



HHS Public Access

Author manuscript

Popul Health Manag. Author manuscript; available in PMC 2024 March 11.

Published in final edited form as:

Popul Health Manag. 2021 December ; 24(6): 651–653. doi:10.1089/pop.2021.0053.

Health Insurance Status of Adults with Hepatitis in the United States: Implications of Results from the National Health Interview Survey, 2013–2018

Greta A. Kilmer, MS,

Kathleen N. Ly, MPH,

Anne C. Moorman, MPH

Division of Viral Hepatitis, National Center for HIV, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention, Atlanta, Georgia, USA.

Keywords

hepatitis; insurance coverage; Medicaid; poverty; uninsured

THE RECENTLY RELEASED US *Viral Hepatitis National Strategic Plan: A Roadmap to Elimination* designed to achieve disease elimination goals for 2021–2025¹ promotes screening to identify and treatment for the more than 3 million Americans with hepatitis B or C. Chronic hepatitis B and C together comprise a significant proportion of all hepatitis diagnoses in the United States given the current estimates of nearly 900,000 infected with chronic hepatitis B and 2.4 million infected with chronic hepatitis C, with new hepatitis C infections related to the opioid epidemic on the rise. Guidance from the US Centers for Disease Control and Prevention (CDC) updated in 2020 now recommends a universal 1-time hepatitis C virus (HCV) test for all adults as well as testing during each pregnancy.²

Drug costs and insurance policies in the United States impact treatment access and uptake. Treatment is recommended for almost all persons with HCV.¹ Although all patients with chronic hepatitis B should be monitored, treatment eligibility is based on viral load, transaminase level, and phase of liver disease; insured hepatitis B patients incurred treatment-related costs between \$1000–\$100,000 per year during 2004–2015.³ To

Address correspondence to: Anne C. Moorman, MPH, Division of Viral Hepatitis, National Center for HIV, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention, 1600 Clifton Road NE, Mailstop US 12-3, Atlanta, GA 30333, USA, amoorman@cdc.gov.

Authors' Contributions

Ms. Kilmer participated in developing the study concept and design, data acquisition, conducting the statistical analysis, interpretation of data, and drafting and revision of the manuscript.

Ms. Ly participated in developing the study concept and design, interpretation of data, and drafting and critical revision of the manuscript for important intellectual content.

Ms. Moorman participated in developing the study concept and design, interpretation of data, drafting and critical revision of the manuscript for important intellectual content.

Author Disclosure Statement

The authors declare that there are no conflicts of interest.

Supplementary Material

Supplementary Figure S1

Supplementary Table S1

contain costs for hepatitis C, many insurance providers added treatment eligibility and pre-authorization requirements, which have resulted in delayed or missed opportunities for treatment.⁴ For example, in 2019 more than one quarter of state Medicaid programs required evidence of liver damage, and the majority still had drug and alcohol sobriety restrictions.⁵

Our analysis sought to determine patterns of insurance during 2013–2018 among adults with hepatitis from US nationally representative National Health Interview Survey (NHIS) data. NHIS data collection has been approved by the US National Center for Health Statistics Research Ethics Review Board and analysis of de-identified data is exempt from federal regulations for the protection of human research participants. Detailed information is available at: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2018/srvydesc.pdf. NHIS includes a survey question asking respondents about ever receiving a diagnosis of hepatitis without further specification, among other common chronic health conditions. For analytic comparison adults with other types of chronic conditions, including diabetes, coronary heart disease, stroke, chronic obstructive pulmonary disease, hypertension, arthritis, and cancer, were grouped together. Adults with no chronic conditions comprised another comparison group. Because most US citizens are eligible for Medicare health care coverage at age 65 years, our analysis was restricted to adults aged 18–64 years ($n = 141,826$). After trends were analyzed, we examined patterns in the 2018 data ($n = 18,047$). Analyses were conducted using SAS version 9.4 (SAS Institute Inc., Cary, NC) and SUDAAN version 11.0.1 (RTI International, Research Triangle Park, NC), and accounted for the multistage, clustered sampling design, unequal probabilities of selection and nonresponse, and post stratification to the US population. Weighted proportions ensure results represent the US population.

Among all persons reporting hepatitis, the uninsured proportion was 10.3% in 2018 (Figure 1), reflecting a significant decrease over time (trend test $P < 0.05$) from 17.7% in 2013 (Supplementary Fig S1 panel A, available with the article online). For comparison, this proportion also decreased significantly for those with other measured chronic health conditions (16.4% to 9.8%), and among those with none of the measured chronic health conditions (22.3% to 14.9%).

The proportion uninsured in 2018 was lower for those reporting hepatitis than those with no chronic health conditions; however, this difference was not significant after accounting for the younger age among those with no chronic health conditions compared to the age of those with hepatitis (Supplementary Table S1). Just under half (45.8%) of those aged 18–64 who were ever diagnosed with hepatitis were born between 1945–1965. Independent of age, those with hepatitis were more likely to have Medicaid or Medicare (22.6%, 12.9%), compared to those with other chronic health conditions (14.6%, 7.9%) or those with no chronic health conditions (11.0%, 1.4%). Compared to adults with other chronic health conditions in 2018, those with hepatitis were less likely to be non-Hispanic White (57.5% vs 66.2%) or Black (10.0% vs 14.1%), and more likely to be Hispanic (20.3% vs 13.6%) or Asian (10.9% vs 4.5%). Compared to adults with no chronic conditions, those with hepatitis had a higher mean age (49.7 vs 36.4 years) and were more likely to live below 100% of the poverty level (14.6% vs 10.4%).

In 2018, 16.8% of those with hepatitis were insured with Medicaid alone (Figure 1) reflecting an increase from 12.1% in 2013 (Supplementary Fig S1 panel B). Compared to adults with no other chronic health conditions, those with hepatitis were significantly more likely to have Medicaid alone. The proportion with Medicaid alone also was higher for those with hepatitis compared to adults with other chronic health conditions. Among the 53.0% with hepatitis who had private insurance only in 2018, 56.5% had a high-deductible health plan and among these 58.0% had a health savings or health reimbursement account.

As the nation makes progress toward increasing identification of persons with chronic viral hepatitis,¹ the challenge of providing quality medical care and treatment at a reasonable cost emerges. We found that half of adults aged 18–64 years who were ever diagnosed with hepatitis fell into the ‘baby boomer’ cohort, for whom liver disease may be long term and advanced, leading to urgent treatment needs to avoid high morbidity and costs. Younger adults who acquired hepatitis B or hepatitis C related to the opioid crisis should be treated now to prevent disease transmission and long-term organ damage.

Compared with other chronic conditions and independent of age, in our analysis adults ever diagnosed with hepatitis were more likely to be covered by Medicaid and living below 100% of the federal poverty level, and more than 1 in 6 were on Medicaid alone in 2018. Even when insured, those with hepatitis C may be denied treatment because they do not meet additional insurance eligibility restrictions for treatment,^{4,5} and those with hepatitis B may not receive recommended disease monitoring.⁶ Specialty provider clinics that serve uninsured, underinsured, and low-income individuals are limited and may have long wait lists. High-deductible plans, held by more than half of those with private insurance, may be cost prohibitive for hepatitis treatment, particularly given the proportion of adults with hepatitis living below poverty level.⁷

Several limitations should be considered carefully when interpreting the results. First, misclassification may have occurred if the participant incorrectly recalled insurance type or hepatitis diagnosis. Second, NHIS questions about hepatitis do not distinguish between different types of hepatitis or if the condition has resolved. However, seroprevalence data representative of the general noninstitutionalized US population indicate that 1.0% had current hepatitis C (1.5% with past or current) in 2013–2016⁸ and 0.36% had current hepatitis B infection in 2011–2016.⁹ Given that this study estimates 2.3% of adults aged 18–64 years reported some type of lifetime hepatitis (data not shown), it would follow that the vast majority were reporting chronic hepatitis B or C. Finally, certain populations not represented in NHIS are likely to have both a high prevalence of viral hepatitis and reduced access to insurance, such as persons who are homeless, incarcerated, or inpatients in drug treatment facilities.¹⁰

While these US nationally representative data indicate that insurance access improved during 2013–2018 for adults aged 18–64 years who were ever diagnosed with hepatitis, 1 in 10 remained uninsured. In 2018, Medicaid and high-deductible health plans were essential sources of insurance for adults with hepatitis. Lack of insurance, high costs, and insurance restrictions regarding treatment and monitoring where they exist may present significant barriers to meeting US viral hepatitis elimination goals.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Funding Information

This work was supported by the US Centers for Disease Control and Prevention. The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the CDC.

References

1. United States (U.S.) Department of Health and Human Services. Viral Hepatitis National Strategic Plan for the United States: A Roadmap to Elimination (2021–2025) Washington, DC. 2020. <https://www.hhs.gov/sites/default/files/Viral-Hepatitis-National-Strategic-Plan-2021-2025.pdf> Accessed February 10, 2021.
2. Schillie S, Wester C, Osborne M, Wesolowski L, Ryerson AB. CDC Recommendations for hepatitis C screening among adults—United States, 2020. *MMWR Recomm Rep* 2020;69:1–17. [PubMed: 32271723]
3. Nguyen MH, Burak Ozbay A, Liou L, et al. Healthcare resource utilization and costs by disease severity in an insured national sample of U.S. patients with chronic hepatitis B. *J Hepatol* 2019;70:24–32. [PubMed: 30287341]
4. Wong RJ, Jain MK, Therapondos G, et al. Race/ethnicity and insurance status disparities in access to direct acting antivirals for hepatitis C virus treatment. *Am J Gastroenterol* 2018;113: 1329–1338. [PubMed: 29523864]
5. National Viral Hepatitis Roundtable; Center for Health Law and Policy Innovation, Harvard Law School. Hepatitis C: State of Medicaid Access <https://stateofhepc.org/> Accessed February 11, 2021.
6. Spradling PR, Xing J, Rupp LB, et al. Infrequent clinical assessment of chronic hepatitis B patients in United States general healthcare settings. *Clin Infect Dis* 2016;63:1205–1208. [PubMed: 27486115]
7. Massachusetts Medical Society. Assessment of the Impact of High-Deductible Health Plans on Patient Health and the Financial Impact on Medical Practices 2017. www.massmed.org/News-and-Publications/Research-and-Studies/High-Deductible-White-Paper-2017/ Accessed February 10, 2021.
8. Hofmeister MG, Rosenthal EM, Barker LK, et al. Estimating prevalence of hepatitis C virus infection in the United States, 2013–2016. *Hepatology* 2019;69:1020–1031. [PubMed: 30398671]
9. Patel EU, Thio CL, Boon D, et al. Prevalence of hepatitis B and hepatitis D virus infections in the United States, 2011–2016. *Clin Infect Dis* 2019;69:709–712. [PubMed: 30605508]
10. Edlin BR, Eckhardt BJ, Shu MA, Holmberg SD, Swan T. Toward a more accurate estimate of the prevalence of hepatitis C in the United States. *Hepatology* 2015;62:1353–1363. [PubMed: 26171595]

