



## Hepatitis C Surveillance

### Informing Policy Decisions to Stem the California Epidemic

#### Hepatitis C: The Silent Epidemic

- The most common blood-borne infection in the United States
- The leading cause of liver disease and liver transplants
- Affects four million Americans and 600,000 Californians
- Causes 1,000-1,200 California deaths per year; this number is expected to triple over the next 20 years
- Can take decades to progress
- There is no vaccine to prevent hepatitis C

*Source:* The Hepatitis C Strategic Plan — A Collaborative Approach to the Emerging Epidemic in California, 2001.

Effective prevention and control efforts to stem the hepatitis C virus (HCV) epidemic depend on accurate reporting and tracking of disease incidence information. Surveillance activities—the monitoring of patterns and risks—can assist California and national decision makers to direct resources for prevention and control activities, as well as evaluate the effectiveness of current HCV activities.

Comprehensive HCV data are also important to the development of research on the nature and epidemiology of the disease and for behavioral research on individuals' risk-taking and decision-making. Further, accurate data are needed to inform the development of new treatments and vaccines.<sup>1,2</sup>

Surveillance activities should identify both acute HCV (newly acquired symptomatic infection) to track ongoing infection and risk factors, and chronic HCV infection. Often persons with chronic HCV are asymptomatic and may not be aware of their infection, but these persons can be a source of infection to others and are at risk for chronic liver disease.<sup>3</sup>

#### Reliable Data Collection Needed

Differentiating between acute and chronic HCV is complicated. While acute HCV is reportable in all states, and approximately 30 states require laboratories to report HCV positive test results, few states conduct surveillance specifically for acute cases. Cases that are either chronic or have resolved may be incorrectly reported, so state data

sent to the Centers for Disease Control and Prevention (CDC) on acute cases may be unreliable. Determining whether a case of HCV is acute or chronic often requires further investigation. The CDC monitored acute HCV through its Sentinel Counties Study, which required investigation of all reports of HCV, to determine a baseline for assessing the accuracy of acute case reporting nationally. The CDC has also introduced methods to facilitate management and evaluation of case reports, such as raising the threshold of the alanine aminotransferase (ALT) liver enzyme test in the HCV case definition, to provide more specific criteria for determining acute HCV cases.<sup>4</sup>

#### Promising Programs in Wisconsin and Florida

Few states maintain HCV lab reporting databases or collect patient specific information on risk factors or medical follow-up.<sup>5</sup> However, promising HCV surveillance programs do exist. The Wisconsin Department of Health Services implemented the Enhanced HCV Surveillance Pilot Program, which collected information on access to health care and receipt of hepatitis services from a sample of persons who had been reported to have HCV infection.

Wisconsin health officials recognized the need for appropriate follow-up with persons diagnosed with HCV infection. Local health departments provide health education and risk reduction information, hepatitis A and B vaccines, medical and support service referrals and testing for partners and others at risk. The study results pointed to disparities in receipt of services by

#### Purpose of HCV Surveillance

- Identify new cases and monitor disease trends
- Determine risk factors for HCV infection and transmission
- Assess how widely and among whom the disease is found
- Identify infected persons for counseling and medical follow-up

*Source:* The Hepatitis C Strategic Plan—A Collaborative Approach to the Emerging Epidemic in California, 2001.

newly diagnosed persons, those without insurance, and among African Americans. Race was not found to be a determinate of insurance status. More than half of the study population reported that they had received educational information about HCV. Hepatitis A and B vaccinations, which are recommended for persons with HCV, were among the least frequently received services. The study results, obtained through enhanced surveillance, will allow health officials in Wisconsin to target their resources more efficiently.<sup>6</sup>

The Florida Legislature appropriated \$2.5 million for hepatitis prevention and control in 1999, and \$3.5 million in each subsequent year. The new funds support HCV programs in nine Florida counties, including Dade, the largest population center, as well as statewide education and awareness activities, including an HCV hotline. Since 2001, the program has made hepatitis A and B vaccines, and testing for A, B and C available in all counties at no cost for adults at risk for hepatitis infection. This funding has also been used to transition from a paper-based disease surveillance system to a web-based system for reporting all communicable diseases. The program's goal is to reduce reliance on physician reports and move to reports from laboratories.<sup>7</sup> Florida health officials cite the state-operated laboratory as being the most efficient resource for HCV testing and recommend its use whenever possible.<sup>8</sup>

### Changing California's HCV Surveillance Policy

In California, physicians and other health care providers are mandated to report to local health jurisdictions (LHJs) both acute and chronic HCV using a confidential morbidity report (CMR). Underreporting by physicians is suspected. Currently, laboratories are not mandated to report HCV, although some voluntary reporting does occur.

One of the main problems with the current California HCV surveillance system is that LHJs are using different hepatitis C case definitions when reporting cases to the State. Some LHJs report positive antibody tests, which do not distinguish whether the disease is active or resolved. Other LHJs may only report tests that detect the virus. Another problem is that few LHJs have the resources to determine whether a case is acute or chronic. The current reporting system is not de-duplicated.

The California Department of Health Services (CDHS) is empowered by the California Legislature to make changes to the list of reportable diseases and conditions in the California Code of Regulations when the California Conference of Local Health Officers (CCLHO) supports such changes. In October 2004, CCLHO asked a subcommittee of the California Association of Communicable Disease Controllers (CACDC) to review HCV reporting policy in California. The subcommittee concluded that laboratories should be mandated to report test results indicative of HCV infection to LHJs. The subcommittee is continuing its discussion of which tests should be reported. CACDC is expected to forward its recommendations to CCLHO by December 2005.

A web-based disease reporting system called Web CMR is currently under development by CDHS. When implemented, this advancement in chronic disease surveillance could impact the quality and quantity of information—including HCV data—local health jurisdictions are able to gather and send to CDHS.

### California HCV Surveillance Policy Recommendations

Policies for HCV surveillance should support timely reporting and analysis of HCV with standardized laboratory tests, include data to quantify the extent of the disease, and evaluate prevention and control efforts.

Policy makers should support:

- Surveillance systems that use standardized case definitions for reporting HCV infection
- Surveillance systems that are compatible with other states' HCV reporting systems and include data to facilitate targeting and assessment of prevention programs
- Implementation of mandatory laboratory reporting of HCV infection
- Implementation of Web CMR and use it to maintain a confidential, web-based database with unique identifiers of persons with HCV infection

### References

- <sup>1</sup> Hepatitis C Strategic Plan Working Group. (2001). *The Hepatitis C Strategic Plan: A Collaborative Approach to the Emerging Epidemic in California*. Berkeley, CA.
- <sup>2</sup> National Center for Infectious Diseases, Centers for Disease Control and Prevention. (Summer, 2001). *National Hepatitis C Prevention Strategy*. Retrieved from the CDC website September 28, 2005 from <http://www.cdc.gov/ncidod/diseases/hepatitis/c/plan/>
- <sup>3</sup> National Center for Infectious Diseases, Centers for Disease Control and Prevention. (Summer 2001).
- <sup>4</sup> National Center for Infectious Diseases, Centers for Disease Control and Prevention. (Summer 2001).
- <sup>5</sup> National Center for Infectious Diseases, Centers for Disease Control and Prevention. (Summer 2001).
- <sup>6</sup> Hurie, M., Rogers, P., & Hoxie, N. (2005) *The Enhanced HCV Surveillance Program*. Wisconsin Division of Public Health, Bureau of Communicable Diseases.
- <sup>7</sup> Florida Hepatitis and Liver Failure Prevention and Control Programmatic Evaluation. (February 2005). Retrieved from the Florida State Department of Health website September 28, 2005 from [www.doh.state.fl.us/disease\\_ctrl/aids/hep/HepExec.pdf](http://www.doh.state.fl.us/disease_ctrl/aids/hep/HepExec.pdf).
- <sup>8</sup> Florida Hepatitis and Liver Failure Prevention and Control Programmatic Evaluation. (February 2005).

Hepatitis C Standardized Case Definitions			
	Clinical case definition	Laboratory criteria for diagnosis	Case Classification
<b>Acute Hepatitis C</b>	An acute illness with: <ul style="list-style-type: none"> <li>Discrete onset of symptoms (such as nausea, vomiting, abdominal pain and diarrhea) <b>and</b></li> <li>Jaundice or abnormal serum aminotransferase levels</li> </ul>	<ul style="list-style-type: none"> <li>Serum alanine aminotransferase levels greater than 7 times the upper limit of normal, <b>and</b></li> <li>IgM antibody to hepatitis A virus (IgM anti-HAV) negative, <b>and</b></li> <li>IgM antibody to hepatitis B core antigen (IgM anti-HBc) negative, or if not done, hepatitis B surface antigen (HBsAg) negative, <b>and</b></li> </ul> One of the following: <ul style="list-style-type: none"> <li>Antibody to hepatitis C Virus (anti-HCV) screening-test-positive verified by an additional more specific assay (e.g., recombinant immunoblot assay [RIBA] for anti-HCV or nucleic acid testing for hepatitis C virus [HCV RNA]), or</li> <li>Anti-HCV screening-test-positive with a signal-to-cut-off ratio predictive of a true positive as determined for the particular assay (e.g., <math>\geq 3.8</math> for the enzyme immunoassays).</li> </ul> <p><i>Note for above:</i> New testing platform chemiluminescence immunoassay (VITROS anti-HCV assay) data not available yet to calculate signal-to-cut-off ratio.</p>	<i>Confirmed:</i> A case that meets the clinical case definition and is laboratory confirmed.
<b>Chronic Hepatitis C</b>	Most HCV infected persons are asymptomatic. However, many have chronic liver disease, which can range from mild to severe including cirrhosis and liver cancer.	<ul style="list-style-type: none"> <li>Anti-HCV positive (repeat reactive) by EIA, verified by an additional more specific assay (e.g., RIBA for anti-HCV or nucleic acid testing for HCV RNA), or</li> <li>HCV RIBA positive, or</li> <li>Nucleic acid test for HCV RNA positive, or</li> <li>Anti-HCV positive (repeat reactive) by EIA with a signal-to-cut-off ratio <math>\geq 3.8</math> (as this becomes available).</li> </ul>	<p><i>Probable:</i> A case that is anti-HCV positive (repeat reactive) by EIA and has alanine aminotransferase (ALT or SGPT) values above the upper limit of normal, but the anti-HCV EIA result has not been verified by an additional more specific assay <i>or</i> the signal-to-cut-off ratio is unknown.</p> <p><i>Confirmed:</i> A case that is laboratory confirmed and that does not meet the case definition for acute hepatitis C.</p>

Source: Centers for Disease Control & Council of State and Territorial Epidemiologists. (2005, September). *Guidelines for Viral Hepatitis Surveillance and Case Management*. Retrieved from the CDC website on September 29, 2005 from <http://www.cdc.gov/ncidod/diseases/hepatitis/resource/surveillance.htm#GenCA>

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