Point-of-care rapid testing for hepatitis C antibodies at New Zealand needle exchanges

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ABSTRACT

AIM: The study's principal aim was to ascertain the viability of point-of-care rapid testing for hepatitis C (HCV) antibodies by non-clinician frontline peer needle exchange staff. Secondary aims included identifying HCV-exposed clients, improving their access to treatment, assessing their knowledge of HCV and strengthening client-staff relationships.

METHOD: Peer staff at three South Island needle exchange services (two urban, one mobile) were trained to administer point-of-care rapid HCV antibody tests, to clients, with finger-stick blood sampling, along with a short self-report questionnaire. Clients testing HCV antibody positive were offered on-site venepuncture by clinical staff, to confirm reactive rapid test results.

RESULTS: Two hundred and four people were tested across the three sites. Of these, 131 (64.2%) tested HCV antibody positive (reactive) and by the study's conclusion confirmatory venepuncture testing (n=55) had produced 14 new diagnoses and seven people had commenced treatment. Additionally, the study successfully assessed clients' previous HCV testing rates and their knowledge of test results. Through the interactions involved in testing participants, needle exchange staff reported strengthened relationships with clients.

CONCLUSION: This study demonstrated the viability of administering rapid point-of-care HCV antibody tests to needle exchange clients by non-clinician frontline peer staff. The efficacy of point-of-care testing and its appropriateness for use in this context to identify HCV-exposed needle exchange clients was demonstrated by the high proportion of participants receiving a reactive result, the identification of viremic clients and their support into treatment.

People who inject drugs (PWID) are a population both at substantial risk of exposure to hepatitis C (HCV) and also one facing numerous barriers to its diagnosis and treatment.[1] Along with restrictive drug policies and criminalisation, PWID have to navigate through poorly linked services, often with limited personal resources.[2,3] Testing may be unavailable or difficult to access,[4] with this exacerbated by PWID actively avoiding mainstream health services due to the stigmatising behaviour of health professionals,[5–8] as well as to technical deficiencies such as inexperienced staff attempting to access compromised veins.[5,9–11] Consequently, while the advent of a new generation of highly effective direct acting antivirals (DAAs) promises improved successful treatment, the possibilities of improved health outcomes for PWID will remain unrealised unless the pool of those infected with HCV is reduced through significantly increased diagnosis.

Providing diagnosis and treatment options via needle exchanges (NEXs) is one path to achieving this. These services are a trusted point of contact for PWID due to commonly being staffed by peer workers, whose lived experience promotes a supportive, empathic and knowledgeable environment within which clients may access harm reduction information and healthcare.[11–13]

Nonetheless, even where NEXs provide clinical services, these may be constrained by inadequate resources, leading to restricted hours and the limited availability

of clinically trained staff.[14] Moreover, where clinician availability supports collection of a quality blood sample by venepuncture to facilitate accurate diagnosis, NEX attendees may not wish to wait for the time this takes or they may feel anxious to protect their few remaining, potentially compromised veins.[10]

One strategy to counterbalance these difficulties is to harness NEXs' greatest resource, peer workers, in combination with HCV point-of-care rapid testing (POCT) to take advantage of non-invasive techniques like finger-stick blood sampling.[4,15] While emerging RNA rapid testing, such as the GeneXPERT technology, is preferable as it confirms clients' viremic status,[8,16,17] its complexity, relative expense and extended processing time means that for resource-limited NEXs the more affordable rapid antibody tests remain an attractive option. The presence of HCV antibodies indicates that a person been exposed to the virus at some time but not whether they are currently infected. People who have naturally cleared the virus or who have been treated and cured will also have a positive antibody test result. Therefore, the antibody tests allow rapid identification of HCV-exposed clients who may then have their current serostatus, ie, whether they have the virus or not, confirmed by venepuncture. When offered, rapid tests are readily accepted by PWID and where clients are given a choice between venepuncture and rapid HCV antibody tests, studies commonly report a strong preference for the latter,[5,18–23] although this is not universal.[24] Notwithstanding the perceived advantages of POCTs, until recently there has been only limited evidence supporting their efficacy in terms of administration by non-clinical staff and that their use promotes increased diagnoses.[20]

