

**REPORT OF THE
VIRGINIA DEPARTMENT OF HEALTH**

**Evaluation of Comprehensive
Harm Reduction Programs in
the Commonwealth of Virginia
(Chapter 183, 2017)**

**TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA**



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**Evaluation of Comprehensive Harm Reduction Programs in the
Commonwealth of Virginia**

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Executive Summary

Effective July 1, 2017, the *Code of Virginia, Section 32.1-45.4* authorized the implementation of Comprehensive Harm Reduction (CHR) programs during public health emergencies in order to combat the impact of the opioid crisis in Virginia. Since the approval of this act, CHR sites in Wise County, Richmond City, and Smyth County have been authorized and are providing services.

The three CHR programs are in the early stages of operation, with the first site opening in July 2018 and the most recent site opening in December 2018. As expected with program start-ups, initial uptake at each site was slow, but utilization has grown as awareness of the programs increased and potential participants gained trust in using the services.

The CHR sites provide sterile hypodermic needles and syringes and dispose of used ones, provide harm reduction counseling and educational materials, test for human immunodeficiency virus (HIV), hepatitis C virus (HCV), and other sexually transmitted diseases (STDs), distribute opioid overdose reversal agents and condoms, and provide referrals for substance use disorder (SUD) treatment, other medical care and social services.

Program data collected by the Virginia Department of Health (VDH) were provided to independent evaluators at the University of Virginia's Center for Global Health in the School of Medicine for assessment and inclusion in this report.

Across the three authorized sites, 241 participants enrolled and received over 28,000 sterile syringes in exchange for nearly 25,000 used syringes. Of the 45 participants newly diagnosed or previously diagnosed with HCV, 41 (91%) were linked to HCV care. Sites provided 325 doses of naloxone to participants who reported 32 overdoses reversed. In total, 85

participants received referrals to SUD treatment with 28 of the participants attending their first appointment. An additional six participants are awaiting available appointments and eight have reported becoming abstinent from drug use.

The report appendix includes additional data analyzed by VDH comparing program metrics from Virginia CHR programs with those from other states. CHR sites continue to report data, with most current information available at <http://www.vdh.virginia.gov/disease-prevention/chrdata/>.

Introduction

This report provides a preliminary evaluation of CHR programs in the Commonwealth of Virginia and describes uptake of CHR services and future needs for CHR services. It provides evidence for organizational capacity to deliver CHR services and speaks to local need for the services. It further describes supplemental wrap-around services offered by CHR programs, including referrals to medical and social services, infectious disease testing and prevention, and provision of overdose reversal agents. This report ends with recommendations for future evaluation efforts to measure the impact of Virginia's CHR programs.

Background

In November 2016, the Virginia State Health Commissioner (the Commissioner) declared the opioid crisis a public health emergency in the Commonwealth of Virginia (Levine, 2016). In response, the General Assembly amended the *Code of Virginia, Section 32.1-45.4* (Virginia Acts of Assembly, 2017), which allows the Commissioner to authorize eligible localities to establish CHR programs.

CHR is a set of public health strategies aimed at reducing the burden of disease resulting from illicit drug use (Harm Reduction Coalition, 2019). CHR programs include initiatives such as syringe exchanges, naloxone distribution, condom distribution, infectious disease screening for HIV and HCV, delivery of HIV Post Exposure Prophylaxis (PEP) and Pre-Exposure Prophylaxis (PrEP), and referrals to other services (Virginia Department of Health, 2019). The goal of CHR programs is to encourage safe injection practices among people who inject drugs (PWID) to reduce the transmission of blood borne viruses and reduce overdose mortality (Virginia Department of Health, 2019).

