

# Recommendations for Implementing Hepatitis C Virus Care in Homeless Shelters: The Stakeholder Perspective

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Compared with the general population, homeless individuals are at higher risk of hepatitis C infection (HCV) and may face unique barriers in receipt of HCV care. This study sought the perspectives of key stakeholders toward establishing a universal HCV screening, testing, and treatment protocol for individuals accessing homeless shelters. Four focus groups were conducted with homeless shelter staff, practice providers, and social service outreach workers (n = 27) in San Francisco, California, and Minneapolis, Minnesota. Focus groups evaluated key societal, system, and individual-level facilitators and barriers to HCV testing and management. Interviews were transcribed and analyzed thematically. The societal-level barriers identified were lack of insurance, high-out-of-pocket expenses, restriction of access to HCV treatment due to active drug and/or alcohol use, and excessive paperwork required for HCV treatment authorization from payers. System-level barriers included workforce constraints and limited health care infrastructure, HCV stigma, low knowledge of HCV treatment, and existing shelter policies. At the individual level, client barriers included competing priorities, behavioral health concerns, and health attitudes. Facilitators at the system level for HCV care service integration in the shelter setting included high acceptability and buy in, and linkage with social service providers. **Conclusion:** Despite societal, system, and individual-level barriers identified with respect to the scale-up of HCV services in homeless shelters, there was broad support from key stakeholders for increasing capacity for the provision of HCV services in shelter settings. Recommendations for the scale-up of HCV services in homeless shelter settings are discussed. (*Hepatology Communications* 2020;4:646-656).

**H**epatitis C virus (HCV) prevalence is underestimated in underserved populations, including people experiencing homelessness who are at increased risk of HCV infection.<sup>(1)</sup> According to a recent systematic review of infectious disease prevalence studies, the prevalence of HCV among homeless adults ranges from 9.8% to 52.5%.<sup>(2)</sup>

Among people experiencing homelessness, substance use and mental health disorders are common, and are risk factors for HCV infection.<sup>(3,4)</sup> Moreover, homelessness has consistently been associated with injection drug use,<sup>(5)</sup> and engaging in unsafe injection drug-use practices likely drives the high rates of HCV infection documented among this population.<sup>(4,6-9)</sup> Despite the

*Abbreviations:* DAAs, direct acting antivirals; HBF, Health Behavior Framework; HCV, hepatitis C virus; PWID, people who inject drugs; SUD, substance use disorder.

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high prevalence of HCV among homeless persons, a significant proportion still remains undiagnosed and consequently untreated.<sup>(10)</sup>

The perspective of health care providers and stakeholders (i.e., shelter staff and directors, social service outreach workers and navigators) offer insight into the barriers and facilitators of HCV testing and treatment experienced by individuals who are homeless or marginally housed, and are essential to the process of designing effective HCV service delivery models. In one study conducted before the direct acting antiviral therapy (DAA) era, patient-level barriers to HCV testing reported by shelter and health services staff among individuals experiencing homelessness included a lack of transportation, not having health insurance, unstable housing, medical mistrust, and a lack of mental illness and substance use disorder (SUD) treatment services.<sup>(11)</sup> These challenges highlight the importance of rapid HCV point-of-care testing as one of the main health care needs of shelter clients.<sup>(11)</sup> However, despite the potential benefit of this testing approach and efficacy of DAAs, suboptimal uptake of HCV treatment persists among homeless adults.<sup>(10,12,13)</sup>

From the perspective of primary care providers and hepatology specialists, previous research has identified patient, provider, and structural barriers and facilitators to HCV care.<sup>(14,15)</sup> Barriers to HCV care at the patient level included social stigma, homelessness, substance use and mental health disorders, poor patient-provider communication, medication adherence, lack of patient motivation, and fear of medication side effects.<sup>(14,15)</sup> Potential facilitators identified at the system level within these practice settings included the importance of the role of providers in educating and encouraging their patients to engage in and adhere to HCV treatment.<sup>(14,15)</sup> Moreover, formal

patient education has been shown to enhance HCV knowledge and facilitate HCV management and coordination in both primary care and specialty clinics for underserved populations.<sup>(15,16)</sup> Therefore, a better understanding of the perspectives of health care providers and ancillary staff working in homeless shelters is critical to guide the implementation of effective strategies to increase uptake of HCV screening and treatment among this at-risk population.

The primary goal of this study was to examine shelter provider and ancillary staff perspectives on barriers and facilitators to increasing capacity for the provision of HCV services in the homeless shelter setting. We used the Health Behavior Framework<sup>(17,18)</sup> to conduct a comprehensive assessment of potential factors that could influence the integration of HCV services in homeless shelters, and used the information gathered to design a model of care to address HCV health disparities experienced by homeless adults.

## Methods

### PARTICIPANTS

A total of 27 key stakeholders were recruited from four large homeless shelters located in San Francisco, California, and Minneapolis, Minnesota: two shelters in each respective city. A qualitative research design was used to gain a detailed understanding of provider opinions and attitudes toward the integration of HCV services in homeless shelters. Eligible participants were shelter staff (i.e., staff and leadership), practice providers (i.e., registered nurses, nurse practitioners, pharmacists, physicians, and physician assistants), and social service outreach workers (i.e., patient navigators, case managers). Overall, four focus groups

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were conducted: three in San Francisco and one in Minneapolis. In San Francisco, the first group (FG #1) consisted of practice providers (n = 5). The second group (FG #2) consisted of social service outreach workers (n = 6). The third group (FG #3) consisted of shelter staff (n = 4). The fourth group (FG #4), conducted in Minneapolis, consisted of practice providers (n = 11) and a social service outreach worker (n = 1). The sample size selected (27 participants, four groups) was expected to provide adequate saturation of major themes.<sup>(19)</sup>

## SETTING

The four homeless shelters from which participants were recruited served 300–400 marginally housed and homeless individuals per day and were located in urban areas. The shelters provided a variety of services to their clients, including integrated urgent care, linkage to disability and other benefits, housing, and intensive case management. These shelters offered limited HCV testing and linkage to HCV services. These shelters shared a common mission to design effective HCV prevention and treatment models for people experiencing homelessness.

## PROCEDURES

Shelter directors and medical directors working at each of the study sites identified eligible staff to participate in the study. Invitations to participate in focus groups were sent to potential participants through e-mail correspondence. Each 60-minute focus group session was conducted between September and October 2018 at the participating shelters using the same methods. Participants were not provided compensation for completing the interview. Each participant gave written, informed consent for the interview and audio recording. This study was approved by institutional review boards of the University of California, San Francisco, and Hennepin Healthcare in Minneapolis.

Focus groups were conducted by experienced facilitators using a semistructured interview guide (C.M., M.K., K.F., and J.P.). The interview guide consisted of open-ended questions that addressed key implementation issues, including shelter resources available to manage HCV, patient needs, attitudes toward the integration of HCV care in the shelter, potential barriers to integration of HCV services, previous knowledge or

experiences in managing patients receiving treatment for HCV in the shelter, and recommendations for improving the delivery of HCV services (Supporting Information). Facilitators asked open-ended questions and used probes as needed to elicit more responses or expand ideas expressed by participants. Throughout the interview, facilitators used member checking by rephrasing key statements to verify accurate interpretation of participant responses, which led to increased validity and credibility of the data.<sup>(20)</sup> A co-facilitator took detailed notes, operated recording equipment, and debriefed with the facilitator after the focus group session.<sup>(21)</sup> Focus group discussions were digitally recorded and transcribed verbatim for thematic analysis.

The Health Behavior Framework (HBF) was used to guide the analysis and interpretation of the qualitative interview data. The efficacy of the HBF as a guide for community-level intervention has been validated among multiple communities, including those at risk of HBV infection.<sup>(17)</sup> This framework is a multidimensional model and synthesizes multiple models of health behavior, social theory, and change to map factors that influence behavioral intentions, thereby influencing health behavior.<sup>(18)</sup> By dividing influencing factors into societal, system, and individual levels, this model allows for the consideration of barriers and facilitators in terms of the level of their projected impact.

