



HHS Public Access

Author manuscript

J Addict Med. Author manuscript; available in PMC 2024 March 10.

Published in final edited form as:

J Addict Med. 2023 ; 17(5): e287–e289. doi:10.1097/ADM.0000000000001164.

High Primary COVID-19 Vaccine Series Completion by People Who Inject Drugs When Co-Locating Services at a Syringe Services Van

Omeid Heidari, PhD, MPH, ANP-C^{1,2}, Katie J. O'Connor, MD³, Diane Meyer, RN, MPH^{2,4}, Victoria Cargill, MD, MSCE⁵, Kelly Lowensen, RN, MSN², Jason E. Farley, PhD, MPH, ANP-BC²

¹Department of Child, Family, and Population Health Nursing, University of Washington, School of Nursing

²Center for Infectious Disease and Nursing Innovation, Johns Hopkins University, School of Nursing

³Departments of Anesthesiology, Critical Care Medicine and Emergency Medicine, Johns Hopkins University School of Medicine

⁴Center for Health Security, Johns Hopkins University, Bloomberg School of Public Health

⁵Milken Institute

Abstract

Objective: To describe the impact of co-locating COVID-19 vaccinations with local syringe service programs (SSP) on vaccine completion among people who inject drugs (PWID).

Methods: Data were derived from six community-based clinics. PWID who received at least one COVID-19 vaccine from a co-located clinic partnering with a local SSP were included in the study. Vaccine completion was abstracted from electronic medical records (EMR); additional vaccinations were abstracted using health information exchanges embedded within the EMR.

Results: Overall, 142 individuals with a mean age of 51, predominantly male (72%) and Black, non-Hispanic (79%) received COVID-19 vaccines. Over half elected to receive a two-dose mRNA vaccine (51.4%). Eighty-five percent completed a primary series, and 71% of those who received a mRNA vaccine completed the two-dose series. Booster uptake was 34% in those completing a primary series.

Conclusions: Co-located clinics are an effective means of reaching vulnerable populations. As the COVID-19 pandemic continues and need for annual booster vaccines arises, it is important to bolster public support and funding to continue low-barrier preventive clinics co-located with harm reduction services for this population.

Corresponding Author: Omeid Heidari, PhD, MPH, ANP-C, University of Washington, School of Nursing, Department of Child, Family, and Population Health Nursing, oheidar1@uw.edu.

Disclosures:

The authors report no real or perceived vested interests related to this article that could be construed as a conflict of interest

Adherence to preprint policy: The findings presented in this manuscript have not been posted as a preprint

Keywords

Primary prevention; Opioid use; Healthcare utilization; Vaccination; People who inject drugs

Introduction

People who inject drugs (PWID) have experienced disproportionately higher morbidity and mortality during the coronavirus 2019 (COVID-19) pandemic, including more severe outcomes after SARS-CoV-2 infection¹ and higher risk for breakthrough infections post-vaccination.² It is therefore critical that they maintain up-to-date vaccination status. However, there are several barriers to vaccinating PWID, including poor access to health care, discrimination by healthcare providers, and perceived stigma.^{3, 4}

Mobile health clinics are a cost-effective model to increase healthcare access for the medically underserved.⁵ These clinics remove structural barriers, and when coupled with existing community-based programs such as syringe services, provide access to preventive care through trusted sources.^{4,6} Leveraging these clinics to improve vaccination coverage among PWID is an important mechanism to ensure equitable access.⁷ However, the impacts of these clinics on COVID-19 vaccination coverage for PWID have not been well-described.

In 2021, the Johns Hopkins COVID-19 mobile vaccination clinic partnered with the Baltimore City Health Department (BCHD) Syringe Services Program (SSP) to increase vaccine outreach to PWID.⁸ This paper describes the impacts of these co-located vaccination services.

