

Hepatitis C Screening in an Underserved U.S. Cohort of Reproductive Age Women

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The opioid epidemic has recently increased the rates of hepatitis C virus (HCV) infection among young women. We therefore aimed to characterize the cascade of HCV care in a cohort of underserved women of reproductive age. Medical records of 19,121 women between the ages of 15 and 44 years, receiving primary care in the San Francisco safety-net health care system, were reviewed. Cohort characteristics were as follows: median age 33 years (interquartile range 26-38), 18% white (12% black, 46% Latina, 22% Asian, 2% other race), 1.3% hepatitis B surface antigen (HBsAg)-positive, and 0.9% human immunodeficiency virus (HIV) co-infection. HCV antibody (HCVAb) testing occurred in 38.7% (n = 7,406), of whom 2.8% (n = 206) were HCVAb-positive and 2.4% (n = 177) had a detectable HCV viral load. Of the 5% (n = 1,017) with a history of pregnancy, 61% (n = 615) had HCVAb testing (2.6% were positive). On multivariable analysis, HBsAg testing (odds ratio [OR] 8.25 [95% confidence interval (CI)] 6.80-10.01; $P < 0.001$), HIV infection (OR 5.98 [95% CI 1.86-19.20]; $P = 0.003$), and log alanine aminotransferase (ALT) (OR 1.30 [95% CI 1.16-1.45]; $P < 0.001$) were associated with HCV screening. Compared with whites, women of Latina (OR 0.45 [95% CI 0.37-0.55]; $P < 0.001$) and Asian (OR 0.74 [95% CI 0.58-0.94]; $P = 0.01$) race were less likely to receive HCV screening. Age (OR 1.80 per decade [95% CI 1.26-2.57]; $P = 0.001$), white race (versus non-white; OR 10.48 [95% CI 7.22-15.21]; $P < 0.001$), HIV infection (OR 3.25 [95% CI 1.40-7.55]; $P = 0.006$), and log ALT (OR 1.93 [95% CI 1.49-2.49]; $P < 0.001$) were associated with HCVAb positivity. *Conclusion:* Most (>60%) underserved women of reproductive age were not tested for HCV. Moreover, women of Latina and Asian race were less likely to receive HCV screening. Given the known high HCV risk in the underserved population, targeted interventions, especially for racial minority women of reproductive age, are needed to enhance HCV screening in those at risk. (*Hepatology Communications* 2019;3:1183-1190).

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The opioid epidemic and its associated rise in hepatitis C virus (HCV) infections have led to recent challenges in HCV eradication among younger adults in the United States. Between 2004 and 2014, national incidence rates of HCV have increased 133% across all age, gender, and racial

groups, but most dramatically among adults between the ages of 18 and 39 years.⁽¹⁾ The rise in opioid use has been particularly detrimental to women of reproductive age, with their rates of HCV infection doubling from 2006 to 2014.⁽²⁾ In another report, women of reproductive age saw a 36% increase in HCV positivity from 2011 to 2016.⁽³⁾ This rise in HCV infection has in turn led to increased rates of vertical transmission of HCV to infants,⁽⁴⁾ and given this

Abbreviations: AASLD, American Association for the Study of Liver Diseases; ALT, alanine aminotransferase; AST, aspartate aminotransferase; CI, confidence interval; HBsAb, hepatitis B virus surface antibody test; HBsAg, hepatitis B virus surface antigen test; HBV, hepatitis B virus; HCV, hepatitis C virus; HCVAb, hepatitis C virus antibody test; HCVRNA, hepatitis C virus viral load; HIV, human immunodeficiency virus; IDSA, Infectious Diseases Society of America; IQR, interquartile range; OR, odds ratio; SVR, sustained virological response.

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and the opportunity to engage young women receiving perinatal care, the American Association for the Study of Liver Diseases (AASLD) and the Infectious Diseases Society of America (IDSA) recently recommended universal screening for HCV in pregnancy. Furthermore, AASLD already recommends treating HCV-infected reproductive age women before considering pregnancy.⁽⁵⁾ Thus, early identification of HCV infection and treatment among at-risk young women with reproductive potential will likely have a significant impact on reducing HCV burden and is important to HCV elimination efforts.