With an estimated 40,000 current infections (ie, 1.1% of the population over 15 years) New Zealand has a relatively high prevalence of HCV,[25] including an estimated 16,000 chronically infected who remain undiagnosed.[26] Prevalence is likely higher among those aged 40–60 years.[27] As with elsewhere, New Zealand PWID are at high risk of infection, with the most recent national survey of NEX clients reporting an HCV antibody rate of 58% (n=715).[28] Additionally, while surveillance indicates a history of comparatively high levels of testing over the preceding 12 months, eg, between 54% and 57%,[28,29] NEX service anonymity, PWID itinerancy and continuous exposure to risk factors including high levels of imprisonment, undermine the ability to maintain contact with clients with chronic infections which, unlike acute infections, are not required to be notified in New Zealand.

With these issues in mind in 2017 the New Zealand Needle Exchange Programme (NZNEP) undertook an observational cross-sectional study at selected NEXs to pilot HCV antibody POCT by peer staff.

The study's principal aim was to ascertain the viability of rapid testing for HCV antibodies by non-clinical frontline NEX staff. Secondary aims included: identifying HCV-exposed clients of the service and thereby improving access to treatment; assessing clients' knowledge of HCV; and strengthening relationships between NEX services and secondary, as well as primary care.

Method

Outcomes

Outcomes included encouraging better understanding of HCV among clients; increasing rates of new diagnoses; and promoting better patient outcomes via improved referral pathways, reduced barriers to access, and strengthened relationships between NEXs and the DHB units responsible for HCV treatment. The project also encouraged participating needle exchanges to raise their level of support for clients. Achieving participant recruiting and testing targets, evidence of increased diagnoses and linkage to treatment would indicate success for the study.

Sites and participants

Three NEX services in New Zealand's South Island were chosen for the POCT pilot. Factors influencing choice of site included all being administered by a single Trust, under a 'Hub and Spoke' model involving a central 'Hub' NEX administrating satellite NEXs ('spokes'); sites having different populations and differing levels of clinical services, and geographic separation. One 'site' was a Mobile service on the South Island's West Coast, while the other two were urban services located in the South Island's first and second largest cities. Clinical services at the larger urban centre (the 'Hub') included

a permanently staffed clinic employing a doctor (part-time), two full-time nurses (one a hepatitis C nurse specialist) and a social worker. The smaller urban service (the 'Spoke') offered a weekly four-hour doctor's clinic, supported by a permanent staff member who was also a registered phlebotomist, and a peer staff member who was also a qualified counsellor. The Mobile service operated a monthly three-day visit to the West Coast from a third and smaller urban centre at the top of the South Island, utilising a purpose-equipped van. The Mobile NEX peer worker (a qualified counsellor) was periodically accompanied by the Hub's nurse specialist. Remaining frontline staff at all sites were non-clinician peer workers with lived experience.

A target of 200 participants was set, with initial allocations being 100 (Hub), 50 (Spoke) and 30 (Mobile). Twenty rapid tests were held in reserve to be allocated as required, ie, to accommodate where sites were slow to recruit participants, with the assumption that these were likely to be allocated to the Hub, given its larger client base. Provision was also made for excluded participants to be replaced.

Participant inclusion criteria were age ≥16 years; being a regular client of the NEX or service where the study was taking place; have injected in the previous six-months; and, being able to communicate in English. Currently receiving HCV treatment was not an exclusion criterion as the study's principal aim was to ascertain the viability of rapid testing clients by non-clinical peer staff.

All participants provided oral informed consent before study procedures commenced. The study protocol was approved by the Central Committee of the New Zealand Health and Disabilities Ethics Committees (ref. # 16/CEN/19/AM01).

Choosing a POC rapid test

Several rapid HCV antibody POCTs were candidates for the study, with these subsequently reduced to two options: the consistently highly-rated OraQuick Rapid HCV Rapid Antibody Test (OraSure Technologies) and the less expensive SD Bioline HCV Rapid Test (Standard Diagnostics, Inc.).[30] Ultimately the OraQuick POCT was chosen as the study's benchmark rapid test due to the SD Bioline POCT not receiving WHO preapproval at the time of the study. Data provided in the OraQuick test's product information sheet claim sensitivity of 99.7% and specificity of 99.9%. The performance characteristics also specifically mention finger-stick, thereby confirming that the test is compatible with this mode of sample collection. These data have been independently confirmed in peer-reviewed literature.[31]

HCV antibody positive results were compared with results from a confirmatory venepuncture blood sample, where participants provided these.