## QUALITATIVE DATA CODING AND DATA ANALYSES

We used deductive theory-driven thematic analysis to find underlying meaning in the text, which is the iterative process of coding, review, discussion, and revision.<sup>(22)</sup> A thematic analysis is not dependent on a quantifiable measure, but rather the data are coded to capture predominant or important themes in relation to a specific research question or issue.<sup>(22)</sup> In the first stage of the analysis, three coders (C.M., K.F., and A.A.) read responses line-by-line to obtain an understanding of the text and overall impression of the material. Second, important meaning units (i.e., line, sentence, or paragraph) were identified. Third, the meaning units were identified and labeled with codes, then grouped into categories and subcategories. Coders met on four separate occasions to compare coding choices, suggesting possible codes and definitions for the codebook. Once consensus was reached about the acceptability of code labels and definitions,

coders used the refined cookbook and independently assigned codes to the transcripts. This iterative process of coding continued until all of the text in the transcripts had been coded.

Using the HBF, themes were further sorted into societal, system, and individual levels, allowing us to consider their projected impact. Societal-level factors are community-based characteristics specific to the homeless population, which may affect the implementation of rapid HCV point-of-care testing and treatment in urban-based homeless shelters. System-level factors are characteristics specific to health delivery infrastructure (i.e., provider, health care system, shelter system) within the context of homeless shelters. Individual-level factors are features perceived by the participants to reflect characteristics specific to people experiencing homelessness using shelters that may affect the implementation of an HCV testing and treatment protocol. Illustrative quotations were chosen from the interviews. To ensure confidentiality, all quotes from participants have been de-identified.

## Results

Based on the HBF, we identified barriers and facilitators at the societal, system, and individual level. Several major themes emerged from our analysis, which informs our recommendations and next steps for the successful implementation of a universal HCV screening, testing, and treatment program. At the societal level, health insurance was the predominant theme. System-level themes included workforce constraints, changing the HCV treatment narrative, low HCV treatment knowledge, shelter policies, high acceptability and buy-in from staff, and linkage with social service outreach workers. Individual-level themes included competing priorities, behavioral health needs, health attitudes, and prescriber's attitudes about people who inject drugs (PWID). Below, we describe examples related to the major themes identified within societal, system, and individual-level factors.

### SOCIETAL-LEVEL BARRIERS

#### Insurance

The most important barrier identified by FG #1 and FG #4 to receipt of HCV care is related to

health insurance access and policies. They specifically noted a lack of insurance coverage, high out-of-pocket expenses, restrictions on treatment due to drug and/or alcohol use, and excessive paperwork required to obtain treatment authorization from payers.

*There is a lot of caveats from insurance companies which require authorizations around clean urine drug screens and looking at the ability of the client to be able to adhere to treatment plans. (FG #4)*

*I did a lot of communications with them (insurance companies) and the pharmacies about medications for hepatitis C and I think that was a big thing that took up a lot of our time. And clients didn't want to sit for these interviews and questions. (FG #1)*

### SOCIETAL-LEVEL FACILITATOR

There were no particular societal-level facilitators reported by the participants.

### SYSTEM-LEVEL BARRIERS

#### Workforce Constraints in the Shelter

Workforce constraints and a limited health care infrastructure to treat HCV were cited as important barriers to expanding HCV services in shelters. Practice providers reported inadequate time for screening, testing, and treating clients with a complex clinical presentation.

*Folks have to understand that the shelters have the sickest, most complicated people under one roof with one nurse and three hundred and fifty people. (FG #1)*

Shelters are not equipped with laboratories; specimens would need to be couriered out in these settings. Shelters also do not have pharmacies; therefore, medications for HCV treatment would have to be delivered from pharmacies to clients, and appropriate systems set up to store and dispense medications.

*[Time consuming] Setting up deliveries. In the past those medications would get delivered to the wrong site and I would have to track that down. (FG #1)*

*[It takes 3–5 days to get lab results]. It's a barrier. And [...] We have a positive lab mechanism where we keep trying to do follow ups to capture the patient, but it can still take a couple of weeks. (FG #4)*

## HCV Treatment Narrative

Many social service outreach workers, practice providers, and shelter staff reported a need to change the HCV treatment narrative. Participants were familiar with the difficulties of HCV treatment in the interferon-based era and the narrative related to HCV treatment at that time.