CHR programs have been found effective in reducing the transmission of injection-related infectious diseases in the United States and globally (Bluthenthal, Anderson, Flynn, & Kral, 2007; Bramson et al., 2015; CDC, 2017; Mathers et al., 2010; Wodak & Cooney, 2006; World Health Organization, 2004). Federal reports as early as 1993 recommended needle exchange programs as a strategy to address the HIV epidemic (United States General Accounting Office, 1993). Studies from Baltimore and Los Angeles offer best practices for implementing successful programs (Quinn, Chu, Wenger, Bluthenthal, & Kral, 2014; Sherman et al., 2015) while cases from North Carolina and Indiana provide examples of executing syringe exchange programs in the midst of mixed political support (Cloud, Castillo, Brinkley-Rubinstein, Dubey, & Childs, 2018; Meyerson et al., 2017).

While CHR programs have existed across the United States since the late 1980s, these initiatives are new to the Commonwealth of Virginia. As of June 2019, three CHR sites are operational in the state. The first site was opened in July 2018 by the Wise County Health Department in the Lenowisco Health District. Health Brigade, a free clinic in the city of

Richmond, opened the state's second CHR program in October 2018, followed by the Smyth County Health Department in the Mount Rogers Health District in December 2018.

CHR statutory authorization is set to expire on July 1, 2020. Enrollment at sites was initially slow due to a number of factors including time needed to create awareness and to build rapport with potential participants; however, enrollment is steadily increasing. Utilization, service referrals, and provision of harm reduction services from the first 10 months of the programs can provide preliminary evidence for program success.

Evaluation Methods

Each CHR program tracks quarterly utilization metrics including number of participants seen, number of syringes distributed and returned, and other harm reduction services offered. Sites also report progress towards their stated objectives and, if relevant, barriers hindering progress towards goals. Data included in this report were collected from July 1, 2018 to May 31, 2019.

These metrics are compiled by the VDH and have been reported to an independent evaluation team at the University of Virginia's (UVA) Center for Global Health in the School of Medicine for assessment and inclusion in this report. VDH requested that UVA complete an independent evaluation that included the following objectives: 1) examine the utilization of CHR programs during their first year of operation to determine effectiveness; and 2) examine the number of and outcomes of referrals to HIV and HCV testing and other services provided at CHR sites to date. None of the three sites has been operational for more than a year, so examining the reduction in disease transmission, the impact of naloxone distribution for the reversal of overdose on county/city-wide overdose rates, and impact of CHR on the socio-economics of the jurisdictions would be premature. Phase One of the evaluation, which

examined the utilization of services, concluded May 31, 2019. Phase Two of the evaluation will conclude December 31, 2019 and will include participant and provider feedback and the examination of disease and overdose trends over time.

VDH's report to the General Assembly in 2018, *Preparing for Comprehensive Harm Reduction*, detailed the substantial community mobilization efforts needed to garner law enforcement, public health and local government support to demonstrate readiness to conduct CHR services. The average length of time to establish a CHR site has been seven months. A large component in readiness is engaging with law enforcement around paraphernalia laws, as Virginia's CHR statute provides protections for CHR site employees and volunteers but not for program participants.

To date, there have been no complaints made to VDH or the individual CHR sites regarding CHR programs in these jurisdictions. No paraphernalia charges have been levied against participants in the jurisdictions where they receive their supplies, and only one charge was levied against a participant in another jurisdiction where CHR has not been authorized. Law enforcement in the operating localities has been supportive of CHR and has provided referrals to individuals in need of services.

Virginia's first year of CHR has largely been successful, as the evaluation by UVA and an additional report in Appendix A by VDH will show; however, more time is needed to develop programs in other parts of the state experiencing high HCV morbidity and overdose rates. In Phase Two of this evaluation, participant experiences will be analyzed to determine their satisfaction with the intervention and additional provider feedback will be gathered. VDH and UVA will also seek to evaluate the impact of the lack of participant protections on service utilization rates and low participation by African-Americans, especially in urban areas. If not

extended, the sunset clause in the CHR statute would limit the ability to collect the necessary data to fully evaluate the effectiveness of this intervention.

Evaluation of the Virginia Department of Health's (VDH) Comprehensive Harm Reduction (CHR) Program by University of Virginia Medical School (UVA) (Phase One)

Findings

Objective 1.1: Evaluate utilization metrics for the first three operational CHR sites

Participants

A total of 241 unique participants sought services at one of the three CHR programs between July 2018 and May 2019. Eighty-two participants (34%) were female, 155 (64%) were male, and four (2%) were transgender. The most common age group was 25-29 years, with 55 participants (23%) falling into this age category. Twelve participants (5%) were 18-24 years, 47 (20%) were 30-34 years, 48 (20%) were 35-39 years, 31 (13%) were 40-44 years, 17 (7%) were 45-49 years, 12 (5%) were 50-54 years, 8 (3%) were 55-59 years, and 11 (5%) were over 60 years. The majority of participants (221, 92%) were White, with the remaining 20 participants reporting Asian, Black, Native American, Latino, or other race. Of the 157 participants who reported their drug of choice, 100 (64%) reported opioids and 57 (36%) reported non-opioids.

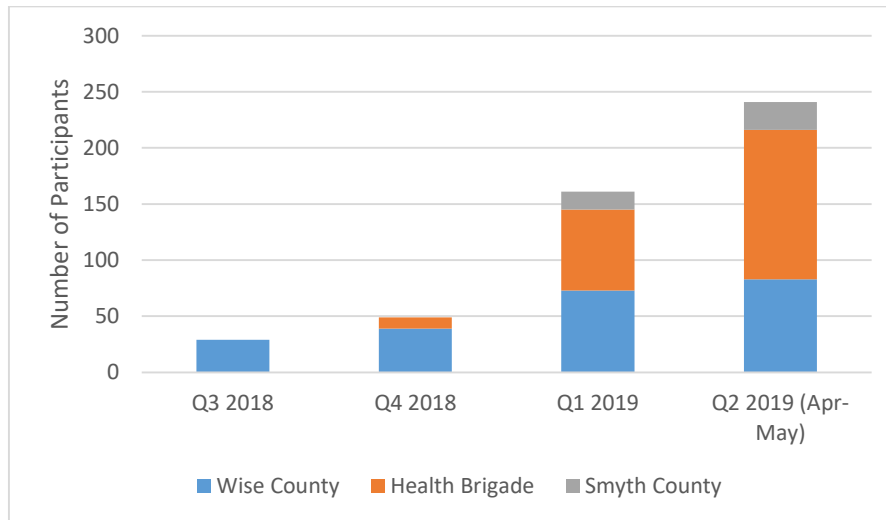
Utilization over Time

In the third quarter of 2018, with only one CHR site operational, 29 participants enrolled. Utilization grew during the fourth quarter of 2018 when the second CHR site became newly operational. During the fourth quarter of 2018, 20 new participants enrolled for a 2018 cumulative total of 49 unique participants.

The first quarter of 2019 saw continued growth at the two existing sites, plus the addition of a third site. One-hundred and twelve participants enrolled in the first quarter of 2019 and 80 enrolled in the first two months of the second quarter (data available to date), bringing the total participants enrolled to date to 241 (Figure 1).

Across the three sites, eight participants withdrew from the program because they stopped injecting.

Figure 1: Cumulative Number of Participants over Time



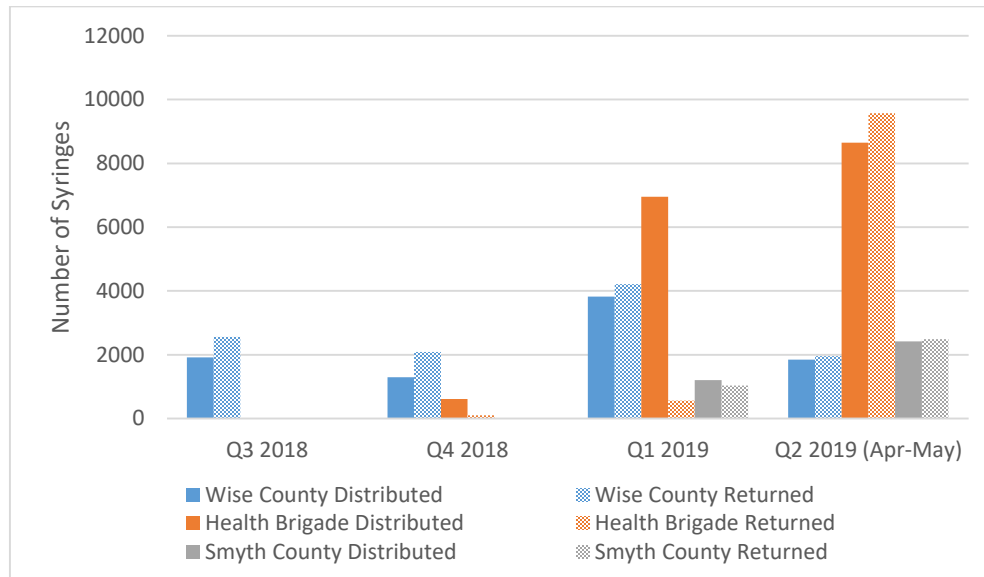
Syringe Distribution over Time

In the first quarter of program operation, Wise County distributed 1,919 sterile syringes and collected 2,557 used syringes for proper disposal. The Wise County site continued to collect more syringes than it distributed in each quarter through May 2019, with an overall site return rate of 122%.

Conversely, the Health Brigade distributed more syringes than it collected during its first two quarters in operation, with 613 syringes distributed and 100 returned in Q4 2018 and 6,952 syringes distributed and 564 returned in Q1 2019, for an overall return rate of 9%. This initial high distribution of syringes was followed by a period with more syringes returned than distributed. In the first two months of Q2 2019, 9,570 syringes were returned to the Health Brigade CHR and 8,468 syringes were distributed, for a Q2 2019 return rate of 110%. The site's overall site return rate since opening was 63%. Smyth County distributed approximately the

same number of syringes they collected, with a total of 3,621 syringes distributed and 3,519 syringes collected for an overall return rate of 97% in its two quarters of operation.

Figure 2: Number of Syringes Distributed and Collected per Quarter



Other Harm Reduction Services

At all three sites, 100% of participants received individual harm reduction counseling and materials about where and how to access SUD treatment, safer injection practices and preventing infections, local PrEP programs, and local support group meeting times and locations.

Additionally, across the three sites 64% of participants received condoms. Condom distribution serves as another important harm reduction intervention to reduce the transmission of infectious diseases such as HIV and STDs. Participants who did not receive condoms reported not wanting condoms because they were in exclusive or monogamous relationships or they reported not being sexually active.

Summary by Site

Wise County has the longest running CHR program in the state. The originally estimated start date for the Wise CHR program was April 2018 and the actual start date was July 2018. Participants are primarily referred to the program through word of mouth, a process that necessitated out of a widespread distrust of the system, including fear of being arrested for seeking services at the CHR. Word-of-mouth referrals help to dispel these fears. Additional provider referrals came from Ballad Health System and Stone Mountain Health Services. The CHR program partnered with a community advisory board to create informational materials for provider referrals. In response to feedback from participants, the program is also working with the community advisory board to address transportation issues that cause a barrier to accessing services. Despite fear and transportation issues, the Wise County CHR program continues to grow and successfully provide harm reduction services with a high syringe return rate (122%), with 8,885 sterile syringes distributed and 10,819 used syringes collected.

The Health Brigade site was the second operational CHR program in the Commonwealth. It has seen a large increase in utilization since its inception, although it should be noted that the population in its catchment area is significantly larger than the population in Wise and Smyth Counties. The Health Brigade CHR program is need-based and does not require a 1-to-1 syringe exchange. Since their program opened, they distributed 16,213 sterile syringes and collected 10,234 used syringes. Outreach, including to jails and prisons, street-based outreach, and community advertising has been successful, leading to a rapid growth in participation after the program's first quarter. As with the Wise site, barriers to participation include fear and mistrust of program goals. Word-of-mouth referrals by current participants help to dispel fears. Program

requirements to properly dispose of all syringes helps to ensure used syringes are returned despite not having a 1-to-1 exchange policy.