Questionnaire

A brief anonymised questionnaire was developed to collect health-related data, including that involving participants' previous HCV exposure, testing and knowledge of HCV, as well as demographics, risk behaviour and general drug use. The questionnaire was self-administered, with frontline staff assisting respondents if required (eg, if participants experienced literacy issues).

Peer staff training and study protocol

A training workshop was designed and led by the Hub's hepatitis C nurse specialist. It included: information concerning hepatitis C risk factors and behaviours; current diagnosis, management and treatment options; the role of the peer worker in the study; conducting and interpreting the tests; managing biohazard material; administering the questionnaire; and a detailed module on pre/post-test counselling with an emphasis on communicating the results to participants who received a positive rapid test result, as results were given directly following the test. The day-long module was repeated directly prior to the commencement of testing at all sites, for all peer staff.

The training placed particular emphasis on peer staff explaining the project to prospective participants, gaining informed consent for testing, anonymity at 'phase 1' (see Table 1), and discussing positive and negative results with participants. Receiving a positive result was recognised as potentially traumatising for participants and, as a consequence, a post-test discussion check list was developed, as well as a specific sheet for counselling information.

The study was promoted by poster and verbally at the two urban sites a month prior to commencement, with information sheets available at the counter; and by the peer worker during their two preceding visits to the Mobile site.

All clients accessing the sites during the study's recruitment phase were invited to participate. An attendance sheet was developed to record responses, including previously participated/declined, with response rates calculated from these.

Table 1 shows the pilot's full protocol, over two phased visits, including the specific roles of peer and clinical staff. At the first visit, participants were assisted by peer staff to read the information sheet and verbally consent (Phase 1, NEX, 1 & 2). Consented participants were rapid tested by peer staff and then completed the questionnaire while waiting for their test result (5–15 minutes). If the rapid test was HCV antibody positive, participants completed a medical form including providing identifying details to the clinic staff, who then offered a confirmatory venepuncture test. Venepuncture samples were taken by the on-site nurse/phlebotomist and sent for laboratory testing (Phase 1, NEX & Clinic 1–3). Those providing a venepuncture sample were asked to return to discuss their results, including treatment options and commencing treatment if available on-site, or referral to treatment if necessitated off-site (second visit/Phase 2, 1–3). If providing contact details, non-attendees at the second visit were followed up by clinicians. Participants declining a venepuncture sample, eg, due to compromised veins or knowing their genotype and that it was not funded for treatment, were encouraged to return for a subsequent health check in six-months.

Data management and anonymity

All clients participating in the study were given a unique three-digit code, with the three sites each having a specific range of code numbers. Multiple iterations of each code were printed as stickers and all consents, clinical forms, questionnaires, rapid test devices and blood samples were tagged with the same code per participant. Results sent to and returned from laboratories were also tagged with the same codes.

All post-rapid test data capable of identifying previously anonymous participants, including names, contact details and national health identifiers (NHIs), were managed solely by clinicians at the respective sites. This was to avoid a breach of confidentiality/anonymity for those respondents receiving a reactive (HCV antibody positive) test result, who then provided a confirmatory venepuncture sample and therefore identifying information, including their NHIs. Participants did not provide any personal identifying data to frontline NEX staff.

Table 1: Testing and follow up protocol for targeted testing project.

When	**First visit/Phase 1**		**Second visit/ Phase 2 (2–3 weeks after first visit)**	
Where?	**NEX**	**NEX & clinic**	**NEX**	**NEX clinic**
What?	1. Information Sheet 2. Consent for testing 3. Pre-test discussion 4. Rapid test 5. Questionnaire	1. Post-test discussion if HCV antibody +ve. 2. If HCV antibody positive, complete medical forms authorising RNA/VL tests. 3. Take venous sample for RNA/VL.	Peer/NEX worker engage client.	1. Results of RNA/VL test received. 2. Post-test consult, discuss ALL treatment options. 3. Where viable (ie, genotype 1) arrange treatment at site, or off-site if required.
Who?	Peer/NEX worker	Phlebotomist/HCV nurse	Peer/NEX worker	HCV nurse

Data analysis

Descriptive statistics including means, standard deviations, ranges, frequencies, and percentages were used to summarise quantitative data. Differential sub-group effects were explored by site. An alpha level of 0.05 was used for all tests. Statistical analysis was performed using IBM SPSS v23.

