

Screening for HCV Infection in Jails

Anne C. Spaulding, MD, MPH

David L. Thomas, MD, MPH

JAILS ARE AN IDEAL SETTING FOR ROUTINE HEPATITIS C virus (HCV) screening. At the turn of this century, the Centers for Disease Control and Prevention estimated that 16% to 41% of US inmates had serological evidence of prior HCV exposure and 12% to 35% had chronic infection.¹ This high prevalence of hepatitis C, coupled with the fact that more than 7 million individuals passed through jails and prisons each year in the late 1990s, suggested that persons released from the criminal justice system may account for up to 29% to 43% of the 2.7 million to 3.9 million persons infected with hepatitis C in the United States.^{1,2}

Most inmates with chronic hepatitis C are not aware of their infection. Although exact data on recognition of infection are not available, even in the US general population, only 25% to 35% of persons infected with HCV are aware of their condition.² In recent years, 9 million unique individuals enter and leave jails yearly and an additional 1.5 million persons spent an entire year in prison.³ If, conservatively, 12% are infected with HCV, and because in marginalized populations those who are unaware of infection would likely be closer to 75% rather than 65%, then it is possible that as many as 1.0 million persons with undiagnosed HCV infection might come in contact with the correctional system each year.

According to US Supreme Court case law in *Estelle v Gamble* (429 US 97 [1976]), correctional facilities cannot display deliberate indifference to the health care needs of their residents. Thus, some HCV care has been provided in the correctional systems. However, because HCV therapy may last for up to 48 weeks, the infection could realistically only be treated in approximately 1% of incarcerated persons, according to modeling using parameters derived from a combined jail-prison correctional system.⁴ Finding hepatitis C among convicted persons with long sentences carries ethical obligations to treat appropriate candidates once the diagnosis is confirmed. The difference between those who could be potentially treated compared with those infected occurs because in short-term correctional facilities the median length of stay is 48 hours and jail detainees account for 95% of the persons incarcerated in and released

from correctional facilities.³ The majority of persons entering a correctional facility during a given year stay for less than 12 months. Because treatment could not realistically be provided for short-term inmates, HCV screening has not been routinely conducted in jails, an omission that may represent a missed opportunity to identify persons with undiagnosed HCV infection.

Recognition of HCV infection matters. In May 2011, the US Food and Drug Administration approved 2 new, direct acting agents for treatment of genotype 1 chronic HCV infection. When used with the former standard of care (peginterferon and ribavirin), boceprevir or telaprevir increases cure rates by 20% to 30%. In addition, 40% to 60% of individuals will be able to abbreviate treatment substantially with the new drugs.⁵ A recent study suggested that HCV treatment can be effectively provided in community settings. Project ECHO (Extension for Community Health Care Outcomes) offers a model to increase availability of hepatitis treatment not just in prisons but also in publicly funded community health centers so that the incarcerated setting is not the only place in which an indigent person can access care.⁶ With the advent of "all oral" HCV treatments in the future, treatment feasibility and effectiveness will increase further, thus amplifying the public health importance of expanded HCV detection in jails.⁷

Recognition of HCV infection in a rapidly changing environment is possible. In February 2011, the US Food and Drug Administration approved a rapid fingerstick HCV test; a waiver that would allow its use in jails and other facilities without laboratory licensure was granted in November 2011. Thus, the HCV assay can be performed in 20 minutes on jail entrants, using point of care, opt-out testing strategies, that have been proven successful for HIV testing among inmates.⁸ Following opt-out hepatitis C screening in jails, downstream health care can be coordinated between jails, prisons, and the community. In a demonstration project designed to integrate opt-out HIV screening with other medical services, including hepatitis C testing, at the Fulton County, Georgia, jail, persons with positive test results were referred to

Author Affiliations: Rollins School of Public Health, Emory University, Atlanta, Georgia (Dr Spaulding); and Johns Hopkins University School of Medicine, Baltimore, Maryland (Dr Thomas).

Corresponding Author: Anne C. Spaulding, MD, MPH, Rollins School of Public Health, Emory University, 1518 Clifton Rd, Room 3033, Atlanta, GA 30033 (aspauld@emory.edu).

a public hepatitis clinic integrated into the primary care services of Atlanta's Grady Memorial Hospital. This project is consistent with the Department of Health and Human Services Action Plan for the Prevention, Care, and Treatment of Viral Hepatitis,⁹ which calls for improved access to hepatitis treatment in primary care settings. In addition, the Affordable Care Act will eventually provide a mechanism for funding the care of persons whose HCV infection is identified in jails and who are released subsequently.