Underserved women of reproductive age may face additional disparities related to HCV infection. Studies have shown that most underserved patients with HCV infection have a history of injection drug use, and a large proportion also suffer from mental health disorders that may affect their engagement with medical care.^(6,7) In addition, HCV prevalence is higher among women with government-based health insurance, the most prominent insurance among the underserved, compared with those with private insurance.^(2,3) Minority groups also represent a significant proportion of this population, and there may be language barriers that influence access to care.⁽⁸⁾ Furthermore, access to care may be limited due to low socioeconomic status despite availability of public insurance.⁽⁸⁾

However, few studies to date have assessed the current cascade of HCV care among women of reproductive age or evaluated the factors that may be associated with receipt of HCV testing in this population. These data are even more limited among those who are underserved and at risk for experiencing health disparities. In this study, we aimed to evaluate the prevalence of HCV screening and assess the potential factors associated with screening and HCV

antibody positivity in a large, underserved, and racially diverse cohort of reproductive age women in the United States.

Patients and Methods

STUDY DESIGN AND PATIENTS

This is a retrospective cohort study of a primary care registry that includes electronic medical records of reproductive age women who accessed primary care at least once at one of 12 clinics in the San Francisco Health Network, within the San Francisco Department of Public Health, between December 1, 2016, and December 1, 2018.⁽⁹⁾ Reproductive age women were defined as any female patient between the ages of 15 and 44 years as of December 1, 2018.^(2,3) Detailed demographic, clinical, HCV, and pregnancy-related data captured between July 1, 1998, and December 1, 2018, were obtained through medical records. Race by self-report was categorized as white, black, Latina, Asian, and other. HCV screening was defined as receipt of the HCV antibody (HCVAb) test. HCVAb positivity was defined as a reactive or positive HCVAb test. Hepatitis B virus (HBV) testing (hepatitis B virus surface antigen test [HBsAg] and hepatitis B virus surface antibody test [HBsAb]) was also evaluated to assess for receipt of other hepatitis testing and preventative services. Women with HCVAb positivity received further chart review to assess for rates of HCV viremia (detectable hepatitis C virus viral load [HCVRNA]) and initiation of HCV treatment. Although the specific timing of HCV testing in relation to pregnancy could not be determined in the data set, a documented history of pregnancy was captured as a surrogate for pregnancy

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and a potential opportunity for hepatitis screening during perinatal care in those at risk. A subgroup analysis was therefore conducted for women with a history of pregnancy, defined as those who have ever been pregnant during the study period. This study was approved by the University of California San Francisco Committee on Human Research.

STATISTICAL ANALYSIS

Descriptive analyses of baseline cohort characteristics and HCV screening, HCVAb positivity, and HCV treatment rates were performed to obtain frequency (percentage) for categorical variables and median (interquartile range [IQR]) for continuous variables. Chi-square test and Kruskal-Wallis test were used to assess for differences in categorical and continuous variables by age group and pregnancy status. Univariate and multivariable regression modeling were then used to assess for factors associated with the primary outcome of HCV screening (i.e., having an HCV antibody test) and secondary outcome of HCVAb positivity (i.e., having a positive/reactive HCV antibody result), while adjusting for age and race. To meet the normality assumption, the log scale was used for alanine aminotransferase (ALT) and aspartate aminotransferase (AST) variables. Stata statistical software version 15.1 (StataCorp, College Station, TX) was used for analysis.

Results

A total of 19,121 women were identified and included in the study cohort. Table 1 summarizes the clinical and laboratory characteristics of the overall cohort and by age groups. The overall cohort had a median age of 33 years (IQR 26-38 years) and were 18.2% white, 12.0% black, 46.3% Latina, 21.5% Asian, and 2.0% other race. A total of 7,406 (38.7%) had received an HCVAb test. Older women of 40-44 years of age were significantly more likely to have received HCV screening with a HCVAb test compared to those of younger age groups (Table 1). Among those screened, 2.8% (n = 206) were HCVAb positive. Of these 206 women, 85.9% (n = 177) had detectable HCV RNA levels and most (59.3%) of the viremic patients had a history of injection drug use. Forty-one (23.2%) viremic patients had received HCV treatment, and

of these, 82.9% (n = 34) achieved sustained virological response (SVR), 14.6% (n = 6) did not receive or were not due for a SVR test, and 1 patient (2.4%) did not achieve SVR. Figure 1 shows the cascade of HCV care among women with HCVAb positivity.