The most recent CHR program opened in Smyth County in December 2018 and saw its first participant in Q1 of 2019. Reasons for slow initial enrollment included lack of awareness of the program, fear, and stigma associated with drug use. The program is working to bring publicity to the community about the program. Despite a slow start, enrollment at the Smyth County site has grown to 25 participants and has distributed over 3,600 syringes and collected over 3,500 syringes since its inception, indicating a need for its services. Enrollment at all sites will be monitored continuously to observe trends in subsequent months.

Objective 1.2: Evaluate testing and referrals provided by the CHR sites

HIV and HCV testing

HIV and HCV are the most commonly acquired blood-borne viruses transmitted through injection drug use. As such, CHR programs should include routine testing for these two viruses and linkage to care for anyone testing positive. Across the three sites, 69 participants (29%) were tested for HIV. None of these participants tested positive. Of two known HIV cases who were out of care, both were successfully linked to HIV care. Sixty-nine participants (29%) were tested for HCV and of these, 25 (36%) were found to be positive. An additional twenty participants were previously known to be HCV-positive and out of care. Of the 45 participants newly diagnosed or previously out of care, 41 (91%) were linked to HCV care. No participants who previously tested negative for HIV or HCV were subsequently found to be positive since enrolling in a CHR program.

Patients who were not tested for HIV or HCV reported not being interested in testing, feeling overwhelmed with services offered, or not perceiving to be at risk because they do not

share syringes and are not sexually active. Also, some participants already knew their status from a recent test and did not need to be tested. Finally, some participants at one site arrived too late in the day to complete testing and were asked to return on a future date.

Hepatitis B (HBV), Tuberculosis, and STD Testing and Hepatitis A (HAV)/B Vaccinations

The CHR sites also provide referrals to testing for HBV, TB, and STDs, as well as HAV/HBV vaccinations. Referrals to these services were provided less frequently, but the testing and/or vaccination was successfully completed for all participants who were referred. Wise County provided 32 referrals for HBV testing, 23 referrals for STD testing, one referral for TB testing, and 10 referrals for the HAV/HBV vaccine. Health Brigade provided eight referrals for HBV testing, four referrals for STD testing, and no TB test referrals or HAV/HBV vaccinations. Smyth County provided four referrals for HBV, six referrals for STD testing, no referrals for TB testing, and 10 referrals for the HAV/HBV vaccine. None of the participants at any site tested positive for HBV, STDs, or TB.

Social Services, Medical Care, and Health Insurance Enrollments

Each CHR program provides referrals to wrap-around services including social services (i.e. housing assistance, homeless shelters, and/or food assistance/food pantries), medical care, and health insurance enrollments. These services help to address comprehensive medical and social needs for all participants, resulting in broader benefits beyond provision of harm reduction services. Referrals to additional services were common, with 149 links to social services, 30 links to medical care, and 38 links to health insurance enrollment. The majority of referrals came from Health Brigade, which made 115 referrals to social services, 17 to medical care, and 32 to health insurance enrollment. Wise County provided 34 referrals to social services, two to medical care, and six to health insurance enrollment. Referrals at Smyth County were lower,

with no referrals to social services or health insurance enrollments, but 11 referrals to medical care.

Pre-Exposure Prophylaxis (PrEP) and Non-Occupational Post Exposure Prophylaxis (PEP)

PrEP and PEP are HIV prophylaxis medications designed to be taken before or after exposure to HIV, respectively. The Wise CHR linked one participant to PrEP and two participants to PEP. The Health Brigade site provided three referrals to PrEP. Smyth County did not provide PrEP or PEP to participants. Reasons for low utilization of these services may be due to a lack of demand, lack of awareness, or lack of availability. One participant interested in receiving PEP was unable to receive it due to lack of a provider on site. The Lenowisco Health District is working on solutions to make PEP more readily available.

Naloxone

Naloxone is an opioid overdose reversal agent and is currently available without a prescription to all Virginians as a result of a standing order issued by the Commissioner. Naloxone is a safe and effective medication that can be administered by any friend, family member, or bystander in the event of an opioid overdose. Because nearly two-thirds of participants (64%) reported opioids are their drug of choice, naloxone distribution is especially vital for this population. Across the three sites, 325 doses of naloxone were distributed to participants. The majority were distributed at Health Brigade (265 doses) followed by the Wise County site (58 doses) and the Smyth County site (2 doses). Health Brigade reported 20 naloxone reversals and the Wise County site reported 12.

Substance Use Disorder (SUD) Treatment

CHR sites can serve as an entry to SUD treatment for participants who are ready to begin the recovery process. All three CHR sites referred participants to SUD treatment. At the Wise

site, the most common type of SUD referral was to a 12-step or peer support group (N=19), followed by mental health or psychiatric care (N=13). The Wise County CHR also made seven referrals to peer recovery coaches, one referral to medication-assisted treatment, and two referrals to other SUD treatment programs. Health Brigade provided a total of 34 referrals to SUD treatment: 14 to medication-assisted treatment, 14 to individual or group therapy with a mental health or SUD counselor, five to mental health or psychiatric care, and one to a peer recovery coach. The Smyth County site provided three referrals to peer recovery coaches, two referrals to mental health or psychiatric care, and one referral each to a 12-step or peer support group and to other SUD treatment. In total 83 participants received referrals to SUD treatment with 28 of the participants attending their first appointment. An additional six participants are awaiting available appointments and eight have reported becoming abstinent from drug use.

Barriers to Services

Referrals to wrap-around services have remained stable throughout the duration of the CHR programs. Though more information is still needed to fully assess whether comprehensive needs are being met, preliminary results point to growing success of these programs in linking participants with key supplemental services. Initial reporting also highlights barriers to receiving referral services. Some participants reported not wanting referral services for fear of attracting unwanted attention by their families for seeking services. These participants were offered information about alternative sources of help, including housing assistance and community food pantries. Access to reliable transportation also remains an important barrier in the Southwest region of Virginia. The Wise County CHR program is exploring options to address transportation concerns.

Recommendations

Utilization of Harm Reduction Services

In the early stages of CHR in Virginia, uptake of services has grown at all three sites. Increasing utilization suggests a continued demand for CHR services and sufficient organizational capacity to provide these services. Because VDH continues to observe an increase in participation, it is unlikely that the demand is fully met. Until reaching a stabilization in new participants, additional services are likely needed. Continued monitoring of utilization at the three sites is recommended to assess future growth in participation and the potential need for additional sites and/or additional hours at current sites. Future growth may require additional resources to ensure adequate staffing, syringe availability, and access to supplemental services.

Initial lack of awareness of the programs, as well as fear and mistrust, contributed to a slow initial enrollment at all sites. These barriers were mitigated over time through word-of-mouth referrals from existing participants. Fears included participants thinking the programs served as a front for law enforcement or as a setting to preach against injecting drugs. Addressing these fears and building rapport in the community takes time. Though each site has made progress recruiting participants, a slower increase was observed at the Wise and Smyth County sites where fear and mistrust may be particularly strong. As the programs continue to grow and fears continue to abate, the potential for a “snowball” effect is anticipated as peer referrals expand throughout the community.

More syringes have been distributed than returned, with an overall return rate of 86% across the three sites, and individual site return rates ranging from 63% to 122%. Although the two sites with a 1-to-1 exchange policy have higher return rates, syringe collection remains adequate without the 1-to-1 requirement. This is likely related to the counseling provided during

the intake process whereby all participants must agree to dispose of their syringes in a responsible manner. The Health Brigade CHR also provides safe disposal containers to over 80% of participants, which is recommended as best practice for all CHR sites. Some participants cite fear of drug paraphernalia laws as a reason for not returning used syringes. Sites should continue to encourage the safe disposal of used syringes and emphasize proper disposal techniques during the program intake process.

All sites report universal delivery of CHR counseling and educational materials to all participants. This practice should continue. Harm reduction materials and knowledge from counseling can be shared within participants' social networks, allowing the benefits of the program to be realized in the larger community of PWID.

Two of the three sites are located in the Southwest health region and one site is located in Richmond City. Opioid overdose events are high in these two regions. However, other localities in Virginia suffer from similarly high rates of opioid overdose, Emergency Medical Services (EMS) naloxone administration, and HCV and HIV infections. These areas also demonstrate a need for harm reduction services and should be considered for additional CHR sites. Potential barriers to implementing CHR programs in new localities should be examined to ensure programs can be developed in all approved areas with demonstrated need.

Testing and Referrals

All three CHR sites provide referrals to connect participants to necessary services outside the CHR program. The holistic approach to CHR programs ensures participants are linked not only to healthcare services related to injection drug use, such as HIV and HCV testing, SUD treatment, and naloxone, but also to social services such as housing and food assistance and health insurance enrollment. These referral services in combination improve the comprehensive

health and well-being for participants. As CHR programs expand, additional resources will be needed to maintain adequate provision of testing and prevention services.

All HIV tests and the majority of HCV tests were negative. VDH expects to see continued low rates of HIV and HCV acquisition among participants who practice safe injection behaviors recommended at the CHR sites, such as injecting with sterile needles and not sharing syringes. Although the low positivity rate could imply that increased testing is not needed, it may alternatively suggest that highest risk participants are not being tested. It is recommended that sites continue to screen for participants at highest risk for HIV and HCV acquisition and offer HIV and HCV testing to high-risk participants.

Referral to SUD treatment is an essential component of CHR programs. Not all CHR participants will continue to inject drugs. Having a safe and trusted center to learn about treatment options facilitates the connection to appropriate treatment. A variety of SUD treatment options are available, including individual and group counseling, 12-step programs, and medication-assisted treatment. The three CHR programs provide referrals to a comprehensive range of different programs, allowing participants to find the treatment option that best meets their needs. It is recommended that CHR sites continue to provide information about SUD treatment options and work with participants to find suitable treatment and counseling options for participants who are interested. To alleviate concerns about stigma and to ensure that participants feel welcome and return to the CHR sites, referrals to SUD treatment services should be readily available and encouraged, but not forced.

Provision of PrEP and PEP was relatively low across the programs. Initial reports suggest a higher demand for these services than was met. Sites should ensure adequate access to PrEP and PEP and should examine site-specific barriers to providing these medications.

Similarly, access to naloxone is essential in this population and demand was correspondingly high. Naloxone was distributed at a rate higher than one dose per person. Efforts should be made to ensure continued availability of naloxone and overdose reversal training throughout the communities.

Further downstream benefits of these services are yet to be observed. Reductions in overdose mortality and county-wide infectious disease rates are likely, but data are not yet available to measure these changes. Specifically, 2019 data on overdose events and EMS naloxone usage are not yet available, nor are Virginia State Police data. As more time passes, increased data availability will allow for a more comprehensive assessment of the effectiveness of counseling, education, and referrals to wrap-around services.

Conclusion

Since the approval of CHR programs in the Commonwealth of Virginia, three sites have become operational. All three sites reported a later start date than intended but each was able to overcome initial challenges and successfully enroll participants. Across the three sites, 241 participants enrolled and received over 28,000 sterile syringes in exchange for nearly 25,000 used syringes. CHR educational materials and counseling were provided to all participants universally, and additional services including condom distribution, HIV/HCV testing, naloxone distribution, and referrals to additional medical and social services were provided. Preliminary evidence supports the continued need for these services.

The *Code of Virginia, Section 32.1-45.4* authorized the establishment of CHR programs in areas of need following approval from local authorities. Even in areas that meet these criteria, the implementation of CHR programs requires time and resources. A longer evaluation period is

needed to build upon the preliminary evidence that suggests a benefit of CHR programs in reducing blood-borne pathogen transmission and overdose morbidity and mortality.

Utilization metrics provide a useful preliminary evidence base for the needs of the communities served. However, numerous barriers and unmet needs exist that cannot be observed through quantitative data alone. In planned Phases II and III, analysis will examine distal factors related to CHR programs (Phase II) and use qualitative methods to better understand needs, perceptions, and barriers to harm reduction (Phase III). These supplemental analyses will help demonstrate the larger community impact of the harm reduction programs as well as the cost, quality, and accessibility of the programs.