Results

Rapid testing occurred at the two urban sites over a six-week period and at the Mobile site during the course of a scheduled three-day visit, following promotion of the study during two preceding visits. Across the three sites, 204 people were tested who met the inclusion criteria (seven respondents were disqualified as their questionnaires indicated they had not injected in the previous six months). Of these, 131 (64.2%) tested HCV antibody positive (reactive) and by the conclusion of the study's reporting period confirmatory venepuncture testing had produced 14 new diagnoses and seven people had commenced treatment. Of the remaining seven new diagnoses, three (two genotype 3 and one genotype 2) did not have access to funded treatment at that time, while the other four were preparing to commence treatment.

Test result confirmation

The 55 participants with a positive POCT HCV antibody result who provided a venous blood sample were all confirmed positive at the central laboratory (by ELISA). Participants with a negative POCT HCV antibody result were not approached for a venepuncture sample to confirm their result.

Participant details, including demographics, response rates, test results and previous testing history across the three sites are reported in Table 2. Due to replacement of excluded participants, the recruitment target of 200 individuals was marginally exceeded at n=204. This derived from concern about ineligible respondents at the Hub, resulting in the decision to over-sample this site. Ultimately, 134 clients participated at the Hub, with five of these being disqualified, having not injected in the previous six months. Two clients from the Mobile site were also disqualified for the same reason.

Demographic and response rate data show considerable variation across sites, including a significantly higher proportion of Māori at the Hub site (29.5%; X^2[1, N=129]=53.36, p<.0001), compared with the national proportion of Māori (15%). Ethnicity differences were non-significant at the Spoke (X^2[1, N=50]=0.8, p=.37) and Mobile (X^2[1, N=25]=0.38, p=.53) sites. There was also some variation in gender (58% to 68.8%) across sites.

Respondent serostatus

Participants' ages reflect the length of their injecting careers, with longer injecting careers predicting likelihood of being HCV positive. Therefore, the greater the median age of respondents per site (a proxy for injecting career length), the larger the proportion per site reporting injecting for ≥10 years, and concomitantly the higher the proportion receiving an HCV antibody positive POCT result.

For example, the higher proportion of respondents rapid testing HCV antibody positive in the Mobile sample (80%) corresponds with the greater proportion of that sample reporting injecting for ≥10 years (84%). By contrast, only 42% of the Spoke sample reported injecting for ≥10 years, and consistent with this, a lower proportion of 58% rapid tested HCV antibody positive. Numbers reporting injecting >10 years at the mobile site were significantly higher than at the Hub or Spoke sites (respectively 84% vs 58.6% and 42%; each p<0.01).

Proportions of those respondents at each site who provided a venepuncture sample to confirm their POCT AB+ve result are also reported. The lowest proportion here is from the Mobile site, with only 20% of positive rapid tests confirmed by venepuncture. While the Hub rate of venepuncture confirmation (37.5%) is almost twice that of the Mobile, the difference is most obvious at the Spoke site where almost three quarters (72.4%) of participants rapid testing HCV antibody positive provided a confirmatory venepuncture sample. Data not reported include numbers of participants at each site who were not asked to provide a confirmatory venepuncture sample based on attending clinicians' decisions. Reasons included those participants

Figure 1: Flowchart of participant recruitment and testing outcomes.

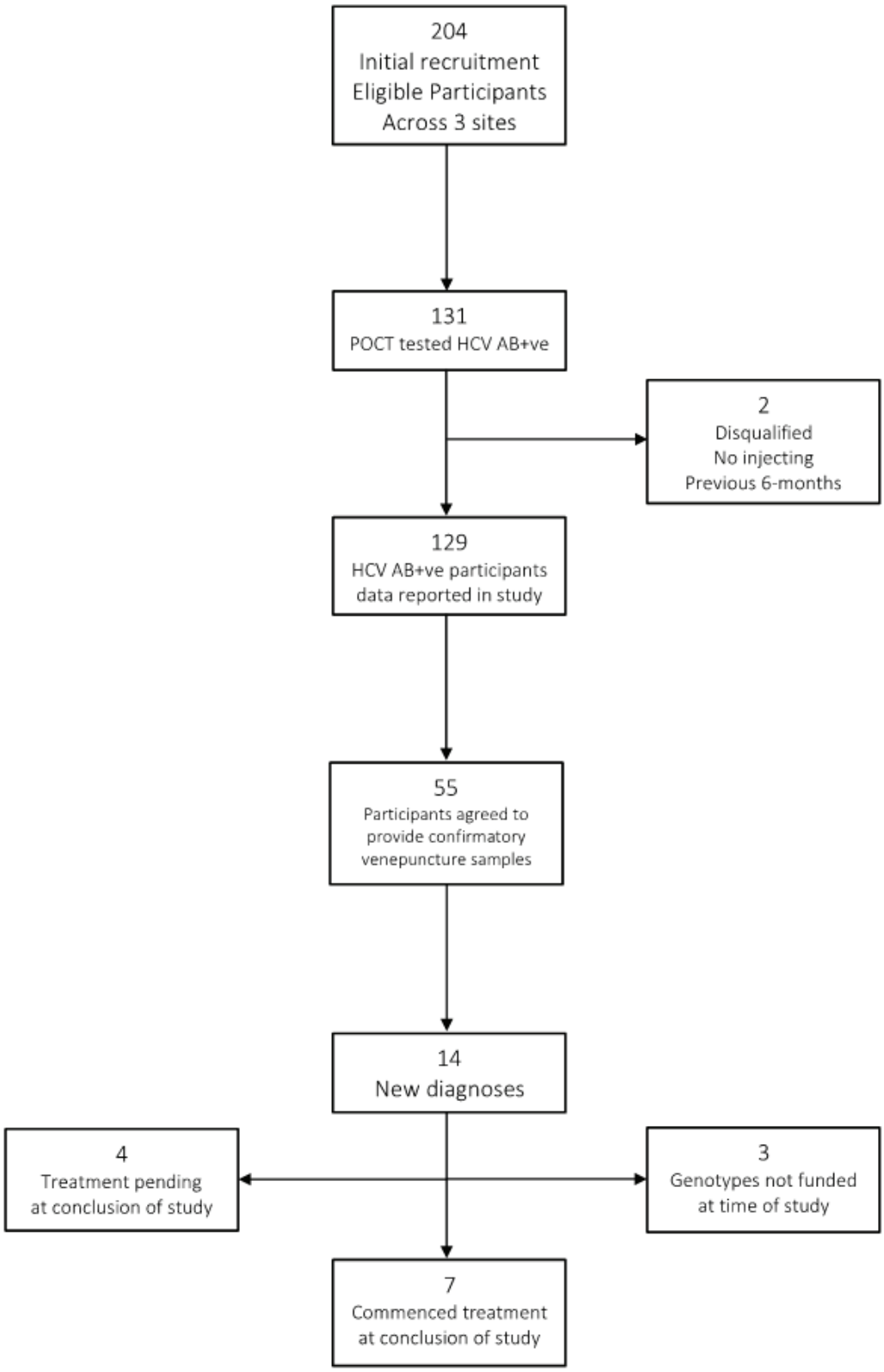

Table 2: Participant characteristics, study testing data and previous history of HCV testing for three NEX sites, by percentage.

Sites (n=x)	Hub (n=129)	Spoke (n=50)	Mobile (n=25)	Totals (n=204)
Demographics				
NZ European	66.5	84.0	80.0	72.0
Māori	29.5	14.0	16.0	24.0
Male	68.8	58.0	68.0	66.0
Mean age (range)*	42 (16–64)	38 (18–59)	47 (27–60)	43 (16–64)
Injecting ≥10 years	58.6	42.0	84.0	61.5
Response rate, POCT results, venepuncture and follow-up				
Response rate	19.2	40.6	84.3	24.2
POCT HCV +ve (n=129)	62.7	58.0	80.0	64.2 (n=129)
POCT HCV+ve confirmed by venepuncture†	37.5	72.4	20.0	41.9 (n=55)
DNA follow-up post-venepuncture†	10.7	4.7	0.0	7.2 (n=4)
Previous testing experiences				
Ever tested	76.4	76.0	95.7	79.3
Know result	93.6	89.1	95.2	95.0
Positive result	52.7	36.6	65.0	53.3
Venepunctured, knew previous result +ve				50.0 (n=38)
Not venepunctured, knew previous result +ve				76.1 (n=48)
Seen by specialist	61.7	45.4	46.1	56.3
Where tested				
Treatment service	14.7	34.0	8.0	18.6
Clinic	21.7	2.0	28.0	17.6
GP	12.4	18.0	16.0	14.2
Hospital	7.8	4.0	36.0	10.3
Prison	12.4	6.0	0.0	9.3

