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Impact Evaluation of CDC Foundation-funded COVID-19 Projects

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Abstract

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Background: The CDC Foundation is a U.S. Congress-formed nonprofit to facilitate the work of the Center for Disease Control and Prevention (CDC). During global emergencies, it works in lockstep with the federal agency. COVID-19 greatly challenged healthcare systems, laboratories, and community communication. In early 2020, the CDC activated the incident management system (IMS), alerting the CDC Foundation's emergency response operations. To quickly address the public health demands from the pandemic, the CDC Foundation activated its Emergency Response Fund to support the CDC and external organization projects. From February 2020 to July 2022, the CDC Foundation partnered with external projects by providing grants and technical support.

Objective: We evaluated partnership outcomes and experience during the CDC Foundation-funded COVID-19 projects. We also documented the partnership operation and outputs, outcomes, impacts, and challenges to provide recommendations for future partnership experiences.

Methods: The data were from the impact evaluation survey by the grantee partners. The survey was comprised of 23 questions (eleven multiple choice and twelve short responses). Then a series of analyses of the responses through MAXQDA and Survey Monkey were conducted.

Results: Key themes of the partnership outcome included: positive partnership experience; opportunities of improvement; challenges prior to partnership; public health impact of partnership; and organizational outcomes.

Discussion: The COVID-19 pandemic heavily affected local communities. The CDC Foundation should continue to partner with local and community-based organizations for future responses. Large public health organizations should foster a culture of technical assistance and relationships with other organizations to assist in creating the best programmatic outcomes.

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ABBREVIATIONS

CDC	The Center for Disease Control and Prevention
CDