Appendix Table 1. Case Definition Comparison\*

Appendix Table 2. Criteria by Which 43 Cases of Acute HCV Infection Were Identified for Follow-up\*

Appendix Figure. Proportion of acute HCV clinical cases reported to the MDPH from BAHSTION by year. Enhanced laboratory reporting from Massachusetts General Hospital since October 2008 and Lemuel Shattuck Hospital since 2010. BAHSTION = Boston Acute HCV Study: Transmission, Immunity, and Outcomes Network; HCV = hepatitis C virus; MDPH = Massachusetts Department of Public Health.

Supplement 1. Case Report Form for Past or Present Hepatitis C Virus Infection

Supplement 2. Enhanced Case Report Form for Acute Hepatitis C Virus Infection

Context

Estimates of the incidence of acute hepatitis C virus (HCV) infection are complicated by the lack of a specific laboratory test and its generally asymptomatic presentation.

Contribution

Among patients with clinically diagnosed acute HCV infection participating in a research study, virtually none fit the national case definition of acute infection used for reporting to the Centers for Disease Control and Prevention. Limitations to accurate case ascertainment included incomplete reporting, problematic case definitions, requirements for negative hepatitis A and B laboratory results, and incomplete data capture.

Caution

Patients were from 2 hospitals in 1 state.

Implication

Current national estimates of the incidence of acute HCV infection may not be reliable.

—The Editors

Appendix: Detailed Description of Viral Hepatitis Surveillance and Acute HCV Definitions

Hepatitis C virus infection in Massachusetts residents has been reportable to the MDPH since 1992. Massachusetts regulations place responsibility for reporting on the health care provider and the “laboratory performing examinations on any specimens derived from Massachusetts residents that yield evidence of infection due to the organisms listed,” including laboratories outside of Massachusetts. Cases are assigned status both for acute HCV infection and evidence of past or present HCV infection.

Case definitions for the CDC’s National Notifiable Diseases Surveillance System are developed by the Council of State and Territorial Epidemiologists, which reviews and updates case definitions at the recommendation of the membership through position statements at their annual meeting. Since 2003, a confirmed case of “past or present HCV infection” for surveillance purposes has been defined for the National Notifiable Diseases Surveillance System as having 1 or more of the following criteria: anti-HCVs with a signal–cutoff ratio predictive of a true positive, positive results for HCV on a recombinant immunoblot assay, or positive results for HCV RNA on a nucleic acid test (including qualitative, quantitative, or genotype testing). The signal–cutoff ratio is a measure of the strength of the positive result for an enzyme immunoassay calculated by dividing the optical density value of the sample being tested by the optical density value of the assay cutoff for that run. Ratios predictive of a true positive of 95% or greater of the time were determined by the CDC to provide more reliable results for physicians and patients and to limit further evaluation to those confirmed to be infected (34).

Cases are counted either in the year the patient reported symptoms by the first positive HCV antibody test result or the year in which they were reported to the MDPH by their health care provider. Confirmed cases may also be classified in the absence of clinician reporting if all necessary confirmatory testing is available via ELR.

Before 2005, case investigations were done by officials from city or town health departments. Because of the excessive burden of new reports of HCV infection, the MDPH switched to clinician-based reporting, in which the ordering provider completes a single-page HCV CRF requesting patient demographic characteristics, clinical history, confirmatory laboratory results, and basic risk factors, in 2005 (Supplement 1). Before 2007, if the submitted form indicated a case potentially meeting the surveillance case definition for acute HCV infection (acute illness with jaundice or ALT level >400 IU/L), case follow-up was assigned to the local public health official who interviewed the patient using a more detailed acute HCV CRF (Supplement 2). In 2007, the MDPH also began sending the longer acute HCV CRF directly to clinicians for cases in patients aged 15 to 25 years in place of the short form regardless of reporting of jaundice or ALT levels greater than 400 U/L. Epidemiologists at the MDPH review all completed acute HCV CRFs and reported laboratory results and assign case status based on the current standard surveillance case definitions. Case classification may be modified and updated based on additional information. Cases classified according to the national surveillance case definition are submitted to the CDC weekly.