

Utilizing a Community-Academic Partnership to Promote Vaccine Equity across San Bernardino County Black Communities

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Environmental Racism in San Bernardino County, CA¹⁻³

San Bernardino County, CA is a part of the Inland Empire—one of the fastest-growing regions in the United States

More than 70% of the region is populated by racially and ethnically minoritized (Black/ African American and Hispanic/Latino) individuals

Over the last decade, approximately 90% of warehouse growth in Southern California has occurred in the Inland Empire

The growth in warehouses has been correlated to an increase in carbon emissions and pollution in the region that can negatively impact health outcomes

Reports have shown that there is an increase in lung illnesses (including asthma, COVID-19 and RSV) and related hospitalizations, in the Inland Empire, when compared to other regions of Southern California

Racially and ethnically minoritized individuals are 3x more likely to reside in areas with a high pollution burden

Additional Systems of Oppression³

Homophobia

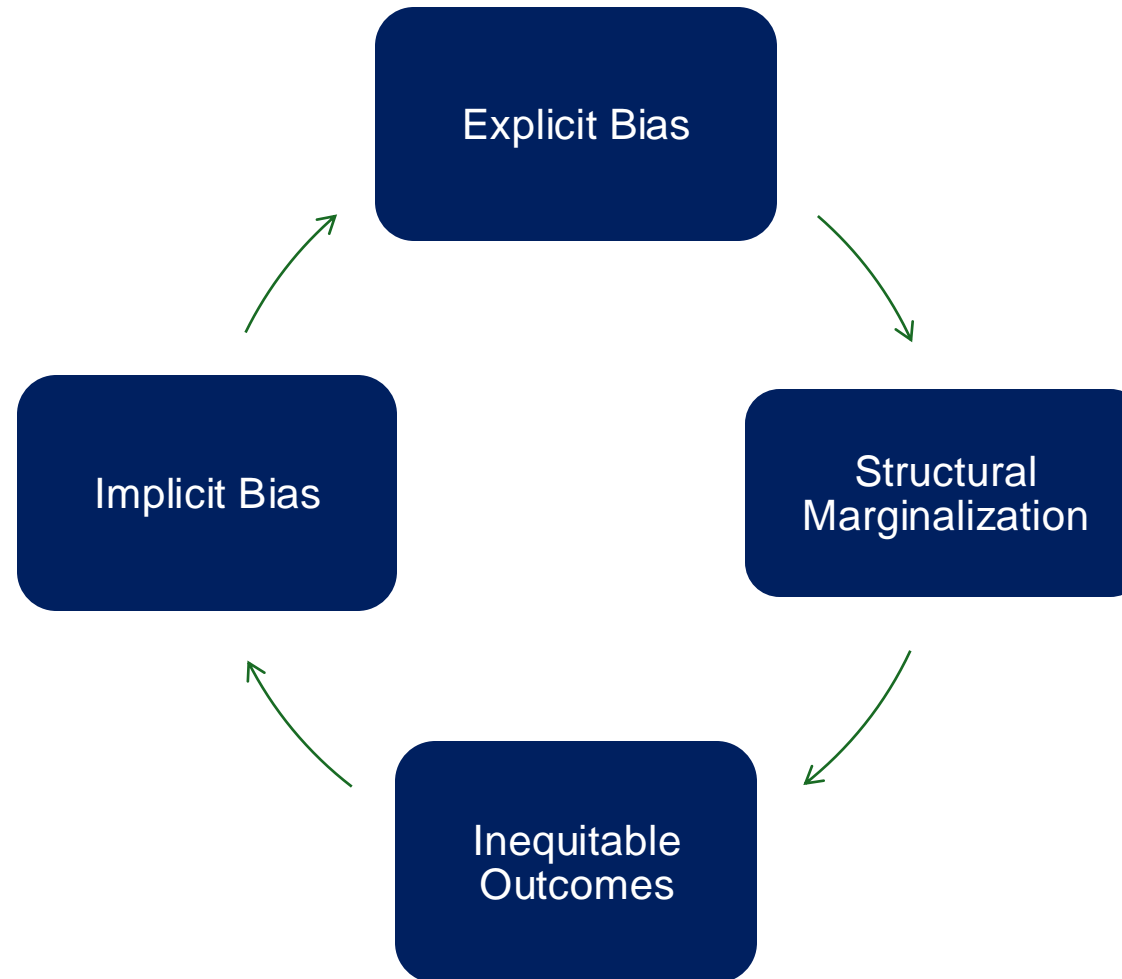
Xenophobia

Ableism

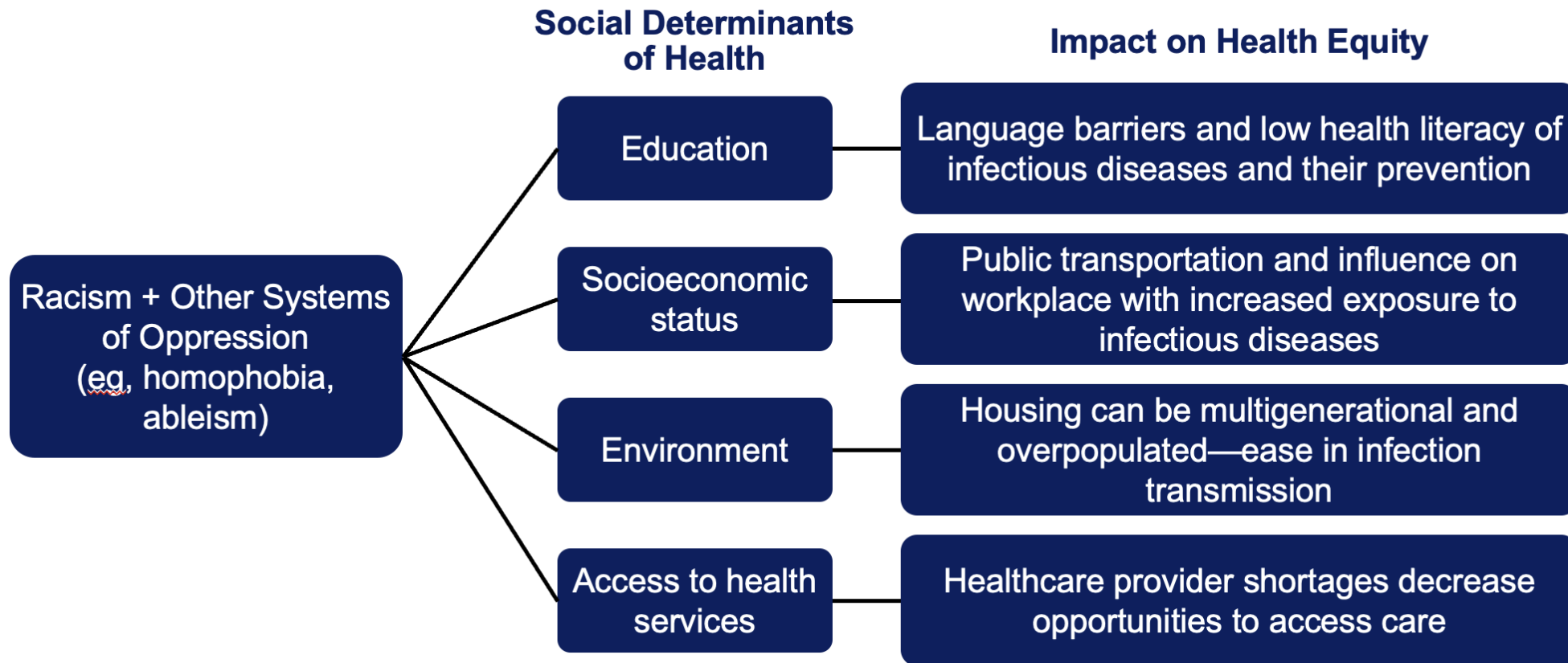
Classism

Ageism

Impact of Implicit and Explicit Bias on Healthcare⁴



Racism, Additional Systems of Oppression, and Inequities in Social Determinants of Health⁵⁻⁶



Vaccine Inequity^{10,11}

Black and Latino/LatinX individuals are less likely to be vaccinated against coronavirus disease-19 (COVID-19) despite mortality rates being 1.7 and 1.6 times higher than their White counterparts, respectively

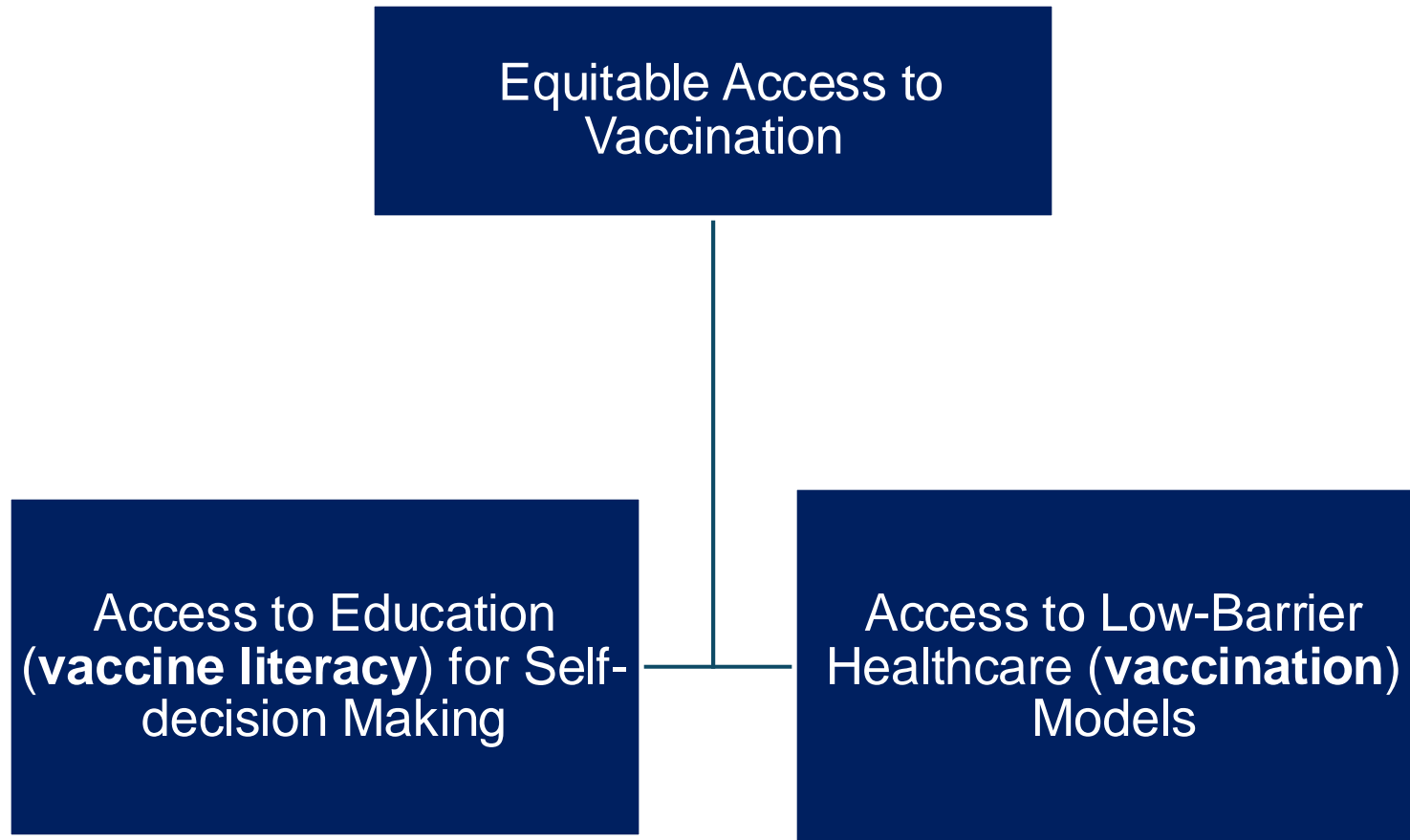
The Centers for Disease Control and Prevention (CDC) reported that less than 50% of Black, Latino/LatinX, and Native American individuals were vaccinated against influenza during the past ten flu seasons

In San Bernadino County, CA more than 50% of the Black population remains unvaccinated against COVID-19

Addressing the Uncovered Inequities



Promoting Equitable Vaccine Uptake



Three-tiered Approach For Creating Equitable Vaccination Access^{7,8}



Engagement Of Black Faith Leaders^{7,8}

The United States is a highly religious nation and faith leaders occupy large roles in minoritized communities



Leveraging existing relationships with two church organizations: Inland Empire of Concerned African American Churches (IECAAC) and Congregations Organized for Prophetic Engagement (COPE) we gained access to their Black membership



The faith leaders organized platforms to disseminate information and orchestrated major processes necessary for the clinics

COVID-19 Vaccine Education Sessions^{7,8}

The COVID-19 vaccine education sessions are offered alongside community vaccination clinics

The educational sessions are intentionally focused on easily translating the pathophysiology of the disease, the mechanism of vaccines, and race/ethnicity-specific clinical trials information

In previous research published on the sessions, we observed an increase in post-session awareness and acceptance of the vaccines



Low-barrier Community Vaccination Clinics^{7,8}

Several barriers to vaccination include:

Lack of digital readiness

Limited transportation options

Distance to vaccination entity

Healthcare system discrimination and stigmatization

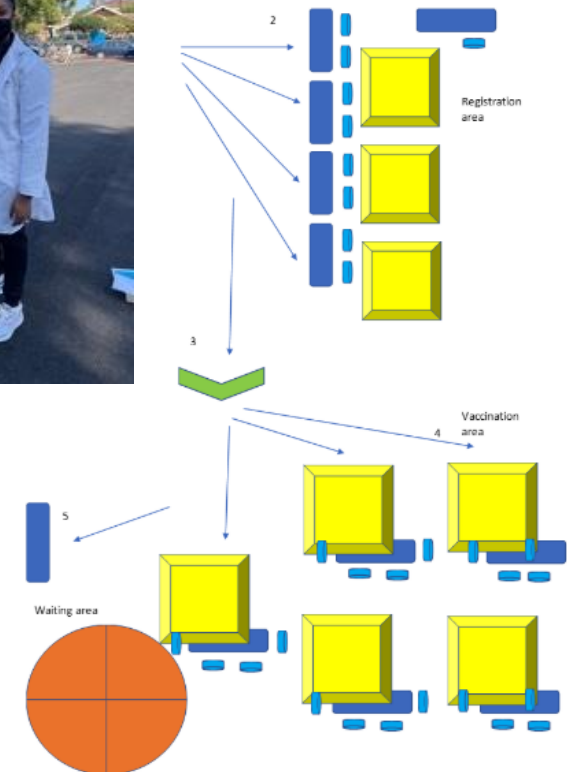
To overcome these barriers, we instituted the following

Paper-based registration

Pop-up clinic at a church located in the Black community

Vaccinations are transported and overseen by a Black Infectious Disease trained pharmacist

Inclusion of community health workers and volunteers in the vaccination clinics



Integration Of Professional Students In COVID-19 Community Vaccination Clinics^{7,8}

Professional students are often taught about illnesses without the context of social determinants of health inequities

Volunteer opportunities within community vaccination clinics provide them with tangible experiences

This could potentially translate to their provision of better healthcare



Outcomes from COVID-19 Community Vaccination Clinics^{7,8}

Number of Moderna first-dose vaccination clinics in the Black Community: **4 (800+ individuals vaccinated)**

Number of Moderna second-dose vaccination clinics in the Black Community: **4 (800+ individuals vaccinated; 87% return rate)**

Number of Johnson & Johnson vaccination clinics in the Black Community: **1 (314 individuals vaccinated)**

Number of third-dose vaccination clinics in the Black Community: **2 (50 individuals vaccinated)**

0.6% increase in Black vaccinees at mass vaccination site following community clinic

Patients Vaccinated in Mass Vaccination Clinic		Patients Vaccinated in Community Vaccination Clinic	
Black	579 (3%)	Black	351 (83.5%)
American Indian or Alaskan Native	63 (0.4%)	American Indian or Alaskan Native	1 (0.2%)
Native Hawaiian	22 (0.13%)	Native Hawaiian	1 (0.2%)
Asian	2,687 (15.6%)	Asian	3 (0.7%)
White	11,483 (66.4%)	White	19 (4.5%)
Other	611 (3.5%)	Other	10 (2.4%)
Unknown	1,815 (10.5%)	Unknown	35 (8.3%)
Total Number Vaccinated	17,212	Total Number Vaccinated	420

Abdul-Mutakabbir, Jacinda C., et al. "Rapid implementation of a community-academic partnership model to promote COVID-19 vaccine equity within racially and ethnically minoritized communities." *Vaccines* 10.8 (2022): 1364.

Brief Overview of Intervention Progression

Successive efforts included utilizing the three-tiered approach to promote influenza vaccine uptake



The education was provided in-person alongside a community health fair



Funding was acquired from CSL Seqirus, incentives were provided to participating churches and their congregants

Join Life Changing Ministries in Partnership w/ COPE Health Equity Collaborative for...

Community Health and Wellness Fair

Sunday September 17th
10:00-1:00pm

5395 N F St.
San Bernardino, CA 92407



 "Addressing Preventative Health Disparities in the Black Community"

Educational Informational Sessions:

- Influenza/Covid-19

Free Screenings:

- Blood pressure
- Diabetes

Resources:

- Sickie Cell
- CPR Demonstrations
- Behavioral Health
- Elder Home Care
- Medi-Cal Enrollment
- And more...



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Preliminary Outcomes of Influenza Community-Engaged Intervention: Survey Participants

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Vaccine Education
Events



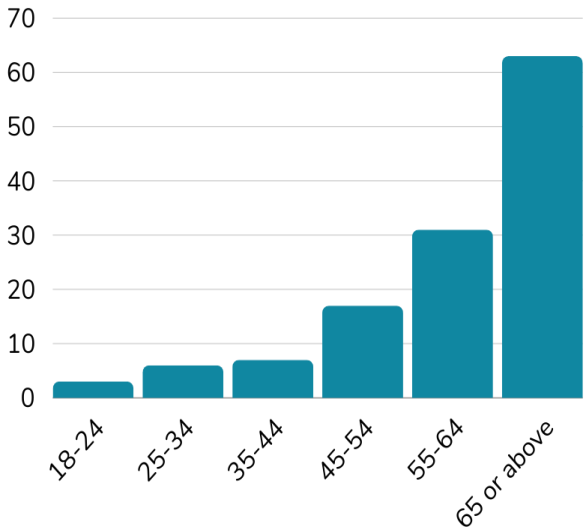
Three major counties
majorly represented: San
Bernardino County, Los
Angeles County, Riverside
County



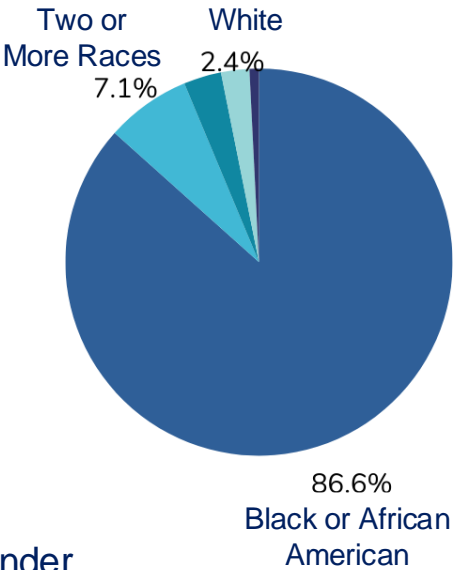
Zip code level data: 100% of
participants reside in a medium-high to
highly vulnerable area

Pre-Survey: 127 respondents; Post-Survey: 109 respondents

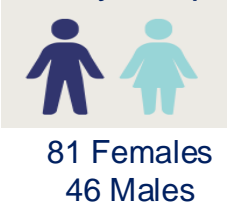
Pre-Survey Respondents by Age Group



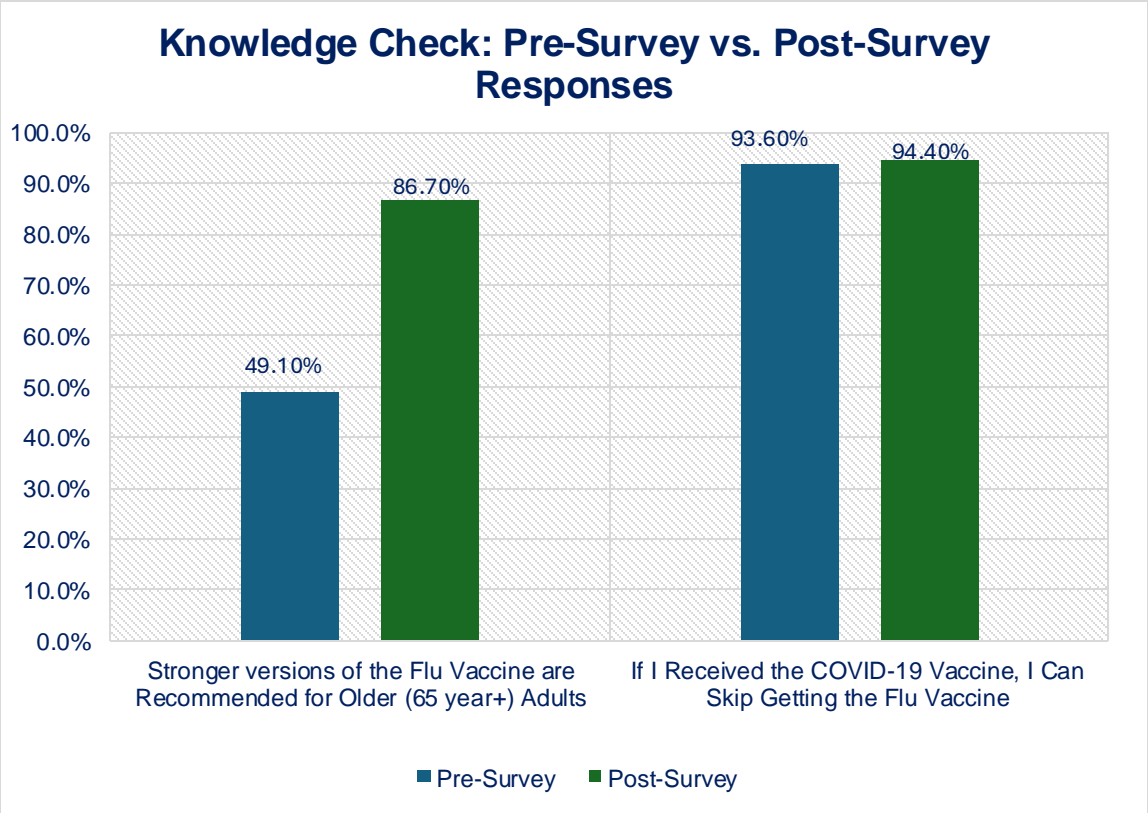
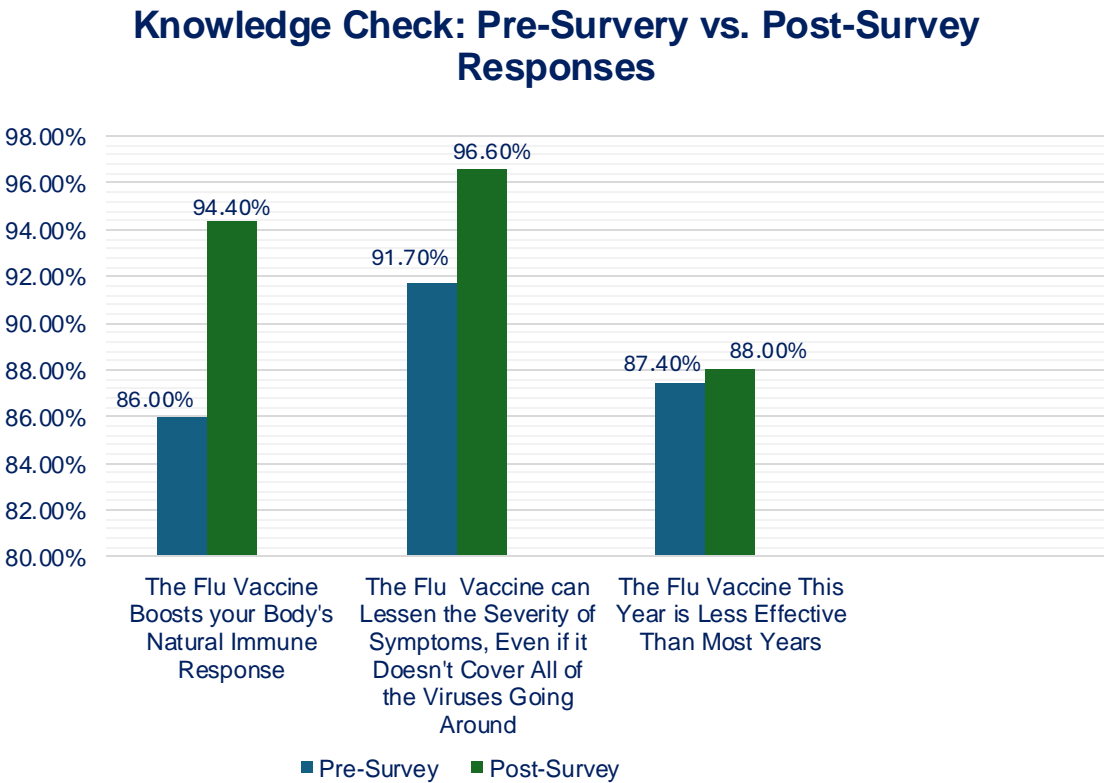
Pre-Survey Participants by Race



Pre-Survey Respondents by Gender



Preliminary Outcomes of Influenza Community-Engaged Intervention: Knowledge Check



Presentation Satisfaction



87% of participants found the presentation extremely effective in increasing their general knowledge about the flu vaccine

87.9% of participants found the presentation extremely effective in helping them understand the benefits of the flu vaccine

79.4% of survey respondents found the presentation extremely effective in helping them trust the safety of the flu vaccine

Preliminary Outcomes of Influenza Community-Engaged Intervention: Behavioral Change

PRE-SURVEY

39.7%

Prior to the presentation, 39.7% of participants reported it was “very likely” that they would get a flu vaccine

POST-SURVEY

72.2%

Following the presentation, 72.2% of participants reported it is “extremely likely” that they will get a flu vaccine

75.9%

75.9% of participants reported that they are “extremely likely” to recommend the flu vaccine to a family member or friend

Preliminary Outcomes of Influenza Community Engaged Intervention: Quick Facts on Individuals Vaccinated

96 vaccination doses were provided beginning with the September community outreach event

- 40 (42%) Influenza vaccines were given
- 56 (58%) COVID-19 vaccines were given
- 86 (90%) of the vaccination doses were administered to individuals who identified as Black/African American
- 32 (36%) of the doses represent COVID-19 and Influenza vaccines co-administered

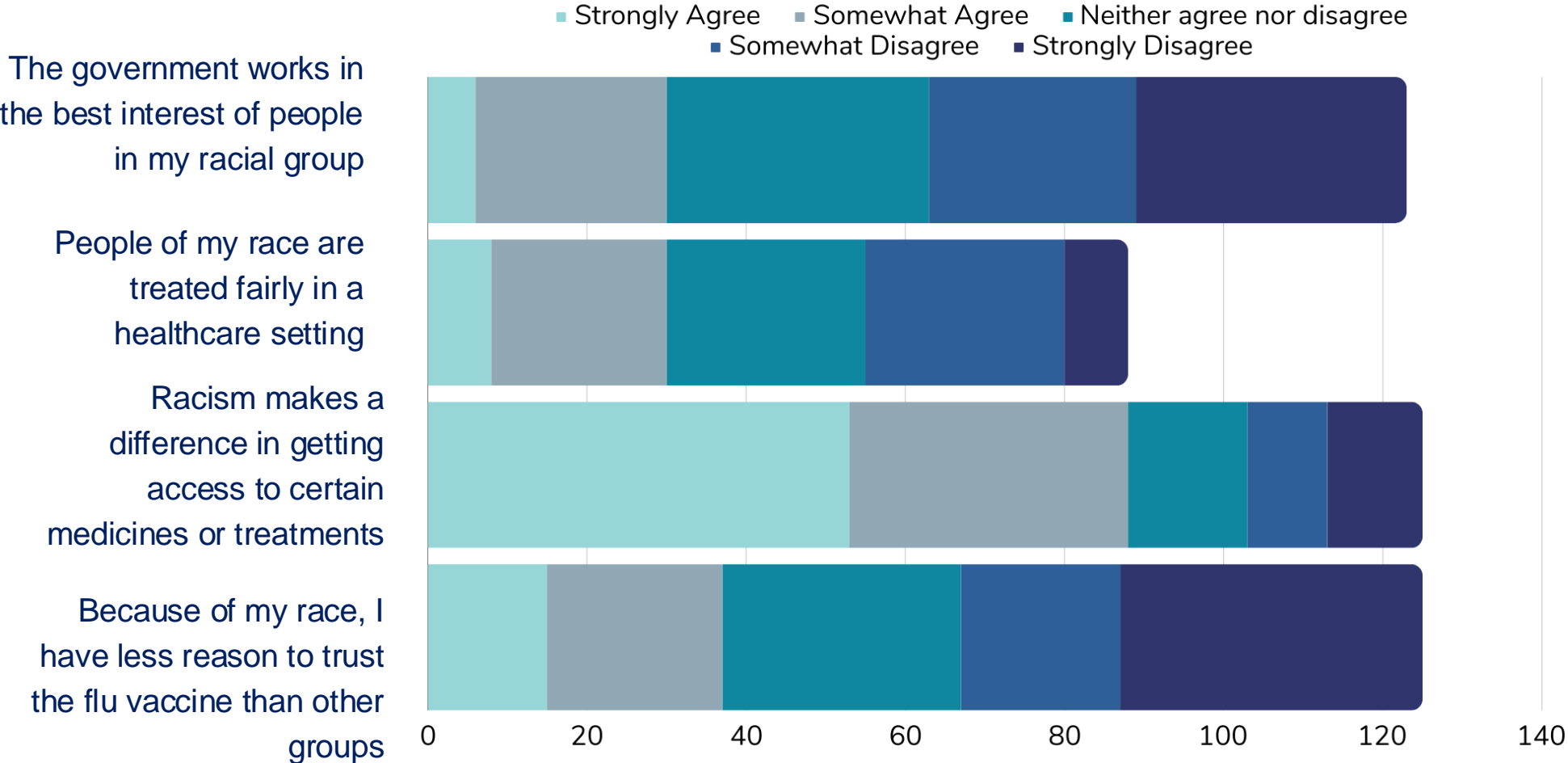
Regarding the 40 Influenza Vaccine Doses Administered:

- 100% of the doses were administered to individuals who reside in areas of high vulnerability
- 12 (30%) of the doses were administered to individuals 60 and older

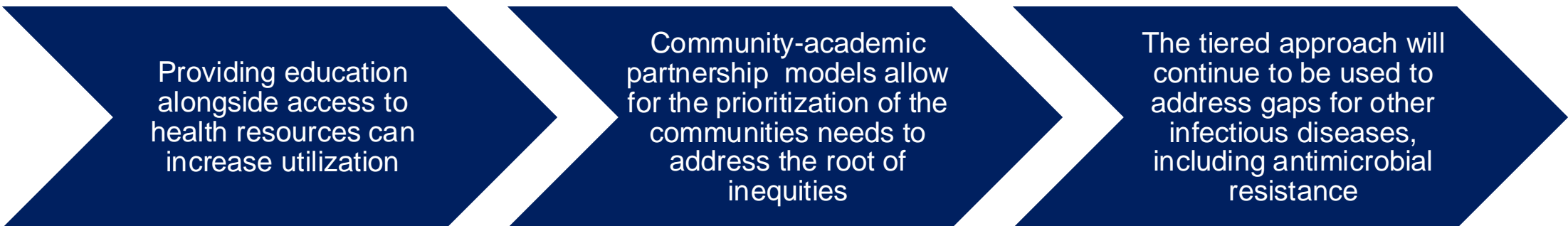
Regarding the 56 COVID-19 Vaccine Doses Administered:

- 100% of the doses were administered to individuals who reside in areas of high vulnerability
- 43 (77%) of the doses were given to individuals who reside in areas where less than 65% of the population are fully vaccinated
 - 16 (29%) of the doses were administered to individuals who reside in areas where less than 50% of the population is fully vaccinated

Preliminary Outcomes of Influenza Community-Engaged Intervention: Community Perceptions of Health Equity



Conclusion and Future Directions



Providing education
alongside access to
health resources can
increase utilization

Community-academic
partnership models allow
for the prioritization of the
communities needs to
address the root of
inequities

The tiered approach will
continue to be used to
address gaps for other
infectious diseases,
including antimicrobial
resistance

Promoting Health Equity is a TEAM Sport : Thank You to My Collaborators



Health Equity
Collaborative



Pictured (from left to right): Ms. Laniea King and Mr. Robert Gordon



Pictured from left to right: Drs. Caleb McLeod, Anna Zhou, Karen Tan, Victoria Grant; Loma Linda University ID Pharmacotherapy Fellowship



Pictured: Mr. Raheem Abdul-Mutakabbir

References

1. See Bailey, Diane, and Gina Solomon. "Pollution prevention at ports: clearing the air." *Environmental impact assessment review* 24.7-8 (2004): 749-774; Palaniappan, Meena. "Ditching diesel: Community-driven research reduces pollution in West Oakland." *Race, Poverty & the Environment* 11.2 (2004): 31-34
2. Wildberger, Sharon, and Amanda Northcross. "Latino Communities, Diesel Exhaust and Environmental Justice in the United States: A Systematic Review of the Literature." (2018).
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4. American Lung Association State of the Air 2022 <https://www.lung.org/research/sota/key-findings/mostpolluted-places>
5. California Office of Environmental Health Hazard Assessment <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>
6. Data from the Air Quality Management District's (AQMD) MATES V data visualization tool. https://experience.arcgis.com/experience/79d3b6304912414bb21ebdde80100b23?views=view_38
7. Abdul-Mutakabbir JC, Casey S, Jews V, King A, Simmons K, Hogue MD, Belliard JC, Peverini R, Veltman J. A three-tiered approach to address barriers to COVID-19 vaccine delivery in the Black community. *The Lancet Global Health*. 2021 Jun 1;9(6):e749-50.
8. Abdul-Mutakabbir JC, Granillo C, Peteet B, Dubov A, Montgomery SB, Hutchinson J, Casey S, Simmons K, Fajardo A, Belliard JC. Rapid implementation of a community-academic partnership model to promote COVID-19 vaccine equity within racially and ethnically minoritized communities. *Vaccines*. 2022 Aug 20;10(8):1364.

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