There are challenges to widespread implementation of HCV screening in short-term and long-term correctional facilities. Provision of medical screening and treatment is not the primary mission of correctional facilities. Jails are challenged with high throughput and entrants may have insufficient time for the counseling and confirmatory testing that are optimal in HCV screening programs. HCV screening and the coordination of care with existing health care facilities will require funding, although the economic benefits of HCV screening are long-term and may be realized by different state or federal agencies than those asked to fund the programs.

These challenges can be overcome and HCV screening could be implemented routinely in jails. Focusing efforts on detainees with a high pretest probability of having hepatitis C can decrease the number of tests that would need to be performed to find these infected persons.¹ Directing HCV testing to persons born between 1945 and 1965, the birth cohort that includes an estimated two-thirds of those individuals currently infected with HCV in the United States, and following diagnosis with treatment using direct acting agents, has been shown to be cost-effective in community clinical settings.¹⁰ Concentrating on the 1945-1965 birth cohort in the correctional setting should likewise optimize the yield of HCV screening programs.

Thus, implementation of opt-out HCV screening should be considered for persons incarcerated in jails. If 70% of the approximately 1 million persons with hepatitis C who are in correctional facilities are offered the opportunity to have HCV testing, and if 70% accept such an offer, HCV screening in detainees may lead to the identification of as many

as a half million new cases of hepatitis C in the first year of the program. Coupled with counseling and referral for treatment if released, such programs could have enormous effects on the HCV epidemic in the United States. With new treatments and new diagnostics, local public health agencies should invite jails to partner in hepatitis C screening.

Conflict of Interest Disclosures: Both authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Dr Thomas reported serving on a scientific advisory board and received drugs for a National Institutes of Health clinical trial from Merck and receiving drugs for a clinical trial from Gilead. Dr Spaulding reported no disclosures.

Funding/Support: This work was supported in part by grant DA R01 016078 from the National Institutes of Health, National Institute on Drug Abuse (Dr Thomas).

Role of the Sponsor: The National Institutes of Health had no role in the preparation, review, or approval of the manuscript.

Additional Contributions: Lesley Miller, MD (Medical Director of the Grady Liver Clinic, Atlanta, Georgia), and Chava Bowden, BS (Project Coordinator for the Integrating Infectious Disease Detection at Entry and Linkage Program, Fulton County Jail, Atlanta, Georgia), provided an inspiring example of how a public hospital's hepatitis clinic could partner with a jail screening program. For this article, they received no compensation.

REFERENCES

- Weinbaum C, Lyerla R, Margolis HS; Centers for Disease Control and Prevention. Prevention and control of infections with hepatitis viruses in correctional settings. *MMWR Recomm Rep.* 2003;52(RR-1):1-36.
- Colvin HM, Mitchell AE. Hepatitis and liver cancer: a national strategy for prevention and control of hepatitis B and C. <http://www.cdc.gov/hepatitis/PDFs/IOM-HepatitisAndLiverCancerReport.pdf>. Accessed June 14, 2010.
- Spaulding AC, Seals RM, Page MJ, Brzozowski AK, Rhodes W, Hammett TM. HIV/AIDS among inmates of and releasees from US correctional facilities, 2006: declining share of epidemic but persistent public health opportunity. *PLoS One.* 2009;4(11):e7558. doi:10.1371/journal.pone.0007558.
- Spaulding A, Greene C, Davidson K, Schneidermann M, Rich J. Hepatitis C in state correctional facilities. *Prev Med.* 1999;28(1):92-100.
- Ghany MG, Nelson DR, Strader DB, Thomas DL, Seeff LB; American Association for Study of Liver Diseases. An update on treatment of genotype 1 chronic hepatitis C virus infection: 2011 practice guideline by the American Association for Study of Liver Diseases. *Hepatology.* 2011;54(4):1433-1444.
- Arora S, Thornton K, Murata G, et al. Outcomes of treatment for hepatitis C virus infection by primary care providers. *N Engl J Med.* 2011;364(23):2199-2207.
- Lok AS, Gardiner DF, Lawitz E, et al. Preliminary study of two antiviral agents for hepatitis C genotype 1. *N Engl J Med.* 2012;366(3):216-224.
- Flanigan TP, Zaller N, Beckwith CG, et al. Testing for HIV, sexually transmitted infections, and viral hepatitis in jails: still a missed opportunity for public health and HIV prevention. *J Acquir Immune Defic Syndr.* 2010;55(suppl 2):S78-S83. doi:10.1097/QAI.1090b1013e3181fbc1094f.
- US Dept of Health & Human Services. Combating the silent epidemic of viral hepatitis: action plan for the prevention, care and treatment of viral hepatitis. <http://www.hhs.gov/ash/initiatives/hepatitis/>. Accessed February 22, 2012.
- Rein DB, Smith BD, Wittenborn JS, et al. The cost-effectiveness of birth-cohort screening for hepatitis C antibody in U.S. primary care settings. *Ann Intern Med.* 2012;156(4):263-270.