Methods

Vaccine clinics:

From May to September 2021, COVID-19 vaccines were administered at six vaccine clinics held in community settings co-located with the BCHD SSP. Details of these vaccine clinics have been previously published.⁸ In brief, individuals seeking services at the SSP were notified of the availability of COVID-19 vaccines at the clinic. Those who elected to be vaccinated were registered in the electronic medical record (EMR) and their vaccine history checked in the EMR-embedded health information exchange (HIE). Individuals could select the Janssen (“viral vector”) one-dose vaccine or either the Pfizer or Moderna (“mRNA vaccines”) two-dose COVID-19 vaccines, including either dose of their two-dose vaccine series, if eligible. Those who received the first dose of a two-dose vaccine series were scheduled for a follow-up vaccination with a co-located clinic with the SSP or referred to another community-based clinic or pharmacy.

Study design:

This was a retrospective evaluation of EMR-abstracted data from patients receiving COVID-19 vaccines from our clinic. Data were abstracted between December 2021 through May 2022. The Johns Hopkins Medicine Institutional Review Board acknowledged this as quality improvement and exempt from review.

Data abstraction:

Data was abstracted from the EMR and HIE of all participants who were vaccinated at the clinic. Demographic data included age, sex, race, ethnicity, preferred language, and insurance. Housing status was assessed by validating the patient's EMR-listed address to determine if it was a residential address, hospital, shelter, or a non-existing or invalid location. The institutional EMR, Maryland state vaccine registry ("ImmuNet"), and regional HIE ("CRISP") were reviewed to assess whether individuals received subsequent COVID-19 vaccines elsewhere.

Outcomes:

The primary outcome was completion of a primary vaccine series. Secondary outcomes included the proportion of individuals not completing a two-dose series after initiating with our clinic, those who received their first dose elsewhere and completed their vaccinations with our clinic, and uptake of booster after completion of a primary series.

Results

Overall, 142 individuals received COVID-19 vaccines from our clinic. Participants' mean age was 51 (range 18-79). Participants were predominantly male (72%), Black (80.3%), and non-Hispanic (97.2%) (Table 1). Most listed a Medicare or Medicaid insurance (48.5%) while 47% did not have health insurance coverage.

Over half of individuals vaccinated at the clinics received a mRNA vaccine (73/142). This included individuals who received a first dose only, second dose only, and first and second dose of a two-dose series. The remaining individuals (n=69) received a viral vector vaccine. Seventy-one percent (52/73) of individuals who received a mRNA vaccine completed the two-dose series. In total, 85% of individuals who engaged with the co-located clinic (121/142) completed a primary vaccine series.

Of PWID who received their first dose of a mRNA vaccine series with our clinic (n=68), 69% (n=47) completed the series. Forty percent (27/68) started and completed the mRNA series with the mobile clinic and 29% (20/68) completed their vaccines elsewhere. Thirty-one percent (21/68) did not complete the vaccine series. In five instances, the mobile clinic also completed the vaccine series for mRNA recipients who started the series at a separate location. The mean interval between first and second dose for these individuals was 111 days (SD 64).

At the time of data abstraction in June 2022, 22 individuals who had received both doses of the mRNA vaccines (42%) and 19 individuals who had received a viral vector vaccine (27.5%) had a documented COVID-19 booster.

Discussion

We conducted six community-based COVID-19 vaccination clinics with the BCHD SSP to prioritize vaccinations for PWID. Our data indicated that 85% of individuals who engaged

with our clinic completed a primary COVID-19 vaccine series, including 71% of individuals receiving a two-dose vaccine.

Few studies have examined COVID-19 vaccine completion among PWID. Data from a longitudinal cohort of PWID in Baltimore found that 68% of the study population had received at least one dose of a COVID-19 vaccine.⁹ This is lower than the vaccination rates among adults in the US, where 91.6% have received at least one dose of a COVID-19 vaccine.¹⁰ Another study found that when co-locating Hepatitis B vaccines with SSPs in Sweden, PWID had high initiation (75%) and completion (59%) of the series.¹¹ These studies speak to PWID as an underserved population, and highlight SSPs as an ideal location for delivery of primary prevention services.

