15-ID-03

Committee: Infectious Disease

Title: Revision of the Case Definition of Hepatitis C for National Notification

I. Statement of the Problem

Since the identification of hepatitis C virus in 1989, the introduction of a sensitive serologic test in 1992 and the recognition of hepatitis C virus (HCV) as the major cause of bloodborne "non-A, non-B" transmissible hepatitis, there have been numerous revisions to the case definitions for acute hepatitis C (nationally notifiable in 1994) (1) and past or present/chronic hepatitis C (nationally notifiable in 2003) (2). During this time, there have been a number of substantive developments in surveillance for hepatitis C, elucidation of pathogenesis, appreciation of the burden of infection and disease, and introduction of progressively more effective, but also more expensive, curative therapy. There is now a need for a hepatitis C case definition that meets the needs of present circumstances and recognizes the challenges facing a national system of surveillance for this infection.

II. Background and Justification

There are a number of factors contributing to the need for further revision of the hepatitis C case definitions, including:

- ongoing development of more accurate, rapid and definitive screening and diagnostic laboratory tests (3,4)
- changes in recommended algorithms for screening and diagnostic testing (5)
- evolution of laboratory result reporting to public health surveillance systems, particularly the emergence of electronic laboratory reporting (6)
- evolution of automated surveillance, work flow and case management systems (7)
- appreciation of the difficulties in ascertainment of acute HCV infection
- frequent lack of test results (viral RNA) to establish active infection (8,9)
- burden of surveillance for hepatitis C, past or present, beyond existing state and local resources
- heterogeneity of hepatitis C surveillance activities around the country
- recognition of high population prevalence of hepatitis C, past or present (10,11)
- an emerging epidemic of HCV infection in young adult injection drug users (12,13)
- hepatitis C as an important healthcare-associated infection (14,15)
- recognition of substantial morbidity and mortality related to chronic HCV infection (16)
- improved understanding of spontaneous clearance of infection (17)
- recommendations for routine screening of a large proportion of the population (18,19)
- evolution of curative therapy that is highly effective in reducing morbidity and mortality associated with infection and has the potential for reducing transmission of infection, but is expensive (20,21)
- need for surveillance data to support policy development and planning (22)

The disease burden of hepatitis C in the United States is substantial (23), with care costs predicted to increase significantly, even with the declining population of "baby boomers" (24). In light of the national epidemic of opioid and opiate use, with unsafe injection of these drugs, incidence of hepatitis C appears to be growing among younger individuals (13, 25). Estimates of acute infection of 21,870 in 2012 have been made (26), but ascertainment of acute cases has been and will remain a considerable challenge. Taken together, all of the factors speak to the need for a straightforward, easy-to-apply case definition that is relevant from both a clinical and public health perspective, seeks to capture acute infection and is capable of defining some measure of population burden of infection. A revised case definition should take into consideration the resource challenges inherent in the volume of cases and the complete ascertainment of infection status. It should consider the spectrum of hepatitis C rather than distinguishing acute and chronic infection as distinct conditions. The case definition also should be structured in a way that captures incident acute cases and new diagnoses of chronic infection for the purposes of CDC notification. Jurisdictions may choose to maintain hepatitis C data, including data on spontaneous clearance of infection or cure with antiviral therapy, according to local preference and in consideration of resources.

III. Statement of the desired action(s) to be taken

The current surveillance case definitions for hepatitis C (acute and past/present) should be revised and replaced for reporting of all incident cases or prevalent cases/incident diagnoses of probable or confirmed, acute and chronic hepatitis C for the purpose of national surveillance.

☑
1. Utilize standard sources (e.g. reporting) for case ascertainment for hepatitis C (*per se*). Surveillance for hepatitis C (*per se*) should use the following recommended sources of data to the extent of coverage presented in Table III.

Table III. Recommended sources of data and extent of coverage for ascertainment of cases of hepatitis C (*per se*).

Source of data for case ascertainment	Coverage	
	Population-wide	Sentinel sites
Clinician reporting	X	
Laboratory reporting	X	
Reporting by other entities (e.g., hospitals, veterinarians, pharmacies, poison centers)	X	
Death certificates	X	
Hospital discharge or outpatient records	X	
Extracts from electronic medical records	X	
Telephone survey		
School-based survey		
Other _____		
		2015 Template

☑ 2. Utilize standardized criteria for case identification and classification (Sections VI and VII) for hepatitis C (*per se*) and add hepatitis C (*per se*) to the *Nationally Notifiable Condition List.*

☐ 2a. Immediately notifiable, extremely urgent (within 4 hours)

☐ 2b. Immediately notifiable, urgent (within 24 hours)

☑ 2c. Routinely notifiable

CSTE recommends that all States and Territories enact laws (statue or rule/regulation as appropriate) to make this disease or condition reportable in their jurisdiction. Jurisdictions (e.g. States and Territories) conducting surveillance (according to these methods) should submit case notifications** to CDC.

☑ 3. CDC should publish data on hepatitis C (*per se*) as appropriate in *MMWR* and other venues (see Section IX).

4. With adoption of the notifiability of hepatitis C (per se), separate notification of “Hepatitis C, acute” and “Hepatitis C, past or present” will be discontinued.

CSTE recommends that all jurisdictions (e.g. States or Territories) with legal authority to conduct public health surveillance follow the recommended methods as outlined above.

Terminology:
* Reporting: process of a healthcare provider or other entity submitting a report (case information) of a condition under public health surveillance TO local or state public health.
**Notification: process of a local or state public health authority submitting a report (case information) of a condition on the Nationally Notifiable Condition List TO CDC.

IV. Goals of Surveillance

To provide information on the temporal, geographic, and demographic occurrence of hepatitis C to facilitate its prevention and control, and to provide information about population burden of disease to inform policy and planning.

V. Methods for Surveillance

Surveillance for hepatitis C (*per se*) should use the recommended sources of data and the extent of coverage listed in Table III.

VI. Criteria for case identification

A. Narrative: A description of suggested criteria for case ascertainment of a specific condition.

Report any illness to public health authorities that meets any of the following criteria:

Clinical evidence: A person with or without symptoms.

AND

Laboratory evidence: A person who has tested positive for antibodies to hepatitis C virus (anti-HCV) and/or positive for RNA of hepatitis C virus by nucleic acid testing or positive for hepatitis C viral antigen(s)*.

Medical record data: A person whose healthcare record contains a diagnosis of hepatitis C.

Administrative data: A person whose death certificate lists hepatitis C as a cause of death or as a condition contributing to death.

Other recommended reporting procedures
- All cases of hepatitis C should be reported.
- Reporting should be on-going and routine.
- Frequency of reporting should follow the health department's routine schedule.

* When and if a test for HCV antigen(s) is approved by FDA and available.

B. Table of criteria to determine whether a case should be reported to public health authorities

Table VI-B. Table of criteria to determine whether a case should be reported to public health authorities.

Criterion	Reporting
Clinical Evidence	
Healthcare record contains a diagnosis of hepatitis C	S
Death certificate lists hepatitis C	S
Laboratory Evidence	
Antibodies to hepatitis C virus (anti-HCV)	S
Nucleic acid test (NAT) for HCV RNA positive	S
Positive test for hepatitis C antigen(s)*	S

Notes:
S = This criterion alone is Sufficient to report a case.

C. Disease-specific data elements

Disease-specific data elements to be included in the initial report are listed below.

- Epidemiological Risk Factors
  - Did the patient ever:
    - Receive a blood transfusion prior to 1992
    - Receive an organ or tissue transplant prior to 1992
    - Receive clotting factor concentrates prior to 1987
    - Receive hemodialysis
    - Use non-prescription or “street” drugs, by injection or nasal insufflation
    - Have direct contact (blood to blood, or mucous membrane) with someone else’s blood
    - Have close contact with someone diagnosed with hepatitis
    - Live with/share personal items with an HCV-infected household contact
    - Receive a tattoo or body piercing
    - Receive treatment for a sexually-transmitted infection
    - Have surgery
    - Receive injection medications at a doctor’s office or a clinic, or as part of a medical procedure
    - Born to a hepatitis C positive mother
  - Patient History
    - Previous testing for hepatitis C
    - Previous testing for hepatitis A and B
    - Serum aminotransferase levels (ALT or AST)
    - Symptoms of viral hepatitis
    - Multiple sex partners
    - Male sex with men
    - Incarceration
  - Blood products
    - Donate blood
      - Date of last donation
    - Date of last donation screened negative for hepatitis C

* When and if a test for HCV antigen(s) is approved by FDA and available.