FACTORS ASSOCIATED WITH HCV SCREENING

On univariate analysis, older age, black race, HBsAg testing, human immunodeficiency virus (HIV) infection, and higher log ALT levels were significantly associated with a higher likelihood of receiving HCV screening with a HCVAb test ($P < 0.001$; Table 2). Asian race was significantly associated with a lower likelihood of receiving HCV screening ($P = 0.002$). However, on multivariable analysis, after adjusting for age and race, age was no longer statistically significant (odds ratio [OR] 0.95 [95% confidence interval (CI) 0.86-1.05]; $P = 0.30$). Instead, Latina (OR 0.45 [95% CI 0.37-0.55]; $P < 0.001$) and Asian women (OR 0.74 [95% CI 0.58-0.94]; $P = 0.01$) had a lower likelihood of receiving HCV screening compared with their white counterparts. In contrast, HBsAg testing (OR 8.25 [95% CI 6.80-10.01]; $P < 0.001$), HIV infection (OR 5.98 [95% CI 1.86-19.2]; $P = 0.003$), and higher log ALT values (OR 1.30 [95% CI 1.16-1.45]; $P < 0.001$) were associated with a higher likelihood of receiving HCV screening.

FACTORS ASSOCIATED WITH HCVAb POSITIVITY

On univariate analysis, older age, white race, HIV infection, and log ALT values were significantly associated with HCVAb positivity (Table 3). On multivariable analysis, after adjusting for age and race, older age (OR 1.80 [95% CI 1.26-2.57]; $P = 0.001$), white race (OR 10.48 [95% CI 7.22-15.21]; $P < 0.001$), HIV infection (OR 3.25 [95% CI 1.40-7.55]; $P = 0.006$), and higher log ALT values (OR 1.93 [95% CI 1.49-2.49]; $P < 0.001$) remained associated with a positive HCVAb test.

SUBGROUP ANALYSIS OF THOSE WITH A HISTORY OF PREGNANCY

A subgroup of 1,017 women (5.3% of the overall cohort) had a history of pregnancy. Their median

TABLE 1. BASELINE CHARACTERISTICS OF OVERALL COHORT AND BY AGE GROUP

Characteristics	Entire Cohort (n = 19,121)	Age 15-17 (1,104, 5.8%)	Age 18-29 (5,917, 31.0%)	Age 30-39 (8,351, 43.7%)	Age 40-44 (3,749, 19.6%)	P Value*
Age (median, IQR)	33 (26-38)	16 (15-17)	25 (21-27)	35 (32-37)	42 (41-43)	<0.001
Race (n = 18,237, %)						
White	3,318 (18.2)	72 (6.7)	800 (14.3)	1,783 (22.4)	663 (18.5)	<0.001
Black	2,184 (12.0)	133 (12.4)	817 (14.6)	840 (10.5)	394 (11.0)	
Latina	8,440 (46.3)	637 (59.5)	2,561 (45.7)	3,564 (44.8)	1,678 (46.7)	
Asian	3,924 (21.5)	219 (20.4)	1,344 (24.0)	1,578 (19.8)	783 (21.8)	
Other	371 (2.0)	10 (0.9)	87 (1.5)	199 (2.5)	75 (2.1)	
History of pregnancy (n = 19,121, %)						
Yes	1,017 (5.3)	—	224 (3.8)	601 (7.2)	192 (5.1)	<0.001
No	18,104 (94.7)	1,104 (100)	5,693 (96.2)	7,750 (92.8)	3,557 (94.9)	
HBsAb (n = 7,893, %)						
Positive	3,868 (49.0)	62 (56.4)	1,203 (55.9)	1,868 (49.9)	735 (39.0)	<0.001
Negative	4,025 (51.0)	48 (43.6)	950 (44.1)	1,875 (50.1)	1,152 (61.0)	
HBsAg tested (n = 19,121, %)						
Yes	10,547 (55.2)	134 (12.1)	2,749 (46.5)	5,188 (62.1)	2,476 (66.0)	<0.001
No	8,574 (44.8)	970 (87.9)	3,168 (53.5)	3,163 (37.9)	1,273 (34.0)	
HBsAg (n = 10,547, %)						
Positive	136 (1.3)	2 (1.5)	16 (0.58)	71 (1.4)	47 (1.9)	<0.001
Negative	10,411 (98.7)	132 (98.5)	2,733 (99.4)	5,117 (98.6)	2,429 (98.1)	
HBeAg (n = 218, %)						
Positive	36 (16.5)	—	9 (28.1)	24 (20.0)	3 (4.7)	0.01
Negative	182 (83.5)	2 (100.0)	23 (71.9)	96 (80.0)	61 (95.3)	
HIV (n = 7,185, %)						
Positive	64 (0.89)	—	8 (0.50)	34 (0.89)	22 (1.3)	0.13
Negative	7,121 (99.1)	30 (100.0)	1,581 (99.5)	3,782 (99.1)	1,728 (98.7)	
HCVAb tested (n = 19,121, %)						
Yes	7,406 (38.7)	64 (5.8)	2,008 (33.9)	3,611 (43.2)	1,723 (46.0)	<0.001
No	11,715 (61.3)	1,040 (94.2)	3,909 (66.1)	4,740 (56.8)	2,026 (54.0)	
HCVAb (n = 7,406, %)						
Positive	206 (2.8)	—	29 (1.4)	113 (3.1)	64 (3.7)	<0.001
Negative	7,200 (97.2)	64 (100.0)	1,979 (98.6)	3,498 (96.9)	1,659 (96.3)	
HCVRNA (n = 168, %)						
Positive	105 (62.5)	—	16 (61.5)	55 (63.2)	34 (61.8)	
Negative	63 (37.5)	—	10 (38.5)	32 (36.8)	21 (38.2)	0.98
HCV genotype (n = 119, %)						
1a or 1b	81 (68.1)	—	9 (64.3)	47 (68.1)	25 (69.4)	
2b	12 (10.0)	—	1 (7.1)	7 (10.1)	4 (11.1)	0.94
3a	24 (20.2)	—	4 (28.6)	14 (20.2)	6 (16.7)	
4	2 (1.7)	—	—	1 (1.4)	1 (2.8)	
ALT (median, IQR) (U/L)	18 (14-26)	1-7 (13-22)	17 (13-23)	19 (14-27)	20 (15-28)	<0.001
AST (median, IQR) (U/L)	21 (17-26)	21 (18-26)	21 (17-25)	21 (18-26)	21 (18-26)	0.002

