

Mask Up: Academic-Community-Government Partnerships to Advance Public Health During COVID-19

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Background

SEVERE ACUTE RESPIRATORY syndrome coronavirus 2 (SARS-CoV-2) has infected more than 23 million individuals globally through August 2020.¹ More than 5.7 million of those cases were in the United States with more than 175,000 deaths from coronavirus disease 2019 (COVID-19).¹

In Ohio, there have been more than 115,000 cases and 4000 deaths during the same time period. Similar to other states across the United States, there has been a preponderance of urban cases and significant socioeconomic and racial/ethnic disparities. For instance, Blacks represent 13% of the state population, but 23% of cases, 31% of hospitalizations, and 19% of deaths.² The largest city and county in Ohio, the city of Columbus and Franklin County, have the highest numbers of cases and deaths in the state.

The segments of our population made vulnerable because of challenging social and structural determinants and/or rapid changes related to the COVID-19 response will be, hereafter, referred to as “vulnerable populations.” In Ohio and across the United States, vulnerable populations have disproportionately higher rates of chronic diseases including hypertension, obesity, and diabetes, which are associated with increased COVID-19 hospitalizations.³ Social determinants of health also increase risk of SARS-CoV-2 infection among vulnerable populations. For instance, multigenerational housing and low-wage essential employment may make it difficult to social distance effectively.

Methods for preventing SARS-CoV-2 transmission are pivotal to mitigating the impact of COVID-19 in communities across Ohio and the United States. Successful reopening of schools and businesses is dependent on widespread use of evidenced-based prevention measures. A meta-analysis

demonstrated the effectiveness of face masks in reducing transmission of SARS-CoV-2.⁴ Modeling has shown that face mask use can decrease the average number of secondary cases per infectious case in a population made up of both susceptible and non-susceptible hosts to less than 1.⁵ Lastly, contemporaneous United States natural experiments show that states mandating face mask use in public is associated with a decline in the daily COVID-19 growth rate.⁶ Thus, strategies to promote face mask wearing, particularly in vulnerable communities, is critical for SARS-CoV-2 prevention during the active and recovery phases of the COVID-19 pandemic. One potential solution is the distribution of community care kits—including nonclinical isolation-grade masks, soaps, and hand sanitizers—in vulnerable communities paired with education media campaigns promoting face mask wearing, social distancing, and hand hygiene via academic-community-government partnerships (Figure 1).

Description of the Population and Tools to Assess Need Within the Population

Identification of the most vulnerable communities in Columbus and Franklin County, Ohio was essential to target the campaign and community care kit distribution to maximize impact and cost-effectiveness. Full details are available in the Supplementary Methods and Supplementary Fig S1.

Community Care Kit Donation and Assembly

The Ohio State University Wexner Medical Center (OSUWMC) has relationships with corporate, community, government, and civic partners that donated supplies for the community care kits. Each kit contained 5 nonclinical

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Academic-Community-Government Partnerships to Address COVID-19

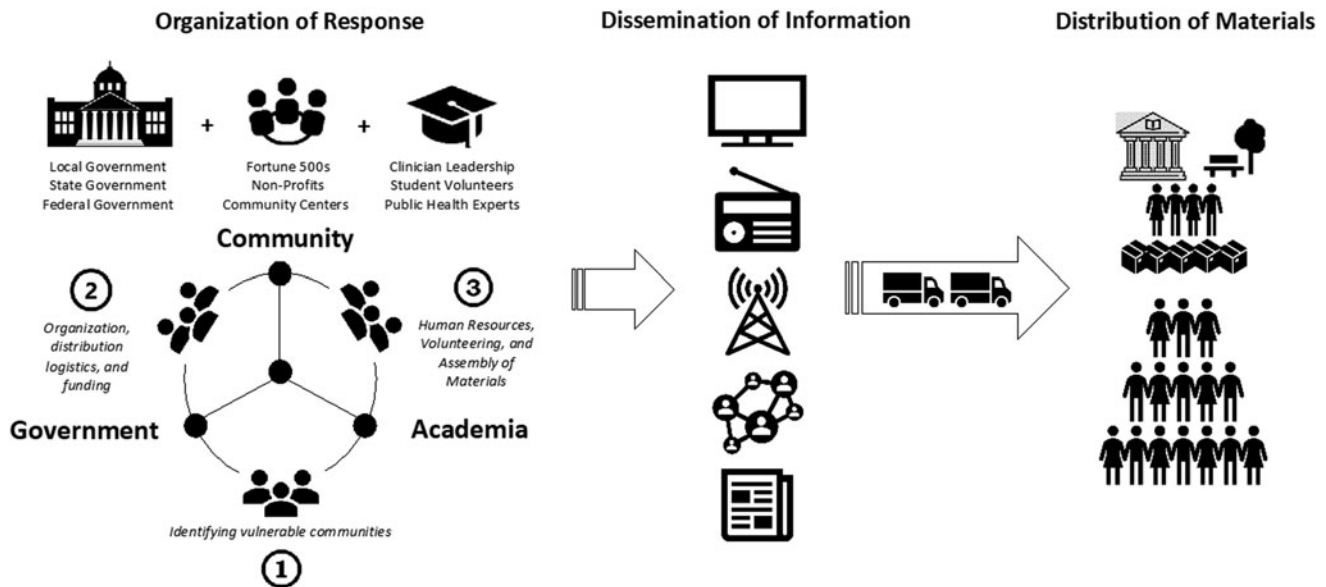


FIG. 1. Academic-community-government partnerships to address COVID-19. The figure synthesizes the role of academic-community-government partnerships to address the COVID-19 pandemic.

isolation-grade face masks, 5 paper bags to store the face masks, 2 hand sanitizers, 1–2 hand soap bottles, toothbrush, toothpaste, dental floss, and information on primary care access, handwashing, proper wearing of a face mask, and how to make cloth masks at home.

Community Care Kit Distribution Site Identification and Logistics

We identified 5 sites for community care kit distribution in the target zip codes: Columbus City Schools, a community center, a church, and a grocery store. The distribution sites were publicized through a marketing campaign that included radio, television, print, and social media. The Department of Family and Community Medicine mobilized their Community Care Coach to bring the supplies from OSUWMC to the community sites for distribution. The Columbus Division of Police partnered to provide logistical and traffic management.

Distribution sites were open for 5 hours per day over 5 days. Volunteers from OSUWMC and the National African American Male Wellness Initiative volunteered at the sites. Individuals could drive through or walk up to receive the kits. There was availability of in-person interpreters for Spanish and interpretation via phone on the Community Care Coach. Families with up to 5 individuals in the household received 1 kit and families with more than 5 individuals in the household received 2 kits. Individuals were asked 2 questions when picking up the kits: (1) What is your zip code? and (2) Has the household had access to face masks prior to the distribution?

Community Care Kit Distribution

Between May 11–May 15, 2020, 46,000 face masks, 10,000 soaps, 18,000 hand sanitizers, and 12,000 dental hygiene

items were distributed. There were 4726 recipients of face masks over the 5-day campaign and approximately 2800 other recipients who received face masks through additional donations to our community partners. The majority of community care kits were distributed to residents of the targeted zip codes as seen in Supplementary Fig 2a. Fifty-eight percent of individuals did not have access to a face mask prior to the distribution events (Supplementary Fig 2b), which ranged from as low as 29% to as high as 87% in the target zip codes.

During the distribution, local and national civic and government leaders joined in the distribution of community care kits. Through print, radio, television, and social media all of the leaders discussed the importance of face masks, handwashing, and social distancing to mitigate the impact of COVID-19 on communities in Columbus and Franklin County.

Academic-Community-Government Partnerships

Amid the COVID-19 pandemic, the adoption of evidence-based methods to reduce the risk of SARS-CoV-2 transmission (eg, use of face masks, hand hygiene) has been essential. We describe a novel community-based strategy that leveraged data analytics and meaningful academic-community-government partnerships to both identify populations most vulnerable to COVID-19 and distribute needed supplies within vulnerable communities. Our community care kit distribution campaign is a blueprint for addressing local public health crises.

The community care kit distribution approach requires leaders of diverse health care organizations willing to embrace the importance of community engagement in promoting public and population health. Although we recognize that one project will not singularly improve public health, it

can sow the seeds for other projects. The combined effects of multiple projects at different levels of the socioecological model (individual, interpersonal, organizational, community, and policy) targeting health behavior and health promotion are necessary to impact large public health issues, and academic-community-government partnerships have the potential to address many of those levels in mitigating the impact of COVID-19. In Ohio, on May 21, 2020, Governor Michael Dewine announced a plan to distribute thousands of “Community Wellness Kits” in more than 60 of Ohio’s 88 counties through a partnership with the Ohio Association of Community Health Centers and the Nationwide Foundation, expanding the reach of the initial program to the most economically depressed communities in the state, “to our citizens who are not getting the health care they need.”⁷

Academic-community-government partnerships are “The Columbus Way.” The Columbus Way is a unique collaboration between the businesses, government, nonprofit, and academic institutions that are cornerstones of the Columbus community.⁸ Columbus has used this approach before to tackle public health crises including cholera and typhoid fever; the COVID-19 pandemic is a modern day public health crisis that demands such novel approaches to mitigate risk in all communities.

Author Contribution Statement

Everyone who contributed significantly to the work are listed as authors on this manuscript. The authors had access to all the study data, take responsibility for the accuracy of the analysis, and had authority over manuscript preparation and the decision to submit the manuscript for publication.

Author Disclosure Statement

The authors declare that there are no conflicts of interest.

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Supplementary Material

Supplementary Methods
Supplementary Figure S1
Supplementary Figure S2

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