

## VIEWPOINT

# Updated CDC Recommendations for Universal Hepatitis C Virus Screening Among Adults and Pregnant Women

## Implications for Clinical Practice

**Peter L. Havens, MD, MS**

Department of Pediatrics, Medical College of Wisconsin, Milwaukee; and Children's Hospital of Wisconsin, Milwaukee.

**Jean R. Anderson, MD**

Department of Gynecology and Obstetrics, Johns Hopkins Medical Institutions, Baltimore, Maryland.

**Acute hepatitis C virus (HCV)** infections in the US have increased more than 3-fold since 2010.<sup>1</sup> In 2017, there were an estimated 44 700 cases of acute HCV infection in the US,<sup>2</sup> which is more than the 37 377 cases of HIV reported.<sup>3</sup> In addition, there are now more deaths annually from HCV infection than from HIV in the US<sup>2,3</sup>; in 2017, HCV infection accounted for 17 253 deaths<sup>2</sup> and HIV accounted for 15 971 deaths.<sup>3</sup> Deaths related to HCV infection are considered to be largely preventable because therapies are now readily available that can achieve virological cure (defined as undetectable HCV infection in the blood for  $\geq 12$  weeks after completing treatment, and referred to as a sustained virological response).

The identification and treatment of persons infected with HCV is imperative to prevent disease progression and associated morbidity and mortality, and to reduce HCV transmission. The development of newer and simpler treatment regimens means that all clinicians should be empowered to undertake treatment of patients with HCV infection in their practice because more than 95% of treatment-naïve patients can achieve

Patterns of opioid use have shifted the peak prevalence of persons with new chronic HCV infection from predominately older urban males from the baby boomer generation to a younger, more rural population composed almost equally of males and females. The higher proportion of women of childbearing age in this newer pattern of HCV epidemiology has led to a near doubling of HCV infection in women of childbearing age from 2006 to 2014,<sup>6</sup> with an estimated prevalence rate for HCV infection of 0.38% among pregnant women in 2015.<sup>7</sup> According to one estimate,<sup>8</sup> approximately 29 000 women with HCV infection gave birth to 1700 infants with HCV infection each year between 2011 and 2014.

The CDC recommendation<sup>1</sup> for universal HCV screening at least once for all adults aged 18 years or older should be fully adopted. The recommendation is consistent with the recommendations already made by the American Association for the Study of Liver Diseases (AASLD), the Infectious Diseases Society of America (IDSA), the Indian Health Service, and the recent US Preventive Services Task Force (USPSTF).<sup>8</sup>

The overall US prevalence rate for HCV infection is estimated to be 1%. However, some jurisdictions may have a prevalence rate for HCV infection that is lower than the 0.1% threshold for cost-effective testing. In these jurisdictions, the CDC guidelines give local practitioners and public health authorities significant leeway to make screening recommendations that are responsive to local circumstances and include

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a sustained virological response with 8 to 12 weeks of oral, well-tolerated, pangenotypic direct-acting antiviral regimens. Elimination of HCV infection by 2030, a current World Health Organization goal, is a realistic objective.

The US Centers for Disease Control and Prevention (CDC) has published revised recommendations for universal HCV screening<sup>1</sup> stating that (1) all persons aged 18 years or older should be screened at least once and (2) all pregnant women should be screened during each pregnancy. In both populations, clinicians might choose to not screen if the local prevalence rate for HCV infection is 0.1% or lower. These recommendations are based on extensive literature review, cost-effectiveness analyses, and the recognition that risk-based screening fails to identify all persons with HCV infection.<sup>1</sup> The new universal screening recommendations augment prior risk factor screening approaches,<sup>4,5</sup> and will likely increase the number of persons living with HCV infection who are identified and treated.

a threshold below which universal screening might not be adopted. However, some settings or geographic areas with low prevalence rates for HCV infection could prioritize HCV elimination in their populations, implement screening, and could potentially negate the need for indefinite screening. In addition, jurisdictions that adopt universal screening may discover the local prevalence rate for HCV infection is higher than previously documented.

The recommendation to screen women for HCV infection during pregnancy may be more controversial. Although the AASLD, the IDSA, and the USPSTF also recommend universal screening for pregnant women, the AASLD and the IDSA do not address screening during subsequent pregnancies. The USPSTF suggests expanding the age range for universal 1-time screening to include pregnant persons "younger than 18 years."<sup>8</sup> Although Kentucky has passed a law mandating universal HCV screening of pregnant women, the American

#### Corresponding

**Author:** Peter L. Havens, MD, MS, Department of Pediatrics, Medical College of Wisconsin, 8701 Watertown Plank Rd, PO Box 26509, Ste 3093, Milwaukee, WI 53226 (phavens@mcw.edu).

College of Obstetricians and Gynecologists and the Society for Maternal-Fetal Medicine continue to recommend only risk-based screening; such recommendations from specialty organizations often carry substantial weight with clinicians.

During pregnancy, women have frequent interactions with the health care system. The addition of HCV screening to routine screening for other infections such as HIV and hepatitis B virus may reduce the stigma associated with targeted HCV screening. Identification of HCV infection during pregnancy may alter approaches to certain obstetrical procedures to reduce the risk of perinatal HCV transmission (such as avoidance of chorionic villus sampling, internal fetal monitoring, prolonged membrane rupture during labor, and episiotomy).<sup>9</sup>

The diagnosis of HCV infection during pregnancy may also facilitate identification of substance use disorder and allow clinicians to address ongoing issues related to substance use disorder during and after pregnancy to improve mother and infant health. However, substance use disorder during pregnancy is often met with judgmental and confrontational approaches,<sup>10</sup> including involvement of child protective services, which may discourage maternal acceptance of screening. Practitioners need to be sensitive to the complex web of issues this raises. There is a need for legal and ethical guidelines in this area.

Treatment with direct-acting antivirals is not currently recommended during pregnancy and this practice of nontreatment provides a potential counterargument to universal HCV screening during pregnancy. Studies are ongoing to assess the safety and efficacy of direct-acting antiviral use in pregnant women (NCT02683005). If safety and efficacy are established, treatment of HCV infection during pregnancy could offer potential advantages. For instance, the adherence and completion of HCV therapy may be optimized with integration into prenatal care because most women have access to health insurance during pregnancy, which may be lost after the postpartum period.

Even in the absence of treatment during pregnancy, identification of active HCV infection during pregnancy allows linkage to follow-up and treatment of the mother after delivery, screening of exposed infants, and treatment of infected children. Direct-acting

antivirals are approved by the US Food and Drug Administration for children aged 3 years or older.

To identify infants with perinatally acquired HCV infection, guidelines from the AASLD and the IDSA state that testing with an HCV-RNA assay can be considered as early as 2 months of age. All children born to women with HCV infection should be tested using an antibody-based test at or after 18 months of age to document seroreversion (ie, loss of passively acquired maternal antibody against HCV).

The recommendation for universal screening of all adults allows identification of women who have HCV infection and are planning pregnancy, with the ability to treat these women and achieve a sustained virological response prior to conception. Implementation of universal HCV screening will challenge clinicians and health systems. A positive screening result for hepatitis C antibody needs to be followed up with HCV-RNA testing to identify patients with active HCV infection. Laboratories will need to build and offer this reflex sequence of tests. Electronic health records will need to be altered to include a test code for reflex HCV-RNA testing, and appropriately revised order sets for general screening and screening during pregnancy.

Prenatal screening of the mother will need to be linked to the infant's electronic health record to guide appropriate infant testing and treatment. Laboratories may be unwilling to perform the polymerase chain reaction test from the same sample as the antibody screening, and may require a second tube of blood with increased laboratory costs for accession and storage. There will also be resistance to change that necessitates new education for clinicians and may involve more time for the counseling of patients, especially as long as specialty societies do not concur with the new recommendations. Conversely, standardization of practices for most of the country could potentially allow economies of scale, as well as ongoing surveillance.

While debate among specialty societies continues, practitioners should implement the new CDC recommendations for universal HCV screening at least once in all adults and during each pregnancy. Risk-based screening is ineffective. Universal screening is cost-effective. Relevant specialty societies should consider reevaluation of their HCV screening guidelines.

#### ARTICLE INFORMATION

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#### REFERENCES

- Schillie S, Wester C, Osborne M, Wesolowski L, Ryerson AB. CDC recommendations for hepatitis C screening among adults—United States, 2020. Accessed April 9, 2020. [https://www.cdc.gov/mmwr/volumes/69/rr/rr6902a1.htm?s\\_cid=rr6902a1\\_w](https://www.cdc.gov/mmwr/volumes/69/rr/rr6902a1.htm?s_cid=rr6902a1_w)
- US Centers for Disease Control and Prevention. Viral hepatitis surveillance—United States, 2017. Accessed March 3, 2020. <https://www.cdc.gov/hepatitis/statistics/2017surveillance/index.htm>
- US Centers for Disease Control and Prevention. HIV surveillance report, 2018 (preliminary). Accessed March 3, 2020. <https://www.cdc.gov/hiv/library/reports/hiv-surveillance.html>
- Centers for Disease Control and Prevention. Recommendations for prevention and control of hepatitis C virus (HCV) infection and HCV-related chronic disease. *MMWR Recomm Rep*. 1998;47(RR-19):1-39.
- Smith BD, Morgan RL, Beckett GA, et al. Recommendations for the identification of chronic hepatitis C virus infection among persons born during 1945-1965. Published correction appears in *MMWR Recomm Rep*. 2012;61(43):886. *MMWR Recomm Rep*. 2012;61(RR-4):1-32.
- Ly KN, Jiles RB, Teshale EH, Foster MA, Pesano RL, Holmberg SD. Hepatitis C virus infection among reproductive-aged women and children in the United States, 2006 to 2014. *Ann Intern Med*. 2017;166(11):775-782. doi:10.7326/M16-2350
- Schillie SF, Canary L, Koneru A, et al. Hepatitis C virus in women of childbearing age, pregnant women, and children. *Am J Prev Med*. 2018;55(5):633-641. doi:10.1016/j.amepre.2018.05.029
- Owens DK, Davidson KW, Krist AH, et al; US Preventive Services Task Force. Screening for hepatitis C virus infection in adolescents and adults: US Preventive Services Task Force Recommendation Statement. *JAMA*. 2020;323(10):970-975. doi:10.1001/jama.2020.1123
- Hughes BL, Page CM, Kuller JA; Society for Maternal-Fetal Medicine (SMFM). Hepatitis C in pregnancy: screening, treatment, and management. *Am J Obstet Gynecol*. 2017;217(5):B2-B12. doi:10.1016/j.ajog.2017.07.039
- Terplan M, Kennedy-Hendricks A, Chisolm MS. Prenatal substance use: exploring assumptions of maternal unfitness. *Subst Abuse*. 2015;9(S-2)(suppl 2):1-4.