*P value considered statistically significant if less than 0.05.
Abbreviation: HBeAg, hepatitis B e-antigen.

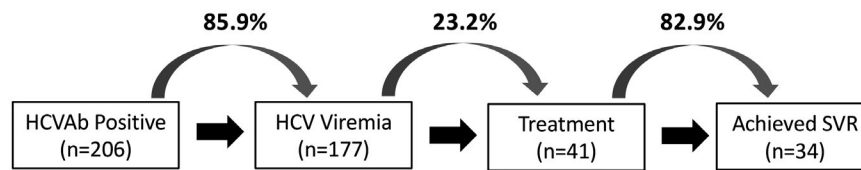


FIG. 1. Cascade of HCV care among women with HCVAb positivity.

TABLE 2. FACTORS ASSOCIATED WITH HCVAB TESTING IN UNIVARIATE (UNADJUSTED) AND MULTIVARIABLE (ADJUSTED) ANALYSES

Characteristic	Unadjusted OR	P Value*	Adjusted [†] OR	P Value*
Age (per 10 years)	1.68 (1.61-1.74)	<0.001	0.95 (0.86-1.05)	0.30
Race				
White	Ref	—	Ref	—
Black	1.59 (1.43-1.78)	<0.001	0.99 (0.78-1.26)	0.94
Latina	1.02 (0.94-1.11)	0.61	0.45 (0.37-0.55)	<0.001
Asian	0.86 (0.78-0.95)	0.002	0.74 (0.58-0.94)	0.01
Other	0.96 (0.77-1.20)	0.70	0.80 (0.47-1.35)	0.40
HBsAg testing	31.7 (28.7-35.0)	<0.001	8.25 (6.80-10.01)	<0.001
HIV infection	12.4 (3.89-39.6)	<0.001	5.98 (1.86-19.20)	0.003
Log ALT	1.87 (1.56-2.24)	<0.001	1.30 (1.16-1.45)	<0.001

*P value considered statistically significant if less than 0.05.

[†]Adjusted for age and race.

TABLE 3. FACTORS ASSOCIATED WITH HCVAB POSITIVITY IN UNIVARIATE (UNADJUSTED) AND MULTIVARIABLE (ADJUSTED) ANALYSES

Characteristic	Unadjusted OR	P Value*	Adjusted [†] OR	P Value*
Age (per 10 years)	1.78 (1.42-2.23)	<0.001	1.80 (1.26-2.57)	0.001
White race	6.62 (4.98-8.81)	<0.001	10.48 (7.22-15.21)	<0.001
HIV infection	4.55 (2.12-9.75)	<0.001	3.25 (1.40-7.55)	0.006
HBsAg positive	0.33 (0.05-2.38)	0.27	0.57 (0.08-4.29)	0.59
Log ALT	1.87 (1.56-2.25)	<0.001	1.93 (1.49-2.49)	<0.001

*P value considered statistically significant if less than 0.05.