Appendix A: Virginia Department of Health Supplement to the University of Virginia Evaluation

Comprehensive Harm Reduction in Virginia: A Comparison of Three Key Outcomes with Neighboring States

As Virginia's first CHR site ends its first year of operation, VDH compared data with that of neighboring states with syringe services programs to help assess how Virginia's sites are performing. In doing so, VDH gleaned data from reports that represented all sites in North Carolina, two county sites in Kentucky, the Charleston/Kanawha site in West Virginia, and the city of Baltimore, Maryland. The following indicators were compared.

Syringe Return Rates

Returning syringes to harm reduction sites enables safe disposal and prevents syringes from being discarded in public areas. A frequently voiced concern of having syringe exchanges in jurisdictions is the fear of additional syringes being found in public places, creating health risks from accidental needle sticks. VDH's protocols recommend sites distribute enough syringes to a participant so that he/she only has to use a syringe once and then discard it in a sharps container furnished by the site until those syringes can be brought to the site for disposal. This also reduces the risk of needle sticks to first responders and law enforcement when "patting down" a suspect. Removing used syringes means removing a potential source of the transmission of HCV and HIV. The table below shows Virginia's return rate ranged from 2% to 44% higher than programs in its neighboring states.

Table 1: Comparison of Syringe Return Rates

Reference	Location	Date	Syringes Distributed	Syringes Returned	Return Percentage
North Carolina Dept. of Health and Human Services	Statewide	2017	1,154,000	489,000	42%
West Virginia Dept. of Health and Human Resources	Charleston/ Kanawha Co.	2018	642,000	421,000	66%
City of Baltimore Health Dept.	Baltimore	2016	1,225,800	907,200	74%
Harris, Univ. of Kentucky	Fayette Co and Jefferson Co.	2016	11,425	9,620	84%
Virginia Dept. of Health	Richmond City, Wise and Smyth Co's	2018-2019	28,720	24,570	86%*

*Two of the three sites in Virginia had over 100% return rates

HCV Testing and Positivity

HCV is readily transmitted by sharing items used to inject drugs. Since CHR sites focus on PWID, many new cases of HCV are detected by testing at those sites. When new sites open, they are more likely to encounter individuals living with HCV who do not know their status. By providing testing and detecting new cases, the rates in that area are expected to climb before they fall, due to additional testing in a population that likely has been exposed to the virus through sharing injection equipment. When these individuals are identified and referred for HCV treatment, there are fewer people to transmit the virus.

The following table compares HCV testing and diagnosis with North Carolina and Charleston/Kanawha County, WV syringe exchange programs with Virginia's three CHR sites.

Table 2: A comparison of HCV testing outcomes- Virginia, North Carolina and West Virginia sites.

Reference	Location	Date	# HCV Tests Performed	# New Positive HCV Tests	Positivity Rate
North Carolina Dept of Health and Human Services	Statewide	2017	738	138	18.7%
West Virginia Dept of Health and Human Resources	Charleston/Kanawha Co.	2018	276	95	34%
Virginia Dept of Health	Richmond City, Wise and Smyth Co's	2018-2019	69	25	36%

As expected Virginia's positivity rate (number of new infections/total number of participants tested) are high because many CHR participants have not been tested in the past. Future evaluations will likely show this number leveling off, then decreasing as more participants seek treatment for HCV and no longer need to share injection equipment.

Residency of participants

While Virginia has no residency requirements for participants in CHR programs, it is important to know that the PWID, in the jurisdiction the site is located, are utilizing the service. A syringe services site was shut down in a neighboring state when the town administrators became concerned that too many individuals were being drawn in because of the availability of

services and were then loitering in public places (71% of participants were residents, 8% from bordering counties, 2% from out of state, and 18% unknown). After this incident, jurisdictions in Virginia became concerned a similar occurrence would happen in their communities.

However, a review of current CHR data shows that 83% of all Virginia participants live in the same jurisdiction where they can access CHR services and 97% live in the same jurisdiction or a neighboring county. Similarly, 97% of Wise County CHR participants reside in the county or Norton City.

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