HELP USA's Covid-19 Transitional Housing[1] Peer Vaccine Support Program

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Abstract

HELP USA tracked Covid-19 vaccination rates of its transitional housing (TH) clients between April 2021 and September 2022. Through coordination with the local government, HELP USA was able to secure vaccinations for its TH sites. In August 2021 the city government began providing vaccinations at these sites throughout the city. By February 2022, clients 'full vaccination rates in 19 HELP USA TH sites (61%) continued to trail the city's general population (77%). The share of clients in single adult facilities that had received their vaccinations at their sites remained low throughout the winter: only 35% had received at least one dose of the vaccine at their sites in December and in February, respectively. The on-site vaccination rates of clients in family sites were significantly lower than single adults. In response, HELP USA implemented a peer support program in three sites. The objective was to increase client vaccine rates to New York City population rates, by emphasizing individual "peer" appeals to increase access to and knowledge of Covid-19 vaccines (Kirzinger, Sparks & Brodie, 2021; Zivot & Jabeley, 2022). Peer service models have enhanced the access of vulnerable groups to other critical services, such as HIV treatment, harm reduction programs and after-care stroke services (Kessler, Egan & Ann-Kubina, 2014; Iraywan et al, 2022). The full vaccination rates of one of the three sites exceeded the New York City rate and was comparable to the NYC adult rate. This chapter details the responses to HELP USA's transitional clients in three phases: a de-densification strategy in hotels before the availability of the vaccine in 2020, ensuring vaccines in shelters and tracking client vaccine rates after vaccines became available to the wider public throughout 2021, and the implementation of a peer vaccine support program to increase vaccine rates in 2022. The chapter presents findings of the peer program in context of HELP USA's three-year history of service provision for homeless clients throughout the Covid-19 pandemic.

[1] In the New York City shelter system, transitional housing refers to sites in the system that are intended to provide temporary housing to clients while social workers facilitate their access to permanent housing. All sites discussed in this chapter are transitional housing sites. For the purpose of brevity, we refer to these sites as "shelters" throughout the chapter.

Ethics Review Statement:

HELP USA obtained consent from respondents to surveys we administered throughout the study period discussed in the chapter. Frontline social workers and the research team protected identities of all respondents by administering the survey anonymously. No names or personal identification were recorded.

Conflict of Interest:

The authors of this study report no conflicts of interest.

Statement of Funding:

The research team did not receive dedicated funding to conduct this research.

Introduction: HELP USA's first response to the Covid-19 crisis among persons experiencing homelessness (March – Dec 2020)

By the Spring of 2020 New York City accounted for five percent of the world's confirmed Covid-19 cases (McKinley, 2020). A June 2020 preliminary investigation of Covid-19 related mortality rates of persons experiencing homelessness in NYC estimated that the average number of monthly Covid-19 deaths among the city's shelter clients was 157% higher than the monthly average number of all-cause related deaths in 2019 (Routhier & Nortz, 2020:3).

In this context, the major challenge that homeless shelter and service providers in this Covid epicenter faced at the time was de-densifying facilities to protect social workers and residents from viral contagion and spread. In 2020 HELP USA, the employer of this chapter's authors, implemented a minimum staffing model. The organization permitted social service staff to partially work from home and condensed schedules of frontline staff to enable these essential workers to perform their jobs on site for as few days as optimal.

It was simultaneously imperative to protect clients. Alongside other service providers, we asked the local government to permit clients to live in vacant hotel rooms throughout the city. After his initial hesitation, Mayor Bill De Blasio consented to this option in May 2020 (Anuta, 2020). City agencies used federal pandemic relief aid to pay for these hotel rooms. HELP USA was one of the first homeless service providers to implement the shelter de-densification strategy. By June 2020, we had moved about 550 clients from congregate sites into two large Manhattan hotels.

This strategy potentially saved lives. The NYC Coalition for the Homeless estimated the death rate per 100,000 to be 171.87 from April to June 2020 (Routhier & Nortz, 2020). We estimated that the

deathrate among HELP USA shelter clients was 133 per 100,000[2]. De-densification was our primary Covid-19 prevention strategy until vaccines became available.

On December 10, 2020, the U.S. Food and Drug Administration approved the two dose Covid-19 Pfizer vaccine for people above 16 years of age (FDA, 2021). That week, the vaccine became available to first responders, hospitals, and care facility operators, which included organizations that provided essential services to persons experiencing homelessness (Cullinane, Yan & Ellis, 2020). HELP USA immediately coordinated efforts to retrieve vaccine supplies. By January 2021, we had secured 150 vaccines as well as medical personnel to administer them to our clients and staff in a few neighboring single adult male shelters. Thus, began our efforts to expand the supply of and access to the vaccine across our shelters and track client vaccination rates.

The second response: ensuring vaccines in shelters and tracking vaccine rates (Jan – Dec '21)

HELP USA began administering Covid-19 vaccines in a few single adult men's shelters in coordination with government social service and medical providers in January 2021 after the city approved the distribution of the two dose Pfizer and Moderna vaccines in New York City shelters that month. In March 2021, the local government approved the distribution of the single dose Johnson & Johnson (J&J) vaccine in New York City shelters. However, officials halted the distribution of vaccines in April 2021 for the brief period that the federal government ordered a moratorium on the J&J vaccine.

[2] Four clients were known to have succumbed to Covid-19 during these months. We serve an average of approximately 3,000 clients daily in our New York City shelters. We note that our estimate is based on clients who were known to have passed away from COVID. However, as in cases of other shelters and even non-homeless people who passed away, not every suspected COVID death was definitively verified by an autopsy. However, the rate of resident deaths remained low throughout the pandemic as we maintained the hotels and kept our shelters and transitional housing sites open, dispersing residents and staff alike.

HELP USA's frontline shelter workers suggested that the interruption affected clients. More than a few remained 'hesitant' to receive the vaccine after the moratorium was lifted that month.

In this context, our research team began tracking vaccine awareness, demand and uptake among clients in our single adult shelters across seven measures.

1. Were shelter clients *aware* that the Covid-19 vaccine was available at HELP USA shelter locations?
2. Had clients *attempted* to access the Covid-19 vaccine at a HELP USA shelter location?
3. Had clients received the *first dose*[3] of the Covid-19 vaccine?

   3.b. Did they receive the *first dose* of the Covid-19 vaccine *at a HELP USA shelter* location?
4. Had clients received the *second dose* of the Covid-19 vaccine?

   4.b. Did they receive the *second dose* of the Covid-19 vaccine *at a HELP USA shelter* location?
5. Did clients *desire assistance* from HELP USA staff to avail the vaccine?

The objective was to track client vaccine rates to distribute vaccines across our shelters as early as possible. We also wanted to establish baseline measures of vaccine access and demand indicators to measure progress throughout the pandemic. These tasks were essential to serve approximately 3,000 HELP USA clients in 19 NYC single adult and family shelters in multiple city locations as the uncertainty that defined the pandemic continued to unfold.

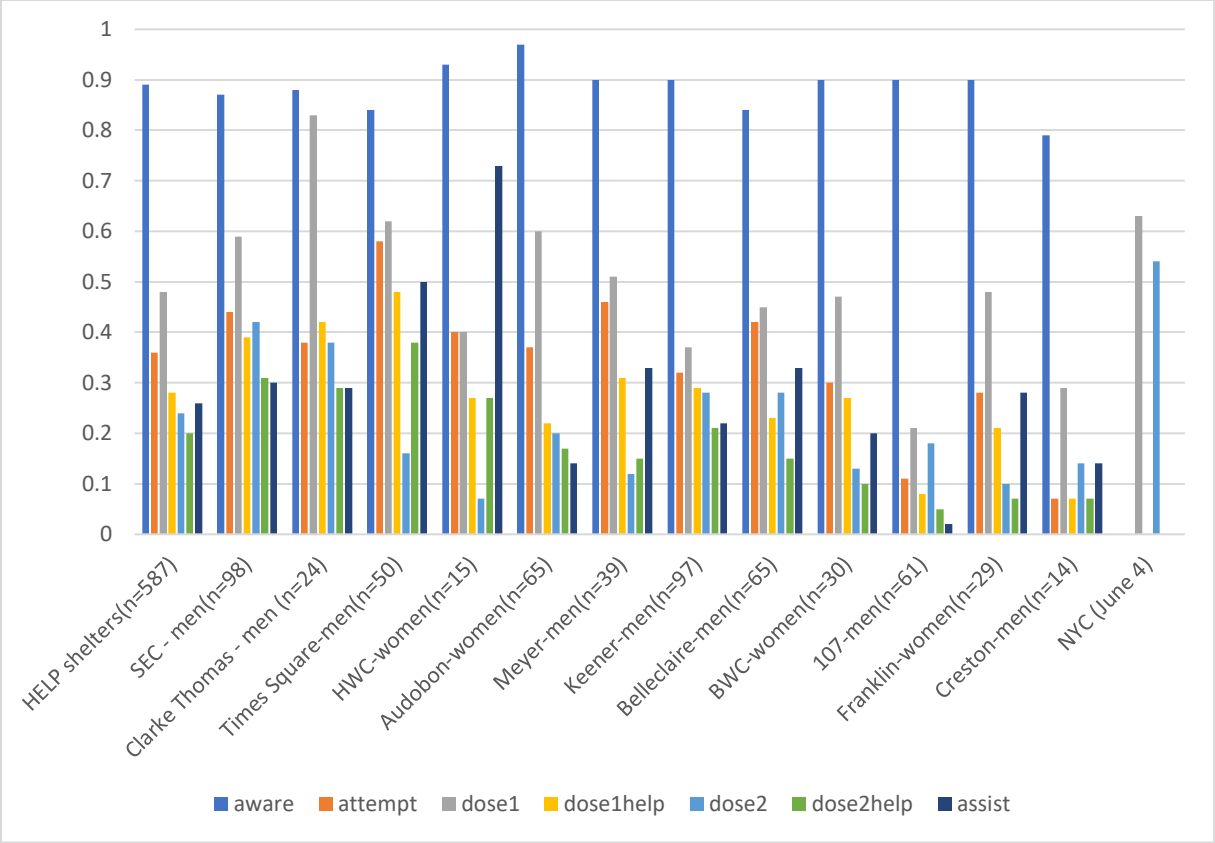
[3] According to the CDC, people who had received at least one dose (≥ 1 dose) were those who received at least one dose of COVID-19 vaccine, including those who received one dose of the single-shot J&J/Janssen COVID-19 vaccine. 'This study relied on the CDC definition for its calculation and discussion of rates of shelter clients that received at least one dose of COVID 19 vaccine (CDCa, n.d).

We tracked these measures over three survey periods. We conducted a baseline survey from April to June ‘21 (baseline) and two follow up surveys in December ‘21 and February ‘22. For the rest of this section, we’ll summarize the key trends over 2021 (the first two rounds). We used these findings to coordinate vaccine distribution efforts with the local government throughout that year and to identify the need for a peer vaccine support program in shelters, which we designed and implemented in 2022.

The baseline study surveyed 587 clients from six single adult male and four adult female shelters as well as two temporary hotels. These sites had an average daily census of 1625 people throughout the survey period. We found that by June 2021, 48% of clients were partially vaccinated (28% at a HELP USA shelter) and 24% were fully vaccinated (20% at a HELP USA shelter). By comparison, 63% and 54% of New York City adults were partially vaccinated and fully vaccinated by June 4, 2021 (NYC Dept of Health, n.d.). On May 10, officials reported that 10.9% of the city’s shelter clients were fully vaccinated (Raskin, 2021) (**figure 1**). The provision of the vaccines in HELP USA shelters in January potentially led to higher vaccination rates among our clients compared to the city’s sheltered population. Our goal was to raise client vaccination rates to city levels.

Figure 1

Covid-19 vaccine demand and coverage indicators (April-June’21) (n=587)



Coordination with local authorities was essential to ensuring adequate vaccine supplies. The baseline survey also revealed the challenge of low vaccine demand among clients. Most respondents (89%) knew that the vaccine was available in shelters but only 36% had tried to avail them at a HELP USA site and 26% wanted assistance from social workers to do so.

Vaccine attempts and partial vaccination rates were significantly higher ($p<0.05$) among clients in male sites that had received vaccines before the moratorium. In the Times Square hotel (n=50) – a temporary residence for some Meyer shelter clients (a men's shelter) – 58% of respondents had attempted to avail the vaccine at a HELP USA location and 62% were also partially vaccinated (48% at a HELP USA site). In two neighboring men's shelters, HELP USA Supportive Employment Center

(SEC) and Clarke Thomas, 59% and 83% of respondents were partially vaccinated (39% and 42% at a HELP USA site).

In August 2021, the Department of Homeless Services (DHS) announced that they would administer the Pfizer vaccine in New York City shelters and provide incentives - gift cards and metro passes - to vaccinated clients. The December'21 survey (n=539) measured changes from baseline in vaccine demand and access indicators, particularly in context of the recent DHS vaccine service & incentive initiative. We identified six findings.

First, full vaccination rates of our clients more than doubled from 24% at baseline to 56% in December but continued to significantly trail the NYC adult full vaccination rate (83.7%) (NYC Department of Health, n.d.). Clients' partial vaccination rates also improved from 48% to 72% and the share that had received at least one dose of the vaccine at a HELP USA shelter increased from 28% to 35% **(table 1).**

Second, client demand for vaccines *at* shelters remained low across our shelters and particularly among younger female clients. By December '21, the shares of clients that attempted to get vaccinated at their shelters (38%) and that had received the second vaccine dose at their shelters (22%) only improved by two percent from the baseline survey (**table 1**).

Table 1

Vaccine Demand & Access: Dec '21 findings in context of April-June '21 baseline indicators

survey periods	Attempt (%)	dose 1(%)	dose1-help (%)	dose2(%)	dose2-help (%)	assist (%)	boost (%)
April-June '21 (n=587	36.12	48.26	28.11	24.19	19.76	26.24	
December '21 (n=539)	37.78	65.21	27.2	55.85	21.66	33.4	11.34
NYC adult pop (diff, CI)				83.7% (55.01, 50.76-59.18) *			

difference (Conf Int) +	1.66(-3.98-7.31)	**17(11.18-222.55)**	0.91(-4.3-6.1)	**31.66(26.07-36.97)**	1.9(-2.84-6.68)	**7.16(1.8-12.49)**	n.a.
*diff & CI from Dec '21 dose2							
differences in bold indicates significance (p<0.05)							

The youngest clients were least likely, and the two oldest client groups were most likely to be vaccinated (**table 2**). Only 6% of 18–24-year-olds were fully vaccinated *at* a HELP USA shelter (**table 2**). Three-fourths of this group (n=24; 76%) were women.

Table 2

Partial and full vaccination rates by age group (December '21 survey) (n=511)

age group	**attempt (%)**	**dose1(%)**	**dose-1h (%)**	**dose2(%)**	**dose2-h (%)**	**assist (%)**	**boost (%)**
18 to 24	24.24	60.6	11.76	41.17	5.88	35.29	15.15
25 to 34	39.1	61.26	22.52	53.2	20.91	31.53	3.63
35 to 44	33.67	61.61	26.53	52.52	18.18	24.24	11.22
45 to 54	37.61	64.15	26.85	61.68	24.3	32.11	9.52
55 to 64	45.45	68.64	35.54	60.17	29.41	41	16.38
65+	33.33	75	17.78	64.44	24.44	35.55	20.93
total	37.78	64.77	26.11	56.64	22.37	33.08	11.49

The remaining findings highlighted relationships between the supply of vaccines throughout the year and corresponding vaccination rates across shelters.

The third finding was that more vaccines were administered in HELP USA shelters in the winter of 2021 (Jan-March '21) than between August and October '21 - the months following DHS 'new

vaccine services. The daily average of 4.77 administered first doses and 2.9 second doses in HELP USA shelters dropped to 1.4 first and 0.39 second doses from August to October '21 **(table 3**). However, vaccines were administered more consistently – at least one day each week - during the second period. In the first period, a high number of vaccines were administered in just a few days. For example, a total 87 first doses were administered to all HELP USA shelters on February 23. No vaccines were administered in the 24 previous days.

Table 3

Weekly average of vaccines administered in HELP USA shelters (Jan – Oct '21)

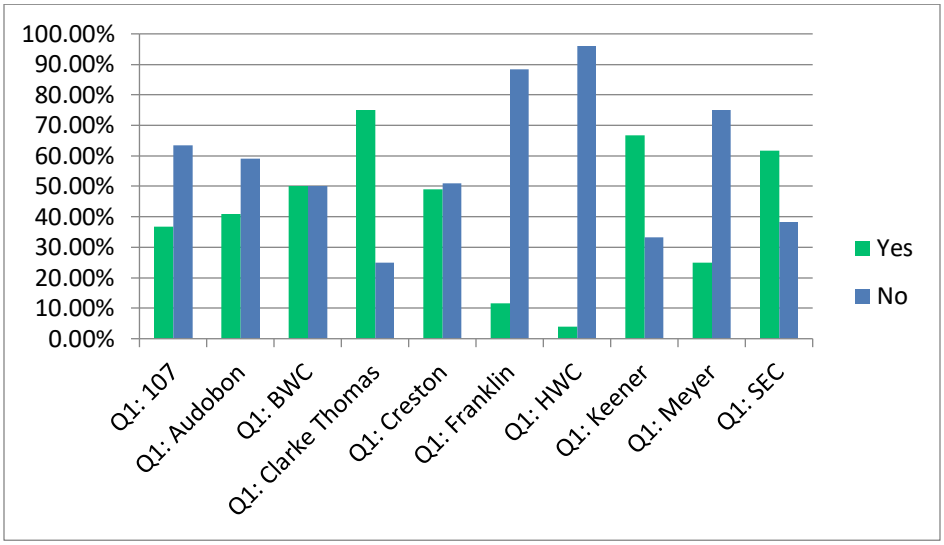
week	dose 1	dose 2	week	dose 1	dose 2	week	dose 1	dose 2
1/25-1/31	10.1	0	**5/24-5/29**	1.14	1	**9/26-10/2**	1.57	0.86
2/1-2/7	0	0	**5/30-6/5**	0.14	0.29	**10/3-10/9**	1.86	0.43
2/8-2/14	0	0	**6/6-6/12**	0.14	0.14	**10/10-10/16**	0.57	0.86
2/15-2/21	0	0	**6/13-6/19**	0.14	0.14	**10/17-10/23**	1	0.43
2/22-2/28	22	4.4	**6/20-6/26**	0.29	0.14	**10/24-10/30**	0.71	0.14
3/1-3/7	0.14	0	**6/27-7/3**	0	0			
3/8-3/14	8.3	8.3	**7/4-7/10**	0.14	0.14			
3/15-3/21	2.57	2.57	**7/11-7/17**	0	0.14			
3/22-3/28	0.43	11.3	**7/18-7/24**	0.29	0			
3/29-4/4	2.71	1.71	**7/25-7/31**	0.5	0			
4/5-4/11	8.1	8	**8/1-8/7**	0.7	0			
4/12-4/18	0	0	**8/8-8/14**	2.14	0			
4/19-4/25	0.29	0.17	**8/15-8/21**	2.86	0.14			
4/26-5/2	1.3	1.3	**8/22-8/28**	0.57	0.43			
5/3-5/9	0	0	**8/29-9/4**	1.86	0.29			
5/10-5/16	0.86	0.57	**9/5-9/11**	1.71	0.43			
5/17-5/23	0	0.14	**9/12-9/18**	1.57	0.29			
5/24-5/29	1.14	1	**9/19-9/25**	1.43	0.86			
5/17-5/23	0	0.14	**10/24-10/30**	0.71	0.14			

The fourth finding related to patterns of vaccine supplies, discussed above, in context of higher vaccine rates in three neighboring men's shelters. Clients of the shelter with the highest partial vaccination (98%) and full vaccination (93%) rates by December '21 - a site called Keener (n=47)[4] - were most likely to have received their first dose after DHS 'new vaccine services were initiated. Indeed, 38% of these respondents became partially and fully vaccinated that October and November alone. Clients of Clarke Thomas (n=73) *continued* to have the highest *on-site* partial (56%) and *on-site* full vaccination rates (39%) in this follow-up survey and were more likely than clients in other shelters to have been vaccinated in the winter, before the J&J vaccine moratorium (24% had received their first dose in March). Lastly, a "leading" baseline survey shelter, SEC, registered declines in major indicators except their full vaccination rate (51%).

Fifth, the share of clients in women's intake facilities that attempted to avail vaccines at their sites decreased significantly, from 28% to 12% in one site called Franklin and 40% to 12% at the other called HELP USA Women's Center (HWC). This decline was correlated with the apparent dearth of visits to these sites by DHS vaccine administrators after August, when new services and incentives were announced. For example, 88% and 96% of these female clients in Franklin and HWC reported that they had not witnessed an increase in visits to their sites by DHS vaccine administrators **(figure 2).** Conversely, 75% and 67% of clients in the men's sites, Clarke Thomas and Keener, had witnessed increases in these visits.

Figure 2

Share of clients that reported witnessing an increase in vaccine administrator visits to their shelter (Dec '21) (n=539)



Sixth, only 29% of respondents had received a gift card from DHS administrators after becoming partially vaccinated. Over half (51%) of clients in Keener – the site with the highest partial vaccinate rate – had received this incentive. Only 15% of respondents had received the gift card and metro card after becoming fully vaccinated.

These findings confirmed that overall vaccination rates increased significantly between the baseline and follow up surveys while on-site vaccination rates stagnated over this period due partly to inconsistent vaccine distribution levels across shelters. In this context, clients were generally availing vaccines from other locations. The higher volume of administered vaccines in our shelters in winter compared to later in that year conformed to the pattern in the general NYC population (NYC Department of Health, n.d.). However, because client vaccine rates continued to significantly trail the adult NYC population, we realized that a dedicated peer vaccine support group program may help increase both the *volume* of vaccines administered in shelters and *coverage* rates. The next section details why and how we designed and implemented the program.

The third response: the peer vaccine support program (Feb '22 – Sep '22)

By January 2022, multiple research studies had confirmed that vaccination was the safest individual and public health strategy against the contraction and transmission of Covid-19 (Thompson, Burgess et al 2021; Sadoff et al 2021; and Thomas, Moreira et al 2021; Zivot & Jabaley 2022). However, half of Americans remained unvaccinated by then and vaccination rates of persons experiencing homelessness were 11 to 35% lower than the general populations of major cities (Montgomery et al, 2021; Zivot & Jabaley, 2022). For example, 19.8% and 44.5% homeless persons in Washington, DC and Chicago were vaccinated compared to 54.8% and 55.7% of these cities 'general populations, respectively (Montgomery et al, 2021).

As 56% our single adult shelter population and 83.7% of NYC adults were fully vaccinated by December '21, we surmised that our single adult shelter clients were relatively more protected against Covid-19 than similar populations in other cities yet still considerably less so than the general population of their own city. DHS 'dedicated shelter vaccine program may have increased vaccination rates in some shelters. Yet, this program's ability to increase those rates further may have plateaued. Indeed, nearly two-thirds (63%) of clients in our December survey reported that visits by DHS vaccine administrators had no influence on their decision to get vaccinated or remain unvaccinated.

Studies also confirmed that legal mandates and marketing and media campaigns actually increased vaccine "hesitancy" in some contexts as these methods were perceived as coercive and unpersuasive (Zivot & Jabeley 2022). Alternatively, programs that relied on community members to provide information on vaccines, share their successful experiences with vaccines and offer unvaccinated people help to access them increased vaccine rates (Zivot & Jabeley 2022) . This "peer" support model has increased the access to services in numerous other service contexts, such as HIV

treatment, harm reduction programs for persons using substances, and after-care stroke services (Kessler, Egan & Ann-Kubina, 2014; Iraywan et al, 2022; Kirzinger, Sparks & Brodie, 2021; Zivot & Jabeley 2022). In peer support programs among the homeless, discussions between peer leaders and clients on their "shared experiences" have been attributed to successful outcomes, such as on shaping models of recovery from homelessness (Barker and Maguire, 2017).

We therefore decided to implement a peer vaccine support program in select shelters to increase vaccination rates at these sites to city levels. We decided to include family shelters in this program, so we conducted a survey in February 2022 that included 533 respondents from eight family shelters that we had never surveyed and 766 respondents from the ten single adult shelters that were included in previous surveys. The full vaccination rates of single adults increased from 56% in December '21 to 61% in February '22. In the newly surveyed family shelters, 60% of respondents were vaccinated.

Female and male respondents had comparable full vaccination rates (61.8% and 60.4%, respectively). However, people between the ages of 45 and 64 (39% of the sample) as well as persons of Latinx (34% of the sample) and Asian/Pacific Islander (1.86%) origins had significantly higher full vaccination rates (**tables 3 & 4**). Additionally, the chronically homeless clients had higher vaccination rates than the recently homeless, as 64.75% *and* 55.9% of respondents who had experienced homelessness for more than two years *and* less than six months, respectively, were fully vaccinated.

Table 3

Full vaccination rates by demographic indicators (Feb '22, n=1287)

Gender	**% surveyed**	**% fully vaccinated**
Female	48.88%	61.8
Male	50.81%	60.4
Non-binary	0.31%	75

Age group	% surveyed	% fully vaccinated
6 to 17	2.55%	31.25
18 to 24	11.99%	51.30%
25 to 34	27.38%	55.46%
35 to 44	22.58%	62.72%
45 to 54	16.86%	67.91%
55 to 64	14.15%	72.78%
65+	4.49%	66.1
Race	**% surveyed**	**% fully vaccinated**
American Indian or Alaskan Native	1.16%	40.00%
Asian/Pacific Islander	1.86%	75.00%
Black or African American	54.85%	58
Hispanic	33.59%	65.96%
White/Caucasian	5.82%	66
Multiple ethnicity	2.72%	50.00%
Length of homelessness	**% surveyed**	**% fully vaccinated**
less than 6 months	19.84%	55.90%

more than 6 months but less than 1 year	18.84%	57.5
1 to 2 years	28.76%	62.46%
more than 2 years	32.56%	64.75

Table 4

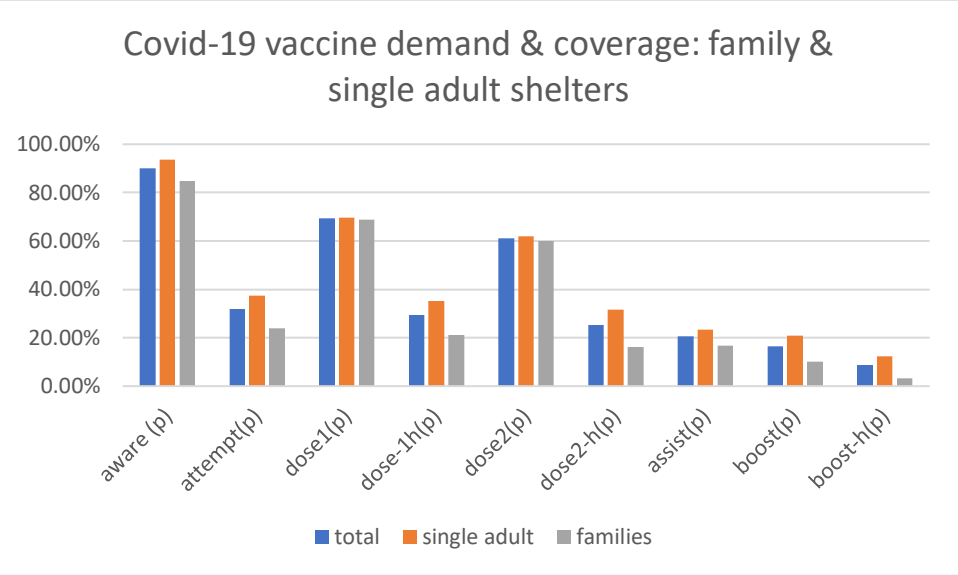
Predictors of full vaccination rates

Age group	% surveyed	% fully vaccinated	B	p-value	OR
18 to 24	11.99%	51.30%	1.017	0.017	2.764
25 to 34	27.38%	55.46%	1.324	0.002	3.758
35 to 44	22.58%	62.72%	1.648	<0.001	5.195
45 to 54	16.86%	67.91%	2.017	<0.001	7.517
55 to 64	14.15%	72.78%	1.62	0.001	5.053
Race	**% surveyed**	**% fully vaccinated**	**B**	**p-value**	**OR**
Asian/PI	1.86%	75.00%	1.264	0.041	3.541
Hispanic	33.59%	65.96%	0.788	0.035	2.199

As in previous surveys, the trend of increasing *overall* vaccination rates and low *on-site* vaccination rates continued in single adult shelters but it was also evident across family shelters (**figure 2**).

Figure 2

Covid-19 vaccine demand and coverage indicators (Feb '22): Family (n=759) and single adult shelters (n=530)



In single adult shelters, the shares of clients that had *attempted* to get vaccines at their shelters and that had received at least one dose of a vaccine at their shelter did not change between December and February (38% and 35%, respectively). The share of clients that were fully vaccinated at HELP USA shelters improved from 22% to 32%. In family shelters, *awareness* of vaccine availability in shelters, *attempts* to receive them in shelters, and rates of people who have received at least one dose or have become fully vaccinated *in shelters* are considerably lower than single adult shelters.

In this context, we used the following criteria to select shelters to implement the peer vaccine support program. Among single shelters, we chose one site, Creston (n=46), that continued to have low full vaccination rates. In this men's shelter, 52% of respondents were fully vaccinated and 20% had become fully vaccinated at their site. We also chose SEC (n=156), the men's shelter we discussed earlier, where full vaccination rates had improved (67%), but on-site vaccination rates remained low

(25%) compared to other sites. Among family shelters, we chose HELP USA Haven (n=49), where 47% of respondents were fully vaccinated and only 1 person (2%) had become fully vaccinated at the shelter. In this shelter, attempts by respondents to avail vaccines at their site (7%) and awareness of this service (77%) were comparatively lower.

We adapted our 10-week peer support model from the following sources: Kessler et al.'s 2014 study on peer programs for stroke survivors, the World Bank & IMF's Peer Support Group Facilitator Guide (2020), Pediatric Adolescents Treatment Africa's (PATA) peer support handbook for health workers providing HIV treatment to youths (PATA, 2017), and CDC guidelines on providing information on COVID-19 (CDC b-d, n.d.). Based on these guides, we identified four components of the program to meet the objective which, as we recall, was to increase client full vaccine rates to NYC levels:

- Facilitate vaccine access as social support, foregrounded by compassion
- quell client distrust of institutions
- ensure safe spaces in shelters
- engage vaccinated shelter clients in the program to serve as peer navigators with paid compensation

Social workers from Creston, SEC and Haven selected two fully vaccinated clients from their shelters to serve as vaccine peer navigators. These clients championed open mindedness, a hopeful attitude, honesty, and empathy towards other clients. Also critical were those clients that social workers believed could perform the essential tasks of the program. These included acting as a support group leader and treatment buddy , sharing information on Covid-19 vaccines (including their own experiences), and conducting outreach and community work, including guiding, and accompanying clients to vaccine visits. One social worker from each site - a logistics coordinator (LC) - helped peer navigators identify the unvaccinated clients in the shelter to engage throughout the program. Another social worker served as the vaccine coordinator (VC). As the name suggests, they coordinated visits of

vaccine administrators to the shelter. One peer navigator facilitated access to local vaccinator visits for unvaccinated clients who expressly wanted to be vaccinated. Another peer navigator conducted information and support sessions for "hesitant" clients. After one week of planning and one week of training, the eight-week implementation phase began. Each four-member shelter program team held weekly reviews. The research team trained all peer teams, then met with them collectively four times throughout the implementation phase of the program.

In our May 2022 review session - between the authors and program teams - peer navigators discussed four concerns that prevented "hesitant" clients from getting the vaccine. We can summarize these concerns as questions:

- Is Covid-19 still a threat?
- Are vaccines safe and effective?
- Are side effects common and harmful?
- What is long Covid? Will the vaccine protect me from it?

We collectively devised a strategy to address these issues. The research team produced a frequently asked questions (FAQ) brief with answers to each concern. The answer to the Covid "threat" question, for example, explained that New York City had recently experienced another surge of Covid-19 cases (3,500/day) and hospitalizations (130/day), prompting health officials to declare a "high Covid alert" status in the city (Goldstein, 2022). Peer teams posted the brief in community areas, used the prompts to engage with groups of clients – rather than only individuals - during social events, mealtimes, and in shelters 'public and recreational spaces.

Findings of the Peer Support Program

The program concluded in July 2022. We resurveyed the three peer support program shelters (n=187) and nine shelters that did not have the program (n=599). By September, the full vaccination rate of the total sample (61%) had not changed since the previous survey round (Feb '22) and remained lower than the all-NYC and adult NYC vaccination rates (80% and 89%, respectively). But the full vaccination rate of "peer" shelters (72%) was significantly higher than non-peer shelters (58%) (**figure 3**). On-site vaccination rates were also higher. Among peer shelters, SEC's full vaccination rate (86%) was comparable to the NYC adult rate and above the all-city rate (**figure 4**). We ascertained the extent to which we measured like samples before and after the peer support intervention by analyzing the extent to which client "exits" from shelters in this study contributed to actual turn over in those respective shelters. Mobility is a prominent feature within the New York shelter system, as clients often leave and return to the same shelter within days or weeks. Most "exits" from shelters occur for "unknown" reasons, and are, in fact, coded in the city's official database as "exit unknowns". "Exit unknowns" could, theoretically, entail three possibilities:

(1) leaving the shelter, remaining within the shelter system *and* returning to the shelter

(2) leaving the shelter, remaining within the shelter system *but not* returning to the shelter

(3) leaving the shelter system for reasons other than a housing placement.

From September 2021 to September 2022, 52% of total exits from our shelters (16,043 out of 28,531) were "exit unknowns".

Approximately 3.5% (n=993) of total exits during this period were due to a housing placement, which we can more safely assume entailed a permanent exit from the New York City shelter system. The remaining exits during this period could still entail a readmission to the shelter. These exits were coded, for example, as transfers to another shelter, admissions to healthcare facilities, and violations.

We therefore evaluated the extent to which "exit unknowns" *potentially* indicated a "true shelter exit" (as illustrated by possibilities 2 and 3).

Because mobility is a dominant characteristic of NYC shelters, it was crucial to understand the extent to which the potentially myriad patterns of mobility may have resulted in significant population changes in the peer support (PS) shelters and non-peer support (NPS) shelters that we surveyed before and after the peer vaccine support intervention.

Our evaluation of this matter proceeded in four steps. First, we calculated the difference between the total number of *unique* clients in PS and NPS shelters each month **and** the number of *unique* clients in those respective shelters on the last day of each month (**tables 5 and 6**). This figure provided us with the number of "total *theoretical* exits" (or, potential "true exits") that could have occurred over respective time periods (**table 7**). Second, we subtracted the number of total "exit unknowns" for PS and NPS shelters for each time period *from* the number the total number of *theoretical exits* in table 7 to ascertain the possibility that all "exit unknowns" were "true exits" from the shelter. This tabulation is included in **table 8.** Negative numbers (red cells) indicated that it was impossible for all "exit unknowns" to be "true exits" from shelters. This reflects the likelihood, confirmed by frontline staff, that the vast majority of clients more often leave and return to their respective shelters frequently. That is, the negative "exits" (**table 8**) indicated that shelter populations surveyed before and after the peer intervention were similar in their mobility patterns.

To further evaluate this hypothesis, we ascertained the possibility that the total number of "exit unknowns" could have been "true exits" under the *assumption* that all "non-exit unknowns" were also "true exits". This is the third step in our assessment. We subtracted all "non-exit unknowns" for each time period from the "total theoretical exits" (**table 9**). Positive numbers (green cells) indicated the number of exit unknowns that were "true" exits under the assumption that we have just noted. This

possibility arose in months for PS and NPS shelters after May 2022, when massive waves of migrants from the southern border began entering NYC shelters after governors of southern U.S. states "bused" them to the city. This situation continues unabated. Negative numbers (red cells) – recorded in PS and NPS shelters for pre and post periods, respectively - indicated that it was impossible for (a) any "exit unknowns" to be "true exits" and (b) all "non-exit unknowns" to be "true exits."

Fourth, we subtracted the total number of exits that were recorded in the official database ("exit unknowns" and all "non-exit unknowns") from the number of total number of "theoretical exits" (**table 10**). Again, "theoretical exits" reflected the difference between the total number of unique clients in shelters in particular months and the total number of unique clients in those shelters on the last day of the month. This calculation is essentially a sanity check, which shows that there were more "exits", recorded in official data records, than "true exits".

These steps confirm the high likelihood that our PS and NPS shelters similarly comprised highly mobile populations that often – continually – leave and re-enter shelters.

We must acknowledge one exception. Movement between shelters is inscribed in the function of "assessment" sites, Franklin and HWC (two NPS shelters), which assess needs of clients and assign them residence in another shelter within 21 days. In this context, the total number of "theoretical exits" in these two NPS shelters exceeded the total number of "exit unknowns" for pre and post periods, indicating that it was possible for all exit unknowns to be "true exits" (step two in the above analytical check). In this case, different populations may arise over survey periods due to the inherent nature of these sites. However, the total number of all exits, which include transfers and violations (and would not include housing placements), exceeded the total number of "theoretical exits" (the last analytical check), indicating the frequent movement of clients within the shelter system.

Figure 3

Covid-19 vaccine demand and coverage indicators (Sep '22): peer support (n=187) and non-peer support shelters (n=599)

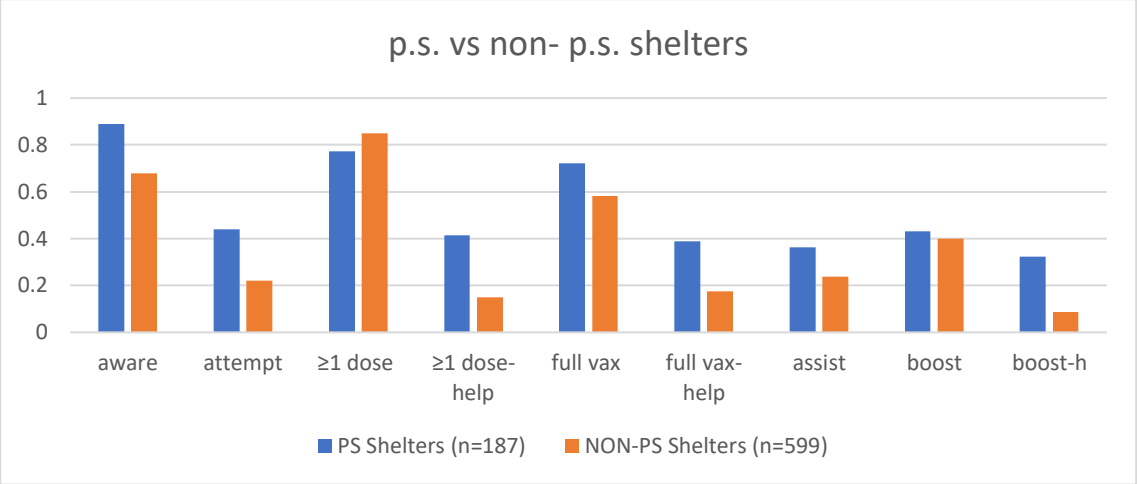


Figure 4

Covid-19 vaccine demand and coverage indicators (Sep '22): SEC (peer support shelters) (n=99) and non-peer support shelters (n=599)

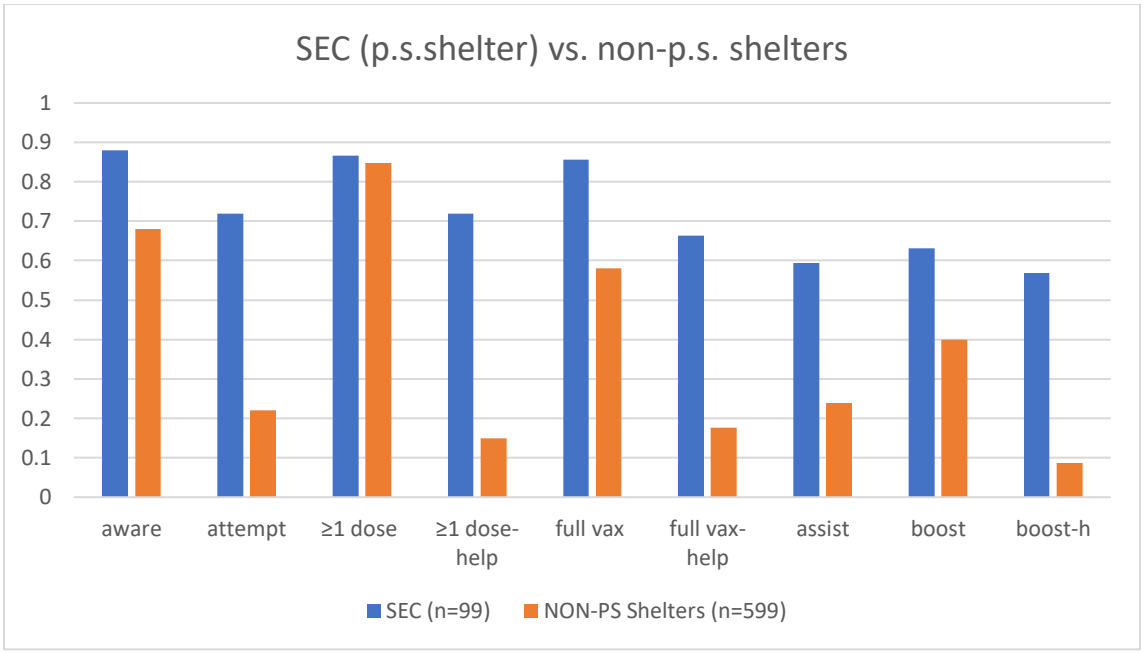


Table 5[5]

Total Unique Clients in Shelters

Sites	Sep '21	Oct '21	Nov '21	Dec '21	Jan '22	Pre	Feb '22	Mar '22	Apr '22	May '22	Jun '22	Jul '22	Aug '22	Sep '22	Post
PS	296	302	296	299	293	383	286	290	293	282	304	321	327	352	556
Non-PS	2423	2446	2431	2432	2432	4881	2376	2473	2459	2490	2605	2737	2814	3439	8209

Table 6:

Total Clients on Last Day of Time Period

Sites	Sep '21	Oct '21	Nov '21	Dec '21	Jan '22	Feb '22	Mar '22	Apr '22	May '22	Jun '22	Jul '22	Aug '22	Sep '22
PS	304	297	310	293	290	293	291	282	264	298	302	313	332
Non-PS	1711	1736	1759	1698	1764	1718	1739	1703	1771	1847	1905	1888	2023

Table 7

Total Theoretical Exits ("True Exits") from Shelter

Sites	Sep '21	Oct '21	Nov '21	Dec '21	Jan '22	Pre	Feb '22	Mar '22	Apr '22	May '22	Jun '22	Jul '22	Aug '22	Sep '22	Post
PS	23	35	22	40	38	128	25	33	43	47	32	49	47	51	255
Non-PS	712	710	672	734	668	3117	658	734	756	719	758	832	926	1416	6186

[5] Data on shelter exits in Tables 5-10 was unavailable for one PS shelter (the family shelter, Haven).

Table 8

Total Theoretical Exits ("True Exits") - Exit Unknowns

Sites	Sep '21	Oct '21	Nov '21	Dec '21	Jan '22	Pre	Feb '22	Mar '22	Apr '22	May '22	Jun '22	Jul '22	Aug '22	Sep '22	Post
PS	-156	-147	-139	-91	-130	-693	-128	-137	-136	-156	-202	-238	-144	-122	-1335
Non-PS	-220	-274	-272	-128	-129	-1402	-147	-410	-104	-316	-448	-543	-562	216	-2927

Table 9

Total Theoretical Exits ("True Exits") - Non-Exit Unknowns

Sites	Sep '21	Oct '21	Nov '21	Dec '21	Jan '22	Pre	Feb '22	Mar '22	Apr '22	May '22	Jun '22	Jul '22	Aug '22	Sep '22	Post
PS	-14	2	-21	2	-4	-65	5	-12	5	6	-3	20	13	10	-28
Non-PS	-339	-210	-209	-177	-233	-1547	-188	-283	-206	-275	35	225	161	91	-1053

Table 10

Total Theoretical Exits ("True Exits") - All Exits

Sites	Sep '21	Oct '21	Nov '21	Dec '21	Jan '22	Pre	Feb '22	Mar '22	Apr '22	May '22	Jun '22	Jul '22	Aug '22	Sep '22	Post
PS	-193	-180	-182	-129	-172	-886	-148	-182	-174	-197	-237	-267	-178	-163	-1618
Non-PS	-1271	-1194	-1153	-1039	-1030	-6066	-993	-1427	-1066	-1310	-1171	-1150	-1327	-1109	-10166

Conclusion: harnessing findings of the peer vaccine support program for recommendations

The first conclusion that we can draw is that the peer support program increased demand and access to the vaccine in SEC shelter amid the potential "fatigue" and hesitancy that peer workers had identified in this population. Peer workers in SEC were especially active in identifying fatigue and holding discussions, based on the FAQs, with numerous clients. They reported that these conversations helped convince younger clients to get vaccinated and that their presence may have facilitated vaccine appointments of older clients who were generally more willing to get vaccinated. As we recall, client vaccination rates among older clients were progressively higher than in younger cohorts. In SEC, 42%

of surveyed clients in February were between the ages of 45 to 64 while 48% of clients were between 18 and 44 years of age. By comparison, peer workers in Creston and Haven reported that hesitancy remained a problem among younger cohorts. In Creston, 41% of surveyed respondents were between 18 and 44. In Haven, 57% of respondents were in this age range (and only 11% were between 45 and 64). Among non-peer shelters, Clarke Thomas and Meyer had full vaccination rates above the city's full vaccination rate – 88% and 83% compared to 80%. These two neighboring adult male shelters had received vaccines in early 2021 and also had a high share of older clients.

The second conclusion is that the improvement in on-site vaccination rates in SEC indicated that the peer team effectively engaged with the initially hesitant clients to enable the access to vaccines that were delivered to shelters and administered by the government, thereby increasing service uptake among the site's clients. Thirdly, and relatedly, the SEC peer team's ability to connect clients to the service at the shelter indicated a successful method of enhancing clients 'agency to demand and retrieve an essential public service. The effective level of peer engagement with clients at SEC, which led to a higher rate of service access compared to other sites, can be attributed to the convergence of four factors that a literature review of peer support studies among homeless populations has identified as increasing the quality of life of such clients (Barker & Maguire 2017, pp.608-609). The *shared experiences* between peer support workers and clients (e.g., living in the same transitional housing facility) and *role modeling* – "possess[ing] similar traits" as clients served – engendered "trust" among clients and "rapport" between both parties, which motivated clients to discuss their hesitancy, consider information provided by peer workers and, in some cases, proactively seek assistance of peer workers to attend vaccine appointments. In this context, the peer workers provided a consistent base of *social support* – an outcome that scholars have shown can "integrat[e]" homeless clients into a "service community". "Service" "integration" was essential, for delivering the vaccine to homeless clients required

coordination between government agencies and non-government service providers – a public-private partnership (PPP) model that is often undermined by conflicts and coordination problems that inhibit the access to services of targeted, and particularly vulnerable, populations (Swyngedouw, 2005).

Lastly, peer workers encouragement of *attendance* to vaccine appointments through individual outreach efforts and group engagement, during social events and in shared spaces, contributed to comparatively higher on-site vaccination rates at SEC. Barker and Maguire (2017) confirmed that successful methods of encouraging the attendance of people experiencing homelessness to service appointments had positive outcomes on such clients 'well-being. In our final group meeting, peer workers revealed that the "social event" and "shared space" approach was more successful in SEC than other peer sites, particularly Haven, which indicated that group approaches may work better in single adult male sites than in family sites.

The peer vaccine program enhanced capacities of the local government and our non-governmental service agency to deliver the vaccine in SEC because frontline social workers provided a structure and support base that enabled peers to transform their knowledge of homelessness into a specialized form of outreach that addressed the needs and concerns of clients. Rooted in the establishment of trust between persons experiencing homelessness, this peer model can, under certain conditions, more sustainably produce behavioral changes that lead to well-being than traditional case management approaches (Barker & Maguire, 2017; Craig et al, 2008; Moore et al, 2015; World Bank & IMF, 2020). Municipal governments that contract non-government agencies to deliver services to people experiencing homelessness should implement peer programs for annual flu and Covid-19 vaccine drives that ensure training and resources to frontline logistics and vaccine coordinators and client peers with two objectives: one, to establish a structure and support base that enable peers to work effectively with frontline workers and encourage clients to avail services under positive and enabling circumstances; and

secondly, to address additional needs of clients that may arise from their frequent mobility in and out of shelters.