[†]Adjusted for age and race.

age was 35 years (IQR 30-38 years), and they were 7.2% white, 12.4% black, 70.7% Latina, 9.2% Asian, and 1.1% other race. Most of the women had received HBV testing (98.3% received HBsAg testing, 54.2% received HBsAb testing) and HIV testing (97.5%) at least once in their lifetime. Of those who received HBV and HIV testing, 4 women had HBV infection and none of the women had HIV infection. Other clinical and laboratory characteristics by history of pregnancy are summarized in Table 4.

Of the 1,017 women with a history of pregnancy, 60.5% (n = 615) received HCV screening with a HCVAb test, of whom 2.6% (n = 16) were HCVAb positive. Of these 16 women, 100% received HCVRNA testing for viral load confirmation and 62.5% (n = 10) had detectable HCVRNA levels. Of the 10 women with detectable HCVRNA levels, 60% (n = 6) received HCV treatment and 100% achieved SVR. Of these 6 women, 1 had received treatment before pregnancy, 4 had received treatment after

TABLE 4. BASELINE CHARACTERISTICS OF PATIENTS BY PREGNANCY STATUS

Characteristics	History of Pregnancy (n = 1,017)	No History of Pregnancy (n = 18,104)	P Value*
Age (median, IQR)	35 (30-38)	32 (26-38)	<0.001
Race (n = 18,237, %)			
White	69 (7.2)	3,249 (18.8)	<0.001
Black	119 (12.4)	2,065 (12.0)	
Latina	672 (70.7)	7,768 (45.0)	
Asian	88 (9.2)	3,836 (22.2)	
Other	11 (1.1)	360 (2.1)	
HBsAb (n = 7,893, %)			
Positive	233 (42.3)	3,635 (49.5)	0.001
Negative	318 (57.7)	3,707 (50.5)	
HBsAg tested (n = 19,121, %)			
Yes	1,000 (98.3)	9,547 (52.7)	<0.001
No	17 (1.7)	8,557 (47.3)	
HBsAg (n = 10,547, %)			
Positive	4 (0.4)	132 (1.4)	0.009
Negative	996 (99.6)	9,415 (98.6)	
HBeAg (n = 218, %)			
Positive	—	36 (17.4)	0.13
Negative	11 (100.0)	171 (82.6)	
HIV (n = 7,185, %)			
Positive	—	64 (1.0)	0.001
Negative	992 (100.0)	6,129 (99.0)	
HCVAb tested (n = 19,121, %)			
Yes	615 (60.5)	6,791 (37.5)	<0.001
No	402 (39.5)	11,313 (62.5)	
HCVAb (n = 7,406, %)			
Positive	16 (2.6)	190 (2.8)	0.78
Negative	599 (97.4)	6,601 (97.2)	
HCVRNA status (n = 168, %)			
Positive	10 (62.5)	95 (62.5)	1.000
Negative	6 (37.5)	57 (37.5)	
HCV genotype (n = 119, %)			
1a or 1b	8 (72.7)	73 (67.6)	0.88
2b	—	12 (11.1)	
3a	3 (27.3)	21 (19.4)	
4	—	2 (1.9)	
ALT (median, IQR) (U/L)	18.5 (14-27)	18 (14-26)	0.06
AST (median, IQR) (U/L)	21 (17-26)	21 (18-26)	0.26

*P value considered statistically significant if less than 0.05.

pregnancy, and 1 had unknown timing of treatment relative to their pregnancy history.

Discussion

This is the first study to report on the cascade of HCV care among women of reproductive age in a large underserved and racially diverse cohort. In this

cohort, the overall rate of HCV testing was nearly 40% and influenced by race, and the rate of linkage to therapy among HCV-infected women was low. Latina and Asian women were less likely to receive HCV screening than white women. Furthermore, a greater proportion of women with a history of pregnancy were tested for HCV, and 60% of those identified as infected were treated, in contrast to 23% of women in the overall cohort, suggesting

that pregnancy and prenatal care may present an opportunity to potentially engage young women in HCV care.