*Participant age in years.
† percentages of the 129 respondents testing HCV+ve by POCT.

currently receiving HCV treatment and thereby having recently provided a venous sample, those whose venous access was considered too compromised, and participants who declined outright for specific reasons, such as wanting to protect their veins for injecting. A small proportion of those providing confirmatory venepuncture samples did not return for follow-up consultations at the Spoke (10.7%) and Hub (4.7%) sites respectively.

Experience of previous HCV testing

History of HCV testing was also explored through the study's questionnaire. Participants were asked whether they had previously been tested for HCV, whether they knew their result and if so, what it was. Those tested were asked whether they had seen a specialist and also where they had received their test.

Of the 55 respondents providing a venepuncture sample 38 (69.0%) had previously been tested and answered whether they knew their results. Of these 19 (50.0%) reported they knew they were HCV antibody positive. Sixty-three respondents had not provided a venepuncture sample for various reasons and also answered whether they knew their previous HCV test result. Of these, 48 (76.1%) reported they knew their previous test result was positive. The implications of prior treatment and testing for ongoing rapid testing, and specifically for confirming rapid HCV antibody positive tests by venepuncture, are subsequently discussed.

Reported levels of ever tested across all sites were high (79.3%), with this most evident and significantly higher for the Mobile service (95.7%; $p<.05$) when compared with the other two sites. Overall, participants' claimed knowledge of their results was also high (95%) and, where they reported their result, generally reflected the trends indicated by the rapid test results. For example, participants from the Spoke had both the lowest rate of HCV antibody positive POCT results (58%) and reported the lowest infection rate when asked if they knew their serostatus (36.6%). Conversely, the Mobile site's high POCT reactive rate (80%) was reflected in the high rate of self-reported HCV-positive serostatus (65%).

The two most common HCV testing sites overall were drug treatment services (18.6%) and specialist HCV clinics (17.6%), though between-site variation was considerable. For example, over a third (34%) of those participating at the Spoke reported previous testing at the local drug treatment service, compared with almost 15% at the Hub and 8% at the Mobile site. By contrast, the specialist HCV clinic dominated testing at both the Hub (21.7%) and the Mobile service (28%). Other common testing sites included GPs, 18.0% at the Spoke and 16.0% for the Mobile site; at the Hub, 12.4% of participants identified prison as the site of their previous test, while for the Mobile site, hospital (36.0%) featured prominently.

Discussion

This study demonstrated the viability of administering rapid HCV antibody POC tests to NEX clients by non-clinician frontline peer staff. The required 200 respondents were recruited over six weeks at the two urban NEXs and over a three-day period at the Mobile site. The efficacy of POC testing and its appropriateness for use in this context to identify HCV-exposed NEX clients was demonstrated by the high proportion of participants receiving a positive result (64.2%) and the confirmed accuracy of these results when validated by venepuncture (n=55), with no discordant results reported. Overall, this study identified 14 individuals with newly diagnosed HCV infection, of whom half commenced treatment. Of the seven who were not treated, three were infected with HCV genotypes 2 & 3, for which no effective treatment was funded at the time of study, and four were yet to commence treatment at the study's conclusion.

In addition to identifying HCV-exposed clients and improving their treatment access, the study successfully assessed clients' previous HCV testing rates and their knowledge of test results. Through the interactions involved in testing participants, NEX staff engaged in the study reported strengthened relationships with clients in face-to-face interviews undertaken following the study's conclusion (data not reported).

