Value	Report Units
HEPATITIS C VIRUS GENOTYPE	SERUM/PLASMA	LABCORP	06191112290	03/01/2021	SPECIMEN UNSATISFACTORY FOR EVALUATION	
HEPATITIS C VIRUS ANTIBODY SIGNAL TO CUTOFF RATIO (S/CO)	SERUM/PLASMA	LABCORP	05450406290	02/23/2021	>11.0	s/co ratio
HEPATITIS C VIRUS GENOTYPE	SERUM/PLASMA	LABCORP	24643662120	09/02/2020	HEPATITIS C VIRUS SUBTYPE 1A (ORGANISM)	
HEPATITIS C VIRUS RNA BY PCR (QUANTITATIVE)	SERUM	LABCORP	24643662120	09/02/2020	71600.0000	IU/mL



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## Pending Not a Case HCV Classification

Qualitative HCV NAT test result reported as negative

Or

Quantitative HCV NAT test result reported as less than level of detection

Or

Genotype reported as Specimen Unsatisfactory for Evaluation

AND

Hepatitis C Antibody: Present or Absent



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### Pending Not a Case HCV Laboratory Presentation in CDRSS Negative RNA

Test	Specimen	Lab Name	Lab Specimen ID	Date Specimen Collected	Value	Report Units	Result
HEPATITIS C VIRUS RNA BY PCR (QUALITATIVE)	SERUM	LABCORP	05343680250	02/22/2021	NEGATIVE		



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### Pending Not a Case HCV Laboratory Presentation in CDRSS Below Level of Detection

Test	Specimen	Lab Name	Lab Specimen ID	Date Specimen Collected	Value	Report Units	Result
HEPATITIS C VIRUS RNA BY PCR (QUANTITATIVE)	SERUM	QUEST DIAGNOSTICS - CHANTILLY	CH133596S	02/12/2021	N<sup>*</sup><sup>L</sup>	IU/mL	



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## Pending Not a Case HCV Laboratory Presentation in CDRSS Specimen Unsatisfactory for Evaluation

Test	Specimen	Lab Name	Lab Specimen ID	Date Specimen Collected	Value	Report Units	Result
HEPATITIS C VIRUS GENOTYPE	SERUM/PLASMA	LABCORP	04840132330	02/17/2021	SPECIMEN UNSATISFACTORY FOR EVALUATION		



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## Perinatal HCV Case Classification

HCV RNA positive test results for infants between **2 to 36 months** of age,

And/or

HCV genotype test results for infants between 2 to 36 months of age

**Epi Link:** Maternal infection with HCV of any duration, if known. Not known to have been exposed to HCV via a mechanism other than perinatal (example, not acquired via healthcare).

Test results prior to 2 months of age should not be used for classification.



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## Recommendations for HCV Testing of Perinatally Exposed Children and Siblings

All children born to HCV-infected women should be tested for HCV infection. Testing is recommended using an antibody-based test at or after 18 months of age.

Antibody positive children should be tested for HCV RNA

An HCV RNA test can be considered as early as 2 months of age

Repetitive HCV RNA testing prior to 18 months of age is not recommended

The siblings of children with vertically-acquired chronic HCV should be tested for HCV infection, if born from the same mother



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## Perinatal Confirmed HCV Laboratory Presentation in CDRSS Between 2 and 36 Months of Age

Test	Specimen	Lab Name	Lab Specimen ID	Date Specimen Collected	Value	Report Units
HEPATITIS C VIRUS RNA BY PCR (QUANTITATIVE)	SERUM	LABCORP	14443614910	05/24/2021	1620000.0000	IU/mL
HEPATITIS C VIRUS RNA BY PCR (QUANTITATIVE)	SERUM	LABCORP	29340175950	10/19/2020	1764890.0000	IU/mL
HEPATITIS C VIRUS ANTIBODY SIGNAL TO CUTOFF RATIO (S/CO)	SERUM/PLASMA	LABCORP	29340175950	10/19/2020	>11.0	s/co ratio
LIVER FUNCTION - BILIRUBIN	SERUM/PLASMA	LABCORP	29340175950	10/19/2020	<0.2	mg/dL
LIVER FUNCTION - ALANINE AMINOTRANSFERASE (ALT) OR SGPT	SERUM/PLASMA	LABCORP	29340175950	10/19/2020	28	IU/L
LIVER FUNCTION - ASPARTATE AMINOTRANSFERASE (AST) OR SGOT	SERUM/PLASMA	LABCORP	29340175950	10/19/2020	49	IU/L



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## HCV Case Classification Assignments

Disease Subgroup	Case Status	Meets Clinical Criteria for Acute HCV	HCV RNA NAT/Genotype	Positive HCV Antibody Only
Chronic	Confirmed	No	Yes	No
Chronic	Probable	No	Unknown/Not Reported	Yes
Acute	Confirmed	Yes	Yes	No
Acute	Probable	Yes	Unknown/ Not Reported	Yes
Perinatal	Confirmed	Not Applicable	Yes	No
Pending	Not a Case	No	Negative	No



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## Treatment and Linkage to Care

- **If treatment information is collected, perform the following in the case report in CDRSS:**
  - Select TREATMENT tab
  - Select name of medication from the treatment drop down
  - Add any other treatment information known
- **Linkage to Care:**
  - If linkage to care is known place in comment tab
  - Clinical status: Case evaluated by HCP?



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## CDRSS Management Tips

- No Illness onset date except for acute cases
- Person merges cannot be undone. Avoid merging persons unless it is certain that they are the same
- It is acceptable to have a probable case in a prior year and a new confirmed case. Do not merge a confirmed case into an older probable case
- Do not merge Acute HCV cases with other subgroups
- Do merge Acute HCV cases with Pending subgroup if created within 12 months of each other
- No need to update demographic, contact or serology information for Chronic Confirmed DHSS Approved cases

[http://cdrs-train.doh.state.nj.us/manuals/help/CDRSS\\_HelpDesk\\_FAQsv3.pdf](http://cdrs-train.doh.state.nj.us/manuals/help/CDRSS_HelpDesk_FAQsv3.pdf)



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## Revised Hepatitis C Chapter

- The Hepatitis C Chapter has been revised as of May 2021
- Available on NJDOH's Hepatitis C webpage
- Many updates made from the previous chapter
- Includes updated background and epidemiology information
- Includes latest testing recommendations and new treatment options
- Some updates were in the 2017 Hepatitis Investigation guidelines
- Includes the recent CSTE Acute, Chronic, Perinatal case definitions



<https://www.nj.gov/health/cd/topics/hepatitisc.shtml>



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## Hepatitis C Resources

- [https://www.cdc.gov/hepatitis/hcv/pdfs/hcv\\_flow.pdf](https://www.cdc.gov/hepatitis/hcv/pdfs/hcv_flow.pdf)
- [https://www.cdc.gov/hepatitis/hcv/pdfs/hcv\\_graph.pdf](https://www.cdc.gov/hepatitis/hcv/pdfs/hcv_graph.pdf)
- <https://www.cdc.gov/hepatitis/hcv/cfaq.htm#overview>
- <https://www.cdc.gov/hepatitis/statistics/2019surveillance/HepC.htm>
- <https://wwwn.cdc.gov/nndss/conditions/hepatitis-c-acute/case-definition/2020/>
- <https://wwwn.cdc.gov/nndss/conditions/hepatitis-c-chronic/case-definition/2020/>
- <https://wwwn.cdc.gov/nndss/conditions/hepatitis-c-perinatal-infection/case-definition/2018/>



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## Questions



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## Thank You

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