

HCV prevalence estimates among incarcerated persons

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Hofmeister identified populations with heightened HCV prevalence, including 2.1M individuals incarcerated 12/31/16(1), estimating this population's HCV prevalence at 9.5x that of householders surveyed by the National Health and Nutrition Epidemiology Survey (NHANES). Yearly, the US incarcerates 10M; subtracting 2.1M incarcerated persons leaves 7.9M in the NHANES frame who were recently released from prison/jail prior to the one-day count (3% of all US adults). National surveys face challenges—declining response rates, response bias, low participation by highly-mobile/disadvantaged populations (2)—that suggest the paper underestimated the true HCV prevalence among needy groups.

The NHANES sampling frame includes housed formerly incarcerated persons. By oversampling minority men and the poor, both over-represented among releasees, its sample should include this group. However, NHANES lacks flags identifying releasees, and cannot test assumptions

about equivalent HCV prevalence and nonresponse rates. NHANES could under-survey the formerly incarcerated because of: **1. Mobility:** Releasees' "legal" addresses can change daily(3) lowering likelihood of inclusion in NHANES-selected households. **2. Non-response:** 60% contend with addiction, psychiatric illness, or both;(3); many have challenges in transportation to NHANES examination centers;(3) and **3. Trust:** If under supervision or involved in illegal activity, releasees may distrust government representatives, despite assurances of confidentiality. While NHANES sample weights account for various sources of nonresponse, estimates would be biased if respondents differ from non-respondents in HCV prevalence and the weights do not account for these subgroup differences. Hypothetically, if half of releasees did not respond and had HCV prevalence midway between the incarcerated and general population, Hofmeister's estimate would be several hundred thousand below the true prevalence.

We also question methods determining correctional HCV prevalence. Authors report using PubMed-listed publications reflecting 2013-2016 NHANES cycles; Varan 2014 contains data from the same era as Cocoros 2014 (study 2, Table 3) but was excluded.(4) North Carolina data from study 6, were included; its South Carolina jail data were omitted without explanation. Authors said studies "sampling higher-risk subpopulations selectively were excluded." Yet Akiyama (study 1,) targeted higher-risk subpopulations; it should have been excluded.

While national surveys demonstrate heterogeneous HCV distribution geographically, authors assumed homogeneity across prison systems.(4) Because of this heterogeneity, sampled prisons should be weighted by their representation among all incarcerated persons.(4) Attributing viremia likelihood in studies 1, 3, and 4 based on the partially treated free-world population (57.5%) rather than correctional studies 2, 5-7, underestimates cases. Overall, the paper paints a picture of progress towards eliminating HCV, not aligning with realities of prison HCV management.(5) As America faces the opioid epidemic, fueling more HCV transmission, it behooves us to characterize better the treatment of justice-involved persons.

1. Hofmeister MG et al. Estimating Prevalence of HCV Infection in the US, 2013-2016. *Hepatology*. 2018.
2. Galea S, Tracy M. Participation rates in epidemiologic studies. *Ann Epidemiol*. 2007;17(9):643-53.
3. Western B et al., Stress and hardship after prison. *American journal sociology*. 2015;120(5):1512-47.
4. Varan A et al. Hepatitis C seroprevalence among prison inmates since 2001. *PHR* 2014;129(2):187-95.
Updated: hepCorrections.org.
5. Alcorn T. Hepatitis C Drugs Save Lives... Sick Prisoners Aren't Getting Them. *NYT* 3/15/18.
<https://www.nytimes.com/2018/03/15/us/hepatitis-c-drugs-prisons.html>.

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