The Power of Partnership: NYCEAL Collaborations With Health Agencies and Mobile Vaccination Vans

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New York City experienced a high COVID-19 burden and striking disparities among racial and ethnic minoritized groups. The New York Community Engagement Alliance Against COVID-19 Disparities (NYCEAL) collaborated with health agencies and clinical providers to increase and facilitate COVID-19 vaccinations across New York City. NYCEAL partners and their network of hundreds of community health workers delivered vaccine education, fostered community trust, and supported vaccine uptake among low-income, limited–English-proficient, and racial and ethnic minoritized communities. With funding from the National Institutes of Health (NIH), the objective of NYCEAL was to reduce COVID-19 disparities by increasing vaccine uptake and promoting trust in science. (*Am J Public Health*. 2024;114(S1):S92–S95. https://doi.org/10.2105/AJPH.2023.307455)

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INTERVENTION AND IMPLEMENTATION

The NYCEAL team, comprising a citywide network of academic and community-based organization (CBO) partners, conducted events at CBO sites throughout New York City (NYC). Thirty-eight organizational partners and 120 community health workers (CHWs) provided culturally appropriate and multilingual COVID-19 vaccine information and addressed misinformation in 11 languages.

With many New Yorkers experiencing job losses and food insecurity, NYCEAL partners addressed social determinants of health (SDOH) needs by hosting food assistance and community resource and health information events colocated with mobile vaccination vans and clinics. Specifically, NYCEAL leveraged the NYC Department of Health and Mental Hygiene's resources and Health + Hospitals' Test & Trace program to facilitate access and linkages to testing and mobile vaccine units. The on-site units offered first- or second-dose COVID-19 vaccinations, as well as booster and pediatric doses to eligible participants, regardless of insurance or citizenship status or appointment status. NYCEAL CBOs facilitated vaccine drives with in-person support in 11 languages and engaged clients through mass text-banking. Phone-based interpretation services were also available on site via the mobile units.

PLACE, TIME, AND PERSONS

Municipally supported COVID-19 mobile vaccine clinics were deployed from July 2021 to June 2022 across NYC, targeting more than 50 zip codes experiencing COVID-19 vaccine disparities. Many NYCEAL CBO partners had established relationships with priority communities in these neighborhoods and were involved in NYC Department of Health and Mental Hygiene and Test & Trace advisory committees. CBO partners were key to fostering trust between the mobile vaccine units and underserved communities. NYCEAL CBO partners and frontline staff were able to "meet communities where they were" and, as trusted messengers, supported in-language education and navigation to vaccination services offered by municipal agencies.

PURPOSE

In April 2020, at the onset of the pandemic, the NYC Taskforce for Racial Inclusion and Equity (TRIE)[1] was formed to mitigate the disproportionate impact that COVID-19 had on communities of

color. The Taskforce soon identified a number of TRIE neighborhoods that were most impacted by COVID-19—accounting for more than 50% of NYC's COVID-19 cases—with these communities also experiencing higher health and socioeconomic disparities.[2] Many studies indicate that racial and ethnic minoritized and underserved populations experience worse health outcomes, substantial disparities, and many health care access barriers.[3–5] Existing literature suggests that mobile health clinics are effective interventions in facilitating access to health services for these populations.

The availability of COVID-19 vaccines through health agencies presented an opportunity to reduce COVID-19 morbidity, mortality, and inequities. Convenient, flexible, and visible delivery of vaccines in neighborhood locations via mobile vans and pop-up clinics reduced accessibility barriers, such as transportation, limited hours, Internet access, and need for appointments.[6–8] The NYCEAL network was positioned to improve access to vaccines through mobile vans and clinics by leveraging their partnership with culturally and linguistically responsive CBOs and CHWs and by supporting coordination and promotion of events across neighborhoods.

EVALUATION

In total, NYCEAL CBOs hosted mobile vaccination vans at 187 events across 40 zip codes in NYC. A total of 3162 individuals were vaccinated, reaching an average of 18 people (range = 0–227) per event. More than half (55%) of the zip codes were TRIE neighborhoods, reaching communities most impacted by COVID-19.

We used COVID-19 vaccine site information and data from the American Community Survey to assess NYCEAL reach, by comparing neighborhood characteristics by zip code where NYCEAL held events to zip codes where NYCEAL did not hold events (Table 1).[9,10] For vaccine accessibility, neighborhoods where NYCEAL hosted mobile van events had a similar average number of vaccine sites per zip code (7.6 vs 5.9; $P = .07$) but a smaller average distance to the nearest site compared with nonparticipating neighborhoods (0.25 mi vs 0.29 mi; $P < .001$).

In comparing SDOH, NYCEAL held events in neighborhoods with higher levels of social need across multiple measures. These neighborhoods, compared with nonparticipating neighborhoods, were significantly less White (34% vs 46%; $P < .001$), had lower household median income ($67 405 vs $91 424; $P < .001$), and had greater proportions of people without a high-school degree (19% vs 14%; $P < .001$) and without access to the Internet (13% vs 10%, $P < .001$). In examining characteristics related to linguistic barriers to receiving vaccinations, we found greater proportions of foreign-born (39% vs 33%; $P < .001$), noncitizens (17% vs 13%; $P < .001$), and limited–English-proficient households (17% vs 11%; $P < .001$) in NYCEAL neighborhoods. Compared with other NYC neighborhoods, NYCEAL-targeted neighborhoods had significantly higher levels of people receiving public assistance, including public health insurance (45% vs 39%; $P < .001$) and Supplemental Nutrition Assistance Program (21% vs 15%; $P < .001$), and had more people who were uninsured (8% vs 6%; $P < .001$).

In qualitative interviews, staff from five CBOs who regularly participated in mobile vaccine events in NYC reported a synergistic effect of NYCEAL with public health partners (Table A, available as a supplement to the online version of this article at https://ajph.org). The combination of community members' trust in CBOs and CHWs and immediate access to mobile vaccine units increased vaccine uptake. The partnership between trusted messengers and mobile onsite services was essential, and this coordinated delivery model ultimately fostered trust in vaccines and increased vaccination rates.

Furthermore, repeated deployment of mobile units to convenient and trusted community locations, including on weekends and during nontraditional work hours, made vaccines more accessible. This model was largely successful because CBO staff and CHWs served as the connector between the community and mobile unit vendors, and their on-site presence helped bridge language and cultural gaps for communities, including immigrant and limited–English-proficient individuals, and addressed concerns and misinformation via one-on-one conversations. However, there were challenges with scheduling events in advance and at mobile vaccine events, such as limited in-language vaccine information in written materials, lack of clear and culturally sensitive communication between mobile vendor staff and CBO staff, lack of consistent incentives, and limited availability of vaccine types per age group.

SUSTAINABILITY

The NYCEAL team facilitated partnership, communication, and coordination between CBOs and municipal mobile vaccine clinics, suggesting that this model could be utilized for future COVID-19 waves or for emergency preparedness. It provided a useful and adaptable strategy aimed at meeting unmet health and SDOH needs of

TABLE 1— Comparison of Mobile Vaccine Van Event Neighborhoods Versus Nonparticipating Neighborhoods: American Community Survey 5-Year Data, (New York City) 2017–2021

	NYCEAL Mobile Van Event Neighborhoods (n = 40)	Nonparticipating Neighborhoods[a] (n = 171)	*t* Test *P*
Vaccine accessibility[9]			
Average no. of vaccine sites per zip code	7.6	5.9	.07
Average distance to nearest vaccine site, in miles[b]	0.25	0.29	< .001
Social determinants of health[10,c]			
Race/ethnicity, %			
White	34	46	< .001
Black	25	20	.08
Asian	17	15	.16
Hispanic	29	25	.08
Nativity, citizenship, and English proficiency, %			
Foreign born	39	33	< .001
Noncitizen	17	13	< .001
Limited–English-proficient households	17	11	< .001
Education: less than high-school graduate, %	19	14	< .001
Household income: average median, $	67 405	91 424	< .001
No Internet access,[d] %	13	10	< .001
Health insurance status, %			
Public health insurance	45	39	< .001
Uninsured	8	6	< .001
Households receiving Supplemental Nutrition Assistance Program, %	21	15	< .001

Note. NYCEAL = New York Community Engagement Alliance Against COVID-19 Disparities.