*There needs to be some education around [...] new treatments available now. It's not like the interferon back in the day where you'd have to go through six, nine months of treatment and it was not very pleasant and it wasn't a hundred percent cure anyway [The new treatment] is much more time efficient. (FG #3)*

*Educating them (patients) about the current treatment regimens, that they are shorter, [...], kind of understanding if people have had negative experiences with friends or family being treated in the past when regimens were much more challenging. (FG #4)*

Other participants further commented that they believed that the interferon-based HCV treatment narrative may have contributed to delays in providers deciding to refer clients for treatment.

*I feel like [...] the narrative that is out there on the street is the battle days of interferon, everyone was told to just wait with their Hep C. They found out they were living with Hep C, and they (doctors) said, 'well you know it's never an emergency and just wait on it.' (FG #2)*

*Now we have better treatments, so we have to tell patients, why wait? Cure Hep C now. (FG #2)*

## Low HCV Treatment Knowledge

Participants were generally aware of HCV and its risk factors, and knowledgeable about strategies to prevent HCV infection. However, shelter staff indicated low knowledge about HCV care and specified a

need for training to improve their knowledge of HCV treatment.

*I don't know that much about (HCV) treatment. We have not had anyone at our (center) go through the full course of treatment. (FG #3)*

Practice providers were knowledgeable about HCV and its treatment, but there were site differences with respect to their experiences in treating HCV in shelters. In Minneapolis, there was limited experience in treating HCV in the homeless shelter setting, while in San Francisco, participants acknowledged they had some had experience in treating HCV among shelter clients.

*We don't have much experience. We don't currently treat in the shelters. (FG #4)*

*A few people have been treated in the shelter. We have done a couple, one in particular that I know we helped (refer to specialty treatment) and it was successful. (FG #1)*

## Shelter Policies

Participants in San Francisco indicated that shelters' specific policies regarding admittance and continuity of residence within the shelters may limit a client's stay. Thus, continuity of shelter residence cannot be guaranteed for the duration of treatment. In addition, they reflected that shelter policies regarding behavioral health disorders (substance use and mental illness) can cause frequent termination of clients' stays at the shelter.

*There are restrictions on how [appearance] you can show up at a shelter. You are talking about active drug users bringing in their syringes and [shelter policy] says you can't bring your syringes here. (FG #2)*

*You may initiate somebody in a shelter and then they get bounced for drug use or for having an episode [where] they are agitated or acting violently. [...] You get kicked out for that. (FG #2)*

## SYSTEM-LEVEL FACILITATORS

### High Acceptability and Buy-In

Participants in both locations expressed high acceptability and buy-in from city and county officials

for increasing capacity to provide HCV testing, treatment, and linkage services to homeless clients.

*Integrating HCV treatment in the shelter will go a long way for people to access care. (FG #4)*

*Treating (patients) with Hepatitis C, it's wonderful, it's fantastic that we are able to treat it and actually cure it. (FG #1)*

Furthermore, participants in both locations viewed the leadership and culture of organizations as major facilitators of the implementation of onsite HCV management to optimize HCV care for their clients. Participants stated that in San Francisco, many organizations received onsite education as part of a city-wide initiative to eradicate HCV. These education programs positively informed providers' and staff's knowledge, attitudes, and beliefs.

*"They [the City and County of San Francisco] really care about ending Hepatitis C; they've put a lot of money and resources towards it. It's very important in this [homeless] population because they are high risk." (FG #1)*

## Linkage With Social Service Providers and Outreach Workers

Participants stated that engaging existing social service providers and outreach workers catering to homeless individuals helped broker trust between clients and health care providers. These social service agencies assisted clients in establishing health insurance, providing case management, offering harm-reduction programs to patients with SUDs, and providing referrals. Participants especially praised the collaboration with local social services agencies that assisted in screening clients at the homeless shelters and helping to track patients in the community.