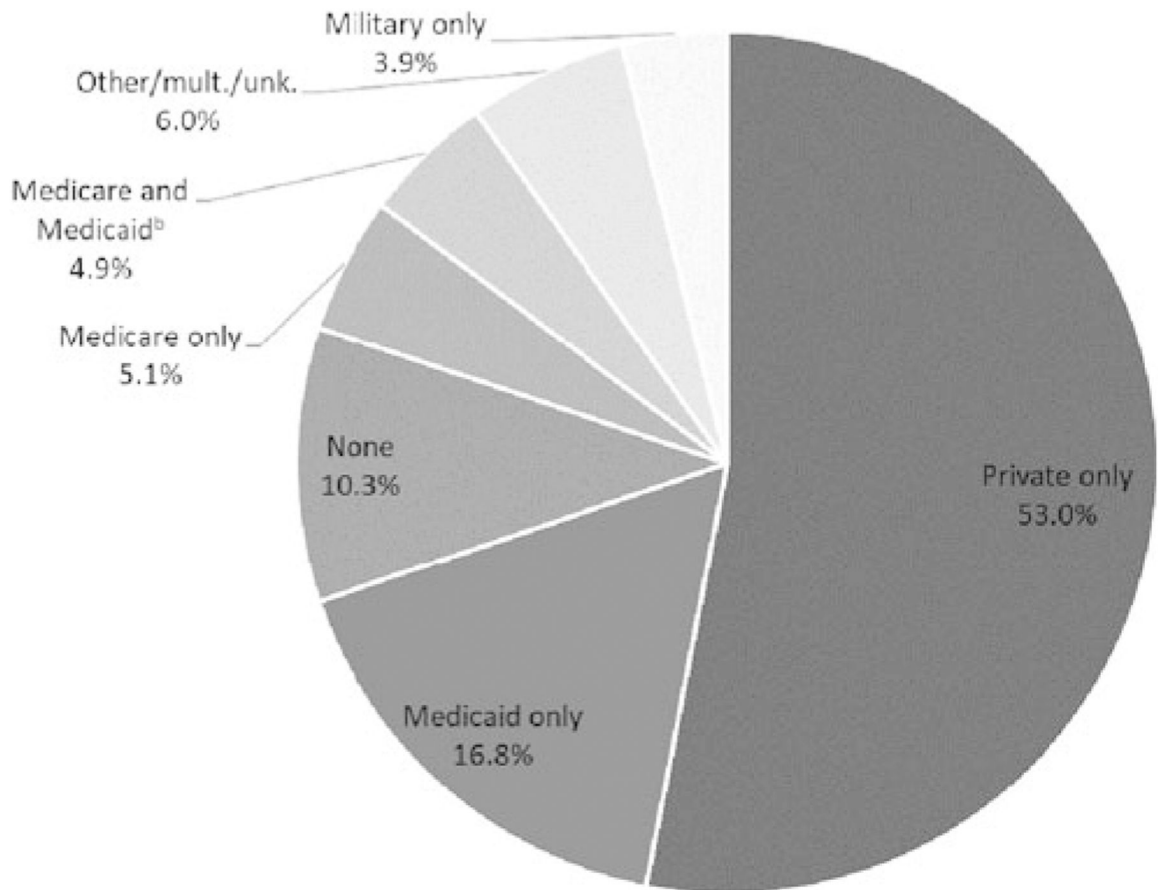


FIG. 1. Types of insurance^a among adults aged 18–64 years who were ever diagnosed with hepatitis: United States, 2018.

^aInsurance types are mutually exclusive. In the coding hierarchy, those who were uninsured or only had 1 type of insurance were considered first, followed by those with both Medicare and Medicaid (may have had additional types of insurance). The remainder were considered together and consisted of other/multiple/unknown coverage types. Respondents with missing insurance status (less than 1%) are not included.

^bMay have additional types of insurance.