Co-located clinics are an effective means of reaching vulnerable populations who may not routinely access “brick and mortar” health care facilities and experience systemic discrimination and other barriers within the health care system.^{6,7,12} Syringe services programs provide harm reduction services generating high trust from PWID¹³ and are a natural partner for targeted preventive healthcare services. Data from this population continually demonstrate the desire for preventive healthcare services, including COVID-19 vaccination.¹⁴ Co-located services with essential harm reduction services for this population meets the tenet of “meeting them where they are.”

This study is subject to limitations. Due to privacy considerations, the SSP does not collect data on how many people were seen during a vaccine clinics, so we were unable to assess the percentage who opted to get vaccinated, or any characteristics that may be associated with those who did versus did not opt to get vaccinated. Additionally, delays in reconciliation of vaccines received in other venues may have led to incorrect capture of booster status.

There is a public health and moral imperative to provide vaccination for PWID in a way that circumvents barriers and optimizes engagement.¹⁵ Only 34% of our study population had received boosters, which had not yet been widely authorized at the time of our last community-based clinic. Our data indicates that most of our population had not sought boosters elsewhere, which may be due to lack of awareness, barriers to access, or other challenges that were overcome by our co-located clinics. The COVID-19 pandemic continues even as federal funding for vaccinations and risk reduction services wanes. It is important to bolster public support and funding to continue low-barrier preventive clinics co-located with harm reduction services for this population. Furthermore, beyond COVID-19, these low-barrier co-located healthcare delivery models may be effective in expanding protection of PWID against other infectious diseases, reducing adverse outcomes associated with the opioid epidemic, and responding to other emerging health threats.

Funding:

Dr. Heidari’s work was supported by the National Institutes of Health (T32DA007292; Maher, PI).