VII. Case Definition for Case Classification

A. Narrative: Description of criteria to determine how a case should be classified.

Clinical Criteria

An illness with discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal pain),

AND

a) jaundice

OR

b) a peak elevated serum alanine aminotransferase (ALT) level >200 IU/L during the period of acute illness.

Laboratory Criteria

A positive test for antibodies to hepatitis C virus (anti-HCV)

Hepatitis C virus detection test:

Nucleic acid test (NAT) for HCV RNA positive (including qualitative, quantitative or genotype testing)

A positive test indicating presence of hepatitis C viral antigen(s) (HCV antigen)*

Case Classification

Acute, confirmed

A case that meets clinical criteria and has a positive hepatitis C virus detection test (HCV NAT or HCV antigen)

OR

A documented negative HCV antibody, HCV antigen or NAT laboratory test result followed within 12 months by a positive result of any of these tests (test conversion)

Acute, probable

A case that meets clinical criteria and has a positive anti-HCV antibody test, but has no reports of a positive HCV NAT or positive HCV antigen tests

AND

Does not have test conversion within 12 months or has no report of test conversion

* When and if a test for HCV antigen(s) is approved by FDA and available.

Chronic, confirmed

A case that does not meet clinical criteria or has no report of clinical criteria

AND

Does not have test conversion within 12 months or has no report of test conversion

AND

Has a positive HCV NAT or HCV antigen test

Chronic, probable

A case that does not meet clinical criteria or has no report of clinical criteria

AND

Does not have test conversion within 12 months or has no report of test conversion

AND

Has a positive anti-HCV antibody test, but no report of a positive HCV NAT or positive HCV antigen test

Criteria to distinguish a new case of this disease or condition from reports or notifications which should not be enumerated as a new case for surveillance

A new case is an incident case (new acute or newly diagnosed chronic) that has not previously been reported meeting case criteria for hepatitis C. A new probable acute case may be re-classified as confirmed acute case if a positive NAT for HCV RNA or a positive HCV antigen(s) test is reported within the same year. A confirmed acute case may be classified as a confirmed chronic case if a positive NAT for HCV RNA or a positive HCV antigen is reported one year or longer after acute case onset. A confirmed acute case may not be reported as a probable chronic case (i.e., HCV antibody positive, but with an unknown HCV RNA NAT or antigen status). States and territories may choose to track resolved hepatitis C cases in which spontaneous clearance of infection or sustained viral response to treatment are suspected to have occurred before national notification or are known to have occurred after national notification as a confirmed or probable case to CDC.

B. Classification Table

Table VII-B. Criteria for defining a case of hepatitis C (*per se*).

	Acute					Chronic	
Criterion	Confirmed			Probable		Confirmed	Probable
Clinical Evidence							
Discrete onset	N	N		N	N		
Fever	O	O		O	O		
Headache	O	O		O	O		
Malaise	O	O		O	O		
Anorexia	O	O		O	O		
Nausea	O	O		O	O		
Vomiting	O	O		O	O		
Diarrhea	O	O		O	O		
Abdominal Pain	O	O		O	O		
Jaundice	N			N			
>200 ALT		N			N		
No available evidence of clinical and relevant laboratory information indicative of acute infection						N	N
Laboratory evidence							
Positive anti-HCV antibody				N	N		N
Report of a positive HCV detection test (NAT for HCV RNA or HCV antigen(s)*)	N	N				N	
Absence of a negative NAT for HCV RNA or negative HCV antigen(s)*						N	N
Report of HCV antibody or virus detection test conversion from negative to positive within 12 months			S				
Criteria to distinguish a new case:							
Not previously reported as a case	N	N		N	N		
Not previously reported as an acute case within one year						N	N
Not previously reported as a chronic case and no known clearing of infection	N	N		N	N	N	N

Notes:
S = This criterion alone is Sufficient to classify a case.
N = All “N” criteria in the same column are Necessary to classify a case. A number following an “N” indicates that this criterion is only required for a specific disease/condition subtype (see below).
A = This criterion must be absent (i.e., NOT present) for the case to meet the classification criteria.

O = At least one of these “O” (Optional) criteria in each category (e.g., clinical evidence and laboratory evidence) in the same column—in conjunction with all “N” criteria in the same column—is required to classify a case. (These optional criteria are alternatives, which means that a single column will have either no O criteria or multiple O criteria; no column should have only one O.) A number following an “O” indicates that this criterion is only required for a specific disease/condition subtype.
* When and if a test for HCV antigen(s) is approved by FDA and available.

VIII. Period of Surveillance

Surveillance should be ongoing incident (acute cases and newly diagnosed chronic cases) surveillance.

IX. Data sharing/release and print criteria

- It is recommended that states notify CDC of incident confirmed and probable cases of acute and chronic hepatitis C.
- It is recommended that states transmit reports of acute hepatitis C to CDC to be analyzed weekly by CDC, and identified clusters will be confirmed with state health departments.
- CDC will summarize acute hepatitis C reports annually in the MMWR summary of notifiable diseases.
- CDC will conduct an extensive analysis for publication annually as a Surveillance Summary, along with data on hepatitis A and hepatitis B.
- CDC will send a biannual report of cases to states, for quality control and reconciliation.
- There is no current plan to re-release case data. CDC will make aggregate reports publicly available, and states will maintain confidential surveillance databases.

X. References

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   06-ID-10: Acute Hepatitis C:
   http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/PS/06-ID-10FINAL.pdf
   09-ID-40: Public Health Reporting and National Notification for Acute Hepatitis C:
   http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/PS/09-ID-40.pdf
   10-ID-08: Public Health Reporting and National Notification for Acute Hepatitis C:
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10-ID-09: Public Health Reporting and National Notification for Hepatitis C Infection, Past or Present: http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/PS/10-ID-09.pdf
11-ID-06: Public Health Reporting and National Notification for Hepatitis C Infection, Past or Present: http://c.ymcdn.com/sites/www.cste.org/resource/resmgr/PS/11-ID-06.pdf

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XI. Coordination

Agencies for Response

(1) Thomas R. Frieden, MD, MPH
Director, Centers for Disease Control and Prevention
1600 Clifton Road, NE
Atlanta, GA 30333
404-639-7000
txf2@cdc.gov

XII. Submitting Author:

(1) Alfred DeMaria, Jr., MD
State Epidemiologist
Bureau of Infectious Disease, Massachusetts Department of Public Health
William A. Hinton State Laboratory Institute
305 South Street
Jamaica Plain, Massachusetts 02130
617-983-6550
Alfred.DeMaria@state.ma.us

Co-Author:

(1) ☒Active Member ☐Associate Member

Kristy K. Bradley, DVM, MPH
State Epidemiologist
Oklahoma State Department of Health
1000 NE Tenth Street, Room 606
Oklahoma City, OK 73117
(405) 271-7637
kristyb@health.ok.gov

(2) ☒Active Member ☐Associate Member

Katherine Bornschlegel, MPH
New York City Department of Health and Mental Hygiene
2 Gotham Center, CN 22A
42-09 28th St. 6th floor, 6-15
LIC, NY 11101
(347) 396 2649
kbornsch@health.nyc.gov

(3) ☒Active Member ☐Associate Member

Joseph R. Coyle, MPH
Viral Hepatitis Surveillance and Prevention Unit Manager
Michigan Department of Community Health
201 Townsend Floor 5 CVB
Lansing, MI 48913
Phone: (517) 373-4501
CoyleJ@michigan.gov