References

Anuta, J. (2020, May 20). De Blasio pushes hard against moving all homeless to hotels. *Politico*. https://www.politico.com/states/new-york/albany/story/2020/05/20/de-blasio-pushes-hard-against-moving-all-homeless-to-hotels-1284548

Barker, S. L., & Maguire, N. (2017). Experts by Experience: Peer Support and its Use with the Homeless. *Community Mental Health Journal*, 53(5), 598–612. https://doi.org/10.1007/s10597-017-0102-2

Centers for Disease Control and Prevention (CDCa). (n.d.). Data Definitions for Covid-19 Vaccinations in the United States. https://www.cdc.gov/coronavirus/2019-ncov/vaccines/reporting-vaccinations.html (accessed June 20, 2023)

Centers for Disease Control and Prevention (CDCb). (n.d.). Covid-19 Vaccine Effectiveness. https://www.cdc.gov/coronavirus/2019-ncov/vaccines/effectiveness/work.html?s_cid=10464:vaccine%20effectiveness:sem.ga:p:RG:GM:gen:PTN:FY21 (accessed June 20, 2023)

Centers for Disease Control and Prevention (CDCc). (n.d.). Long Covid or Post-Covid Conditions. https://www.cdc.gov/coronavirus/2019-ncov/long-term-effects/index.html (accessed June 20, 2023)

Centers for Disease Control and Prevention (CDC d). (n.d.). Possible Side Effects After Getting a Covid-19 Vaccine. https://www.cdc.gov/coronavirus/2019-ncov/vaccines/expect/after.html (accessed June 20, 2023)

Craig, T.K., Johnson, S.D., McCrone, P., Afuwape, S., Hughes, E., Gournay, K., & Thorncroft, G. (2008). Psychiatric Symptoms, Social Functioning, and Service Costs at 18 Months. *Psychiatric Services, 59 (3)*, 276-282(3).

Cullinane, S., Yan, H., and Ellis, R. (2020, December 14). The first public Covid-19 vaccines reach all states as the US death toll 300,000. *CNN*. https://www.cnn.com/2020/12/14/health/us-coronavirus-monday/index.html

Goldstein, J. (2022, May 17). New York City Coronavirus cases reach 'High' alert levels." *New York Times*. https://www.nytimes.com/2022/05/17/nyregion/nyc-covid-high-alert.html (accessed June 20, 2023)

Iraywan, A.R., Stoicescu, C., Sjahrial, F., Kuntano, N., Dominich, A. (2002) The impact of peer support on testing, linkage to and engagement in HIV care for people who inject drugs in Indonesia: qualitative perspectives from a community-led study. Harm Reduction Journal. 19(16):1-13. doi: 10.1186/s12954-022-00595-8

Kessler, D., Egan, M., Kubina, L.A. Peer support for stroke survivors: a case study. BMC Health Services Research. 2014; 14(256): 1-9. doi: 10.1186/1472-6963-14-256

Kirzinger A., Sparks G., Brodie M. KFF COVID-19 vaccine monitor: In their own words, Six Months Later. KFF. (2021). https://www.kff.org/coronavirus-covid-19/poll-finding/kff-covid-19-vaccine-monitor-in-their-own-words-six-months-later

Montgomery, M., Meehan, A.M., Cooper, A., & Mosites, E. (2021). Morbidity and mortality weekly report: Notes from the field. U.S. *Department of Health and Human Services/Centers for Disease Control and Prevention*; 70(48):1676-1678.

McKinley, J. (2020, March 22). "New York City Is Now an Epicenter of the Coronavirus Pandemic." *New York Times*. https://www.nytimes.com/2020/03/22/nyregion/Coronavirus-new-York-epicenter.html (accessed June 20, 2023)

Moore, G.F., Audrey, S., Barker, M., Bond, L., Bonell, C., Hardeman, W., & Baird, J.(2015). Process evaluation of complex interventions: Medical Research Council guidance. British Medical Journal, 350, h1258.

New York City (NYC) Department of Health. (n.d.). Covid-19 data. https://www.nyc.gov/site/doh/covid/covid-19-data-vaccines.page (accessed June 20,2023)

PATA. (2017). PATA Peer Support Programme Handbook: "Improved access to and quality of treatment and care for HIV+ infants, children and adolescents." https://teampata.org/wp-content/uploads/2017/10/PATA-Peer-Supporter-Handbook-review-2017_Final.pdf (accessed December 17, 2023)

Raskin, S. (2021, May 10). Only about 10 percent of NYC shelters have been vaccinated. *New York Post*. https://nypost.com/2021/05/10/only-about-10-percent-of-nyc-shelter-residents-have-been-vaxxed/amp/ (accessed June 20, 2023)

Routhier, G. and Nortz, S. (2020). Covid-19 and Homelessness in New York City: Pandemic for New Yorkers without Homes – Homeless People in Shelters Face Disproportionately High Mortality Rate. *Coalition for the Homeless*; pp 1-17. https://www.coalitionforthehomeless.org/wp-content/uploads/2020/06/COVID19HomelessnessReportJune2020.pdf (accessed June 20, 2023)

Sadoff, J., Gray, G., Vandebosch, A., Cárdenas, V., Shukarev, G., Grinsztejn, B., Goepfert, P. A., Truyers, C., Fennema, H., Spiessens, B., Offergeld, K., Scheper, G., Taylor, K. L., Robb, M. L., Treanor, J., Barouch, D. H., Stoddard, J., Ryser, M. F., Marovich, M. A., … Douoguih, M. (2021). Safety and Efficacy of Single-Dose Ad26.COV2.S Vaccine against Covid-19. New England Journal of Medicine, 384(23), 2187–2201. https://doi.org/10.1056/NEJMoa2101544Swyngedouw, E. (2005). Governance Innovation and the Citizen: The Janus Face of Governance-Beyond-the-State. *Urban Studies*, Vol. 42 , 1991-2006

Thomas, S. J., Moreira, E. D., Kitchin, N., Absalon, J., Gurtman, A., Lockhart, S., Perez, J. L., Pérez Marc, G., Polack, F. P., Zerbini, C., Bailey, R., Swanson, K. A., Xu, X., Roychoudhury, S., Koury, K., Bouguermouh, S., Kalina, W. V., Cooper, D., Frenck, R. W., … Jansen, K. U. (2021). Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine through 6 Months. *New England Journal of Medicine*, 385(19), 1761–1773. https://doi.org/10.1056/NEJMoa2110345U.S.

Thompson, M. G., Burgess, J. L., Naleway, A. L., Tyner, H., Yoon, S. K., Meece, J., Olsho, L. E. W., Caban-Martinez, A. J., Fowlkes, A. L., Lutrick, K., Groom, H. C., Dunnigan, K., Odean, M. J., Hegmann, K., Stefanski, E., Edwards, L. J., Schaefer-Solle, N., Grant, L., Ellingson, K., … Gaglani, M. (2021). Prevention and Attenuation of Covid-19 with the BNT162b2 and mRNA-1273 Vaccines. New England Journal of Medicine, 385(4), 320–329. https://doi.org/10.1056/NEJMoa2107058

Food & Drug Administration (FDA). (2021, August 23). https://www.fda.gov/news-events/press-announcements/fda-approves-first-covid-19-vaccine#:~:text=Since%20Dec.,age%20on%20May%2010%2C%202021. (accessed June 20, 2023)

World Bank Group and International Monetary Fund. (2020). Peer Support Facilitator Guide: Leading Online Support Groups. Health and Safety Directorate, 1-10

Zivot, J. B., & Jabaley, C. S. (2022). American perspectives on COVID-19 vaccination hesitancy and refusal: Time for a new approach? *Journal of Critical Care*, 67, 189–190. https://doi.org/10.1016/j.jcrc.2021.09.016