Nonetheless, disparities in outcomes between sites also highlighted challenges facing a national rollout of POC testing at New Zealand NEXs. The most striking differences observed were in testing uptake and venepuncture confirmation of HCV antibody positive test results. The high testing uptake at the Mobile site of 84.3% could be due to its clients enjoying an individualised service with regular personal contact from a dedicated NEX staff member, a factor that others have found to help uptake.[12] These relationships are well-established, often having been built over many years. Further, while the Spoke testing uptake of 40.6% is acceptable for a project of this nature, the Hub's much lower rate of 19.2% prompts interrogation. One explanation for this is that Hub staff may have struggled to engage their clients in the project. Mitigating this possibility is that the Hub exchange is the busiest in the country, with more clients and staff than the other sites, as well as a more transient population associated with large cities. This contrasts with the more personal service at the Spoke and Mobile sites. Even so, this disparity between the Hub and Spoke

sites reinforces the importance of peer engagement and supportive management of staff involved in recruiting clients for POCT.

Previous HCV testing may have had some impact on participants' decisions to provide a venepuncture sample. This is most evident for the Mobile site, where only 20% of participants had their positive POCT result confirmed by venepuncture and 95.7% reported previous testing. However, differences in venepuncture proportions at the Hub and Spoke sites, 37.5% and 72.4% respectively, are not matched by historic HCV testing, which was similar, ie, Hub (76.2%) and Spoke (79.2%).

Negative outcomes from lengthy injecting careers may also explain declining to provide a venepuncture sample. Thus, the significantly higher proportions of clients reporting >10 years injecting (a proxy for greater HCV exposure) at the Mobile and Hub sites,[32] compared to the Spoke, also contributes to their lower venepuncture sampling. For example, the staff member undertaking POCT at the Mobile site reported that clients of that service were unwilling to 'share' their veins for confirmatory testing when they knew they were already HCV antibody positive. This reluctance was exacerbated where clients were also aware of their genotype not being eligible for funded treatment at the time of the study.

The recent funding of safe and highly effective pan-genotypic DAA therapy in New Zealand has therefore increased the need to educate NEX clients about the availability and benefits of treatment. Developing appropriate educational materials and methods, including suitably devised hepatitis C awareness campaigns, will become crucial to potentially eliminating HCV.

The strengths of the study include its successful recruitment of NEX clients into testing and treatment, the demonstrated ability of non-clinical peer staff to manage the testing and also strengthen their relationships with clients. There are, however, weaknesses. While previous testing and different site characteristics may have influenced participants' engagement with the study, differences between sites' response and venous sample-confirmation rates suggest that strategies employed to recruit participants may have varied across sites. This is most evident for the Hub's low response rate (19.2%) and where both the Hub and Mobile sites had low proportions of HCV antibody positive participants providing venepuncture confirmation, compared with the Spoke site. Staff at these sites may have employed less-engaging strategies to encourage participation. Regarding venepuncture sampling, some recruiting staff at the Hub and Mobile sites had clinical oversight involvement with potential participants, unlike at the Spoke site, and may have been less inclined to seek a venous sample. Additionally, the management structures differed between the Hub and Spoke sites, with line management at the smaller Spoke site more directly involved with participant recruitment, as well that manager being the site's phlebotomist.

Conclusion

The recent funding of safe and highly effective pangenotypic DAAs provides impetus for deploying innovative strategies for testing, diagnosing and treating those most at risk of chronic HCV infection. While it is well recognised that PWID are a primary target for "treatment as prevention", this population is difficult to reach and the services available to it are frequently constrained by limited resources. As the workforce most aligned with the population, peer staff at NEXs are ideally placed to provide rapid POC HCV testing, and to encourage and support their clients into treatment. The present study's successful testing of over 200 individuals by peers in a short timeframe, with 64% identified as HCV antibody positive, resulting in 14 new diagnoses and seven people started on treatments, underscores this. Access to simple, inexpensive tests and developing the knowledge and skills to successfully administer them builds staff capacity, strengthens relationships with clients, increases opportunities for harm reduction education and resource sharing, and empowers the PWID community. POCT when combined with HCV treatment at NEXs will shut off the tap of new infections in PWID and facilitate HCV elimination in this country.

Competing interests:
Geoff Noller is employed as a researcher with the Needle Exchange Services Trust (NEST), peak body of the New Zealand Needle Exchange Programme.

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