Underserved communities face higher rates of substance use disorders including injection drug use, among other factors, which may increase the risk of HCV infection, and should prompt higher rates of testing among providers who care for these patients.^(10,11) In our study, despite the screening rate being higher than previously described in literature for pregnant young women (60.5% versus 7%-13%),^(3,12) this screening rate is relatively low considering the known increased risk for HCV in underserved populations.^(13,14) Further, the rates of HCV viremia in our study was high at 2.4% and especially high at 1.6% among women with a history of pregnancy, which is nearly double the reported 0.7% in recent studies of pregnant women.^(2,11) We found that HIV and HBV testing was associated with HCV screening, likely due to identified shared risk. However, we also noted that only 60% of our women of reproductive age with active HCV infection (viremia) had an injection drug use history, suggesting that typical risk-based screening may be suboptimal for HCV identification in this population. In addition, only 23% of women with HCV viremia were linked to treatment. Thus, HCV screening alone without interventions to improve linkage to therapy is insufficient to reduce the burden of HCV in this population.

We have also shown a racial disparity in receipt of HCV screening. Latina and Asian women in particular were 26%-55% less likely to receive HCV screening than white women. Although the reasons for this negative association are unclear and may reflect unmeasured factors, it may be related to cultural preferences, social stigma, language barriers that pose difficulty in navigating health systems, and inability or unwillingness to access health care.^(6,9) An additional factor to consider is the higher rates of nontraditional risk factors (such as acupuncture) for HCV infection in Asian populations that may increase the risk of HCV, but may not be recognized as a risk factor by providers.⁽¹⁵⁾ Interestingly, although the rates of HCV are traditionally higher in blacks compared with whites in the general population,⁽¹⁶⁾ in our cohort white race was associated with a 10-fold greater odds of HCVAb positivity. This observed higher rate of HCVAb positivity among women of white race may

be due to lower rates of testing in the non-white racial groups in our study. Alternatively, our findings may support the new demographic trends associated with HCV infection in younger women; a recent report from Ohio showed that non-Hispanic white race was associated with a 3-fold higher rate of maternal HCV infection.⁽¹⁷⁾ Similar to that observed in other studies, other significant influences on risk of HCVAb positivity in our study included older age, liver test abnormalities, and HIV infection.^(18,19)

We posit that perinatal care may provide a potential opportunity for HCV testing in women of reproductive age and for linking infected young women to HCV-related care.^(20,21) Indeed, we observed that among women with a history of pregnancy, 60.5% had received HCV testing at some point in time, and of the 10 women with HCV viremia, 60% were linked to treatment—a higher rate than that observed in the overall cohort. In addition, nearly 98% of women with a history of pregnancy had received HIV and HBsAg testing, which is universally recommended during pregnancy.^(22,23) Although the timing of these tests in relationship to pregnancy could not be ascertained, these testing rates are similar to that observed in other pregnant cohorts.⁽²⁴⁻²⁷⁾ This suggests that the currently revised AASLD/IDSA⁽⁵⁾ recommendation for universal HCV testing during pregnancy has the potential to enhance identification of missed HCV cases and link patients to therapy in this difficult-to-reach population, who may not readily access care outside of their pregnancies.

Our study was limited by its retrospective design and the potential for misclassification inherent to self-reported race and medical record review to ascertain pregnancy status. In addition, while history of ever being pregnant was captured, the timing of pregnancy in relationship to laboratory testing was not available. Nevertheless, the large sample size and racial diversity of our cohort allowed for addressing gaps in our knowledge of HCV testing and linkage to HCV treatment in this previously understudied population.

In conclusion, in this large cohort of underserved women of reproductive age, HCV screening was relatively low, and treatment in those with HCV infection was suboptimal. Importantly, in a large proportion of those with active infection, the major risk for HCV (e.g., injection drug use) was not identified. This suggests that underserved status itself may be

a risk factor for HCV. On the other hand, despite the inherent challenges of health care access in this population, among women with a history of pregnancy, the rates of HBV and HIV testing were near universal, potentially highlighting the influence of engagement in perinatal care. This also suggests that universal testing during pregnancy as recommended by AASLD/IDSA has the potential for identification of missed HCV cases in our population. However, more importantly, our study also highlights the likely need to extend universal HCV screening recommendations to include all underserved women of reproductive age to prioritize their linkage to treatment and meaningfully decrease the HCV burden in this at-risk population.

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