[a]Nonparticipating neighborhoods are defined as zip codes in which NYCEAL did not hold events.
[b]Average of minimum distances between census tracts and nearest vaccine sites within a zip code.
[c]Percentages are the average percentage across all zip codes within neighborhood categories. Data from the American Community Survey 5-y 2017–2021.
[d]The American Community Survey defines no Internet access as having no Internet subscription, nor access to Internet without a subscription.

minoritized communities and promoted trust. This approach may also apply to other vaccine deployment efforts, such as influenza and mpox. Long-term sustainability will require consistent funding, ongoing community engagement, and resources to address language barriers and availability of supplies.

PUBLIC HEALTH SIGNIFICANCE

NYCEAL employed a grassroots, community-engaged approach by working with trusted messengers to effectively reach diverse racial and ethnic minoritized populations, including communities experiencing higher rates of limited English proficiency, lower household median income, greater reliance on public assistance, and greater SDOH needs. CBOs and CHWs provided on-the-ground culturally sensitive and in-language support and education, which increased vaccine confidence. The consistent presence of mobile vaccine units at community sites, in partnership with CBOs and CHWs, was key to increasing vaccine uptake and fostering trust between communities and mobile vaccine units.

Working with knowledgeable and trusted members of communities and ensuring accessible, convenient access are vital in promoting trust and adoption of public health preventive strategies. CBOs are actively engaged in their local communities, and bringing mobile clinics to community sites can dramatically improve trust in science, vaccine acceptance, and CBO capacity to meet their communities' needs. AJPH

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CONFLICTS OF INTEREST

The authors have no potential or actual conflicts of interest to disclose.

HUMAN PARTICIPANT PROTECTION

This work was approved as quality improvement by the Institute for Family Health's institutional review board.

REFERENCES

1. HHS Action Plan to Reduce Racial and Ethnic Health Disparities. US Department of Health and Human Services; 2011.
2. Taskforce on Racial Inclusion & Equity: Progress Report. NYC Taskforce on Racial Inclusion and Equity; 2021.
3. Hill CF, Powers BW, Jain SH, Bennet J, Vavasis A, Oriol NE. Mobile health clinics in the era of reform. *Am J Manag Care.* 2014;20(3):261–264.
4. Morano JP, Zelenev A, Lombard A, Marcus R, Gibson BA, Altice FL. Strategies for hepatitis C testing and linkage to care for vulnerable populations: point-of-care and standard HCV testing in a mobile medical clinic. *J Community Health.* 2014;39(5):922–934. https://doi.org/10.1007/s10900-014-9932-9
5. Hill C, Zurakowski D, Bennet J, et al. Knowledgeable Neighbors: a mobile clinic model for disease prevention and screening in underserved communities. *Am J Public Health.* 2012;102(3):406–410. https://doi.org/10.2105/AJPH.2011.300472
6. Kennedy S, Grewal M, Roberts EM, Steinauer J, Dehlendorf C. A qualitative study of pregnancy intention and the use of contraception among homeless women with children. *J Health Care Poor Underserved.* 2014;25(2):757–770. https://doi.org/10.1353/hpu.2014.0079
7. Dasgupta S, Kramer MR, Rosenberg ES, Sanchez TH, Reed L, Sullivan PS. The effect of commuting patterns on HIV care attendance among men who have sex with men (MSM) in Atlanta, Georgia. *JMIR Public Health Surveill.* 2015;1(2):e10. https://doi.org/10.2196/publichealth.4525
8. Ahmed SM, Lemkau JP, Nealeigh N, Mann B. Barriers to healthcare access in a non-elderly urban poor American population. *Health Soc Care Community.* 2001;9(6):445–453. https://doi.org/10.1046/j.1365-2524.2001.00318.x
9. NYC COVID-19 and Flu Vaccine Finder. The Official Website of the City of New York. Available at: https://vaccinefinder.nyc.gov. Accessed December 13, 2022.
10. US Census Bureau. American Community Survey 2017–2021, 5-year data. Available at: https://data.census.gov. Accessed December 13, 2022.