*Now with [social service outreach in the community] helping, it's great. They are doing the testing once a week at each homeless shelter. They call me when they have a positive screen and I'll refer them for treatment. It's a much easier process. (FG #1)*

*The collaboration and the relationship building that we do across agencies is really important because no matter*

*where this person sort of gets pushed, or falls into, they will arrive somewhere else and then we will be able to link them again. (FG #2)*

*Having a community health worker to be really dedicated to outreach is great. [...] they can help with tracking patients and medication adherence. (FG #4)*

## INDIVIDUAL-LEVEL BARRIERS

### Competing Priorities

At the client level, unstable housing, competing priorities, and inaccurate perceptions about HCV infection and treatment were identified as barriers. Participants defined competing priorities as acts of daily living that require greater effort due to housing status, such as needing to secure food, engaging in personal hygiene, meeting employment responsibilities when present, and lack of transportation.

*Because most of our clients have multiple comorbidities and this (Hepatitis C) might not be their priority. (FG #4)*

*It's a very chaotic world (for patients) and there's competing priorities. I gotta eat; I got to find some shoes. (FG #1)*

### Behavioral Health

Behavioral health conditions were perceived to cause difficulty with maintaining residence in the shelter, remembering appointments, and adhering to treatment. Many practice providers reported that having a SUD negatively affects treatment due to insurance provider restrictions on who, among individuals with chronic HCV, may receive treatment.

*I think substance abuse impacts our clients' abilities to actually engage in care. (FG# 4)*

*(Medication) adherence is difficult in the population because of theft, intoxication, losing their stuff; yeah they you know, alcohol, drug abuse. (FG #1)*

Furthermore, social service outreach workers reported that people who have substance use disorders may be deterred from therapy due to perceived social stigma from providers who may have negatively biased views of people with substance use issues, and

thus many PWID may not believe providers will treat their HCV.

*We have people (saying) like oh 'it's ninety thousand dollars for treatment, aw I'll never get that because I'm just this humble homeless person.' They'll just kind of (have) Stockholm syndrome that they (think they) are worthless people. (FG #2)*

## PERCEIVED FACILITATOR

### Health Attitudes

Some participants noted that people experiencing homelessness care about their health and that they are willing to engage in medical care if given the opportunity.

*It's a misconception to think the homeless don't care about their health; they do. They just need help to manage it. (FG #1)*

*On the down low (homeless) people are concerned about their health, I mean straight up. (FG #2)*

### Prescriber's Attitudes About HCV Treatment Among Active Injection Drug Users

Participants in Minneapolis indicated that, in the past, some treating providers were reluctant to initiate HCV treatment in the context of active injection drug use due to concerns about treatment nonadherence or reinfection. Currently, providers no longer delay treatment among active injection drug users.

*Regardless, I still refer people (for HCV treatment) if they are actively using. (FG #4)*

*I think the majority of us (shelter practice providers) embraces risk reduction, and we would be [...] less concerned about if they (the patient) were using, but more concerned with [their] consistency with follow up and their ability to engage with us and their compliance with their medication. (FG #4)*

In contrast, focus group participants in San Francisco did not discuss prescriber's attitudes about HCV treatment among active injection drug users.

## RECOMMENDATIONS FOR SUCCESSFUL IMPLEMENTATION OF SHELTER-BASED HCV TESTING AND TREATMENT

Participants provided the following recommendations to successfully implement HCV care within the shelter setting:

1. *Offer the shortest possible course of HCV therapy:* Practice providers in both locations suggested a shorter course of HCV therapy for this population.

*Because in this population, they are getting moved around a lot, right? And so a shelter bed might be for a short period of time. It's better to have a shorter course. (FG #4)*

*Two months (treatment) are a lot easier. [...] for people it's a big difference. (FG #1)*

2. *Establish a designated HCV coordinator:* To address workforce constraints and provide comprehensive HCV care (i.e., screening, testing, education, medications, and client follow-up).

*You have a designated nurse with that phone, and someone can just communicate directly, [...] and then just do a warm hand off. Then (the designated nurse) coordinates the blood draws, run to the lab, dispense medications and do teaching. (FG #1)*

*More care coordination staff. You know like having the dedicated hepatitis C nurse that [...] is huge. (FG #4)*

3. *Use incentives to engage patients in follow-up care:* Several participants attested to the possibility of better medical engagement once the traditional model of health care is adjusted to the context of homelessness. Participants described innovations such as using case-management services during therapy, incentivizing treatment (e.g., food, money), increasing access to behavioral health services, scheduling evening clinic hours, and using community peer navigators to locate and motivate patients to engage in treatment.

*I think our patients are very motivated by incentives, [...] Some Gatorade, some food, snacks, gift cards. (FG # 4)*

*If you are using gift cards, put the biggest amount at follow-ups. (FG #1)*

4. *Provide extended shelter stay for those in treatment:* Participants in San Francisco suggested extending shelter stay opportunities for patients in HCV care.

*That could also be another incentive if something was worked out as far as like we have reserved x amount of beds for people actively engaging in some sort of (HCV) treatment. (FG #3)*

5. *Provide education for staff:* Shelter staff's limited knowledge of HCV and its treatment highlights the importance of providing HCV education for staff working with vulnerable populations at high risk for HCV. Providing HCV education may increase staff's self-efficacy to support the HCV treatment needs of their clients.<sup>(23)</sup>

*"I'm glad you mentioned the staff education component. I had some questions about that (treatment) and some really basic questions, like what's Hep C, is that airborne?" (FG #3)*

6. *Offer peer navigation or support groups led by peer facilitators (i.e., people with shared life experience):* Focus group participants noted that peer-based education could enhance trust, social support, increase HCV knowledge, and reduce perceived stigma.

*(Trained peers) go out into the community and they (homeless clients) feel like you've got somebody who looks like you, who has the same infection as you, but has cured it, it's a very compelling testimony. (FG#2)*

7. *Provide formal HCV education for clients:* As we have demonstrated in our previous work, HCV formal education substantially improves patient knowledge of HCV disease in a vulnerable and diverse patient population.<sup>(24)</sup> A patient-centered approach to health care in HCV-infected vulnerable populations, such as people experiencing homelessness, has the potential to address unmet HCV health care needs and improve patient outcomes.<sup>(16)</sup>

*You (a provider) just kind of engage them on that level while it's going on so they are getting a little bit of education during that time. (FG# 3)*

## Discussion

This study explored perspectives of shelter staff, health care practice providers, and social service outreach workers as stakeholders on ways to implement HCV screening, testing, and treatment in urban homeless shelters. Although previous research has assessed provider stakeholder perspectives within specialty and primary settings, we expanded the literature by focusing on facilitators and barriers for HCV care within shelters in two distinct urban locations (Minneapolis and San Francisco). We found that despite societal, system, and individual-level barriers identified as related to the scale-up of HCV services, there was broad support from stakeholders for the integration of HCV services within the shelter setting. We also identified key recommendations to ensure the successful scale-up of HCV services within homeless shelters.

Our findings suggest several societal, system, and individual-level barriers and facilitators that spanned the HCV care continuum from case identification or diagnosis to treatment management. Our results demonstrate shelter management in San Francisco and Minneapolis has high acceptability and buy-in for expanding HCV care. Although some of the identified barriers are difficult to modify, others may be more amenable to change, such as enhanced education for staff, a dedicated support system with trained personnel, peer-based education, and navigators and social support<sup>(25,26)</sup> to enhance HCV knowledge. These were suggested as possible solutions to facilitate successful implementation. Our results further suggest that provision of linkage or integration of behavioral health services may enhance HCV treatment adherence, particularly among PWID. The process of integration ranges from services co-located in a single clinic<sup>(27,28)</sup> to facilitated behavioral health referrals at HCV treatment clinics, and may even include a mix of these; these service delivery models could also be considered for implementation in shelter settings. Similar approaches have been met with success in the treatment of HIV in PWID by integrating mental health or SUD treatment services within the context of anti-retroviral treatment delivery.<sup>(29)</sup>

Integrating services for HCV in shelter settings could mitigate several logistical barriers that PWID experiencing homelessness commonly encounter, such as other competing priorities that may cause a

patient to miss an appointment. A recent systematic review of integrated models of care for people who inject drugs and have chronic hepatitis C infection suggests that a one-stop shop model of care that integrates HCV care in addiction-treatment programs or community settings may facilitate engagement along the continuum of HCV care for this population.<sup>(30)</sup> Additionally, community-based HCV treatment by primary care providers may offer a promising strategy to reach people experiencing homelessness.<sup>(12)</sup> However, in shelters where multidisciplinary resources are lacking, health care providers, shelter staff, and social service outreach workers must advocate for patients in ways that can move the patient toward treatment. Advocacy may include securing housing, social work interventions, intervening on behalf of the patient with insurance companies, which can result in an increased workload for providers and may lead to clinician burnout.<sup>(31)</sup> We also identified a need to increase awareness and understanding of the benefits of treatment with DAAs among patients, providers, and key stakeholders.<sup>(32)</sup> Some stakeholders perceived patients to be wary of treatment because of known historical side effects. Stakeholders suggested enlisting the help of peer educators<sup>(33)</sup> who can act as a bridge between the patient and provider, to increase motivation for treatment and to reduce self-stigma among patients with HCV and provide encouragement to engage and comply with treatment.

Based on previous research on integrated models of care for at-risk populations with HCV<sup>(30)</sup> and our formative work reported herein, we are currently evaluating scaling up HCV testing and a flexible model of integrated HCV care and treatment. In this model, a designated provider (a nurse in San Francisco and a pharmacist or physician assistant in Minneapolis) performs incentivized HCV point-of-care testing and confirmation of active infection, formal patient group education, assessment of treatment readiness, and links the patient to HCV therapy.<sup>(34)</sup> HCV therapy is offered by shelter practice providers or a designated onsite HCV nurse coordinator, as well as through referral to offsite primary care providers or hepatology specialists. This ongoing study seeks to evaluate whether this one-stop shop model of care can be applied in homeless shelter settings to reach HCV-infected persons who are homeless and improve their engagement along the continuum of HCV care.

Limitations of the study should be noted. This study focused on four shelters with 24-hour access and options for extended stay, such as receiving care for serious medical conditions or transitioning to permanent housing. These shelters also had pre-existing clinics with linkage to case management embedded in their infrastructure. Clients at these shelters therefore had more stable housing than clients in other traditional or homeless respite centers (i.e., navigation centers). Inclusion of navigation centers and more transitional populations may have increased generalizability of these results. Participants' demographic information such as age, race/ethnicity, gender, and length of employment or practice were not collected, as the staff at the programs viewed this information as too sensitive to share in the context of a focus group in a work environment. Therefore, we cannot report and compare the narratives according to these demographic characteristics. Additionally, participants knew and worked with each other, and one focus group consisted of providers who held different roles at the shelter; thus there is the possibility that some participants did not want to disagree with their supervisors, and did not express their own opinions. It is also possible that participants may have provided socially desirable responses, because it was known that the interviewers were developing a service delivery model to support access to HCV care. Finally, it would be beneficial in future research to study barriers and facilitators to HCV care among practice providers working in shelters in other regions of the country, and to identify similarities and differences by region.

This study identified several areas for targeted intervention at the societal, system, and individual level, to facilitate the successful integration of HCV screening, rapid point-of-care testing, and treatment in homeless shelters. Integrating psychosocial services to enhance linkage to SUD treatment and/or mental health services is critical in providing comprehensive HCV care for people experiencing homelessness. Addressing issues such as workload and time pressures for practice providers with trained HCV-designated personnel could reduce system barriers and improve treatment continuity with this population. Finally, while new therapies for HCV have high efficacy when taken correctly, there was a perception

that patients' narrative of HCV treatment remains entrenched in past therapies, and providers may not be knowledgeable about advancements in HCV treatment. To address this knowledge gap, educational programs for providers as well as formal HCV patient education programs and peer education within shelters should be key intervention components of comprehensive HCV care to increase HCV testing and cure rates within the homeless population. As the landscape for HCV treatment continues to evolve, future studies may identify new barriers or potential solutions to address gaps in HCV treatment among people experiencing homelessness.

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