References

1. Baillargeon J, Polychronopoulou E, Kuo YF, Raji MA. The impact of substance use disorder on COVID-19 outcomes. *Psychiatr Serv.* 2021;72(5):578–581. doi:10.1176/appi.ps.202000534 [PubMed: 33138712]
2. NIDA. People with substance use disorders may be at higher risk for SARS-CoV-2 breakthrough infections. National Institute on Drug Abuse website. <https://nida.nih.gov/news-events/news-releases/2021/10/people-with-substance-use-disorders-may-be-at-higher-risk-for-sars-cov-2-breakthrough-infections>. October 6, 2021 Accessed May 17, 2022.
3. Mellis AM, Kelly BC, Potenza MN, Hulsey JN. Trust in a COVID-19 vaccine among people with substance use disorders. *Drug Alcohol Depend.* 2021;220:108519. [PubMed: 33461150]
4. Barocas JA. Business Not as Usual-Covid-19 Vaccination in Persons with Substance Use Disorders. *N Engl J Med.* 2021;384(2):e6. [PubMed: 33378604]
5. Yu SWY, Hill C, Ricks ML, Bennet J, Oriol NE. The scope and impact of mobile health clinics in the United States: a literature review. *Int J Equity Health.* 2017;16(1):178. Published 2017 Oct 5. [PubMed: 28982362]
6. Huyck M, Mayer S, Messmer S, Yingling C. Community wound care program within a syringe exchange program: Chicago, 2018-2019. *Am J Public Health.* 2020 Aug;110(8):1211–1213. [PubMed: 32552028]
7. Des Jarlais DC, Fisher DG, Newman JC, Trubatch BN, Yancovitz M, Paone D, Perlman D. Providing hepatitis B vaccination to injection drug users: referral to health clinics vs on-site vaccination at a syringe exchange program. *Am J Public Health.* 2001 Nov;91(11):1791–2. [PubMed: 11684603]
8. Heidari O, Meyer D, O’Conor KJ, Cargill V, Patch M, Farley JE. COVID-19 vaccination and communicable disease testing services’ integration within a syringe services program: A program brief. *J Assoc Nurses AIDS Care.* 2022;33(3):348–352. [PubMed: 35025822]
9. Cepeda JA, Feder KA, Astemborski J, et al. COVID-19 vaccine hesitancy and vaccination status in a community-based cohort of people who inject drugs in Baltimore, Maryland, March–June 2021. *Public Health Reports.* 2022;137(5):1031–1040. doi:10.1177/00333549221110299 [PubMed: 35848111]
10. COVID-19 vaccinations in the United States. U.S. Centers for Disease Control and Prevention. https://covid.cdc.gov/covid-data-tracker/#vaccinations_vacc-total-admin-rate-total. December 8, 2022. Accessed December 12, 2022.
11. Alanko Blomé M, Björkman P, Flamholc L, Jacobsson H, Widell A. Vaccination against hepatitis B virus among people who inject drugs - A 20 year experience from a Swedish needle exchange program. *Vaccine.* 2017;35(1):84–90. doi:10.1016/j.vaccine.2016.11.041 [PubMed: 27894721]
12. Hennessy RR, Weisfuse IB, Schlanger K. Does integrating viral hepatitis services into a public STD clinic attract injection drug users for care?. *Public Health Rep.* 2007;122 Suppl 2(Suppl 2):31–35. [PubMed: 17542450]
13. Treloar C, Rance J, Yates K, Mao L. Trust and people who inject drugs: The perspectives of clients and staff of Needle Syringe Programs. *Int J Drug Policy.* 2016;27:138–145. [PubMed: 26394538]
14. Iversen J, Peacock A, Price O, Byrne J, Dunlop A, Maher L. COVID-19 vaccination among people who inject drugs: Leaving no one behind. *Drug Alcohol Rev.* 2021;40(4):517–520. doi:10.1111/dar.13273 [PubMed: 33650174]
15. O’Conor KJ, Golden SH, Hughes MT, Sisson SD, Kachalia A. COVID-19 vaccination: Health care organizations’ responsibility and opportunity. *Am J Public Health.* 2022;112(2):213–215. [PubMed: 35080955]

Table 1.

Demographics and vaccine metrics of n=142 PWID receiving COVID-19 vaccination at a clinic co-located with BCHD SSP

Variable	n	(%)
Age		
Mean (s.d.)	51.0	(13.4)
Sex/Gender ¹		
Male	102	(72.0)
Female	40	(28.0)
Race		
Black	114	(80.3)
White	19	(13.4)
Other/Unknown race	9	(6.3)
Ethnicity		
Hispanic	4	(2.8)
Non-Hispanic	138	(97.2)
Preferred Language		
English	139	(97.9)
Spanish	3	(2.1)
Housing Status ²		
Residential address listed	121	(85.2)
No valid address listed	21	(14.8)
Insurance		
Medicare	5	(3.5)
Medicaid	64	(45.0)
Private	3	(2.1)
Self-pay/special billing	4	(2.7)
None	65	(46.7)
First-dose Vaccine		
Janssen	69	(48.6)
Pfizer	70	(49.3)
Moderna	3	(2.1)
2-dose completion (n=73)		
Completed entire series at SSP	27	(37.0)
First dose received at SSP- finished elsewhere	20	(27.4)
First dose received at SSP- incomplete series	21	(28.8)
First dose elsewhere- finished with SSP	5	(6.8)
Booster uptake		
Completed 2-dose series	22	(42)

Variable	n	(%)
Completed 1 dose series	19	(27.5)

¹Due to lack of data on patient's gender, their sex identified at birth is reflected in the data. For those with gender identity specified in the EMR, their sex at birth has been replaced with their identified gender.

²Patients were classified as having "residential address listed" if they had a residential address listed in the EMR; "no valid address listed" included non-residential addresses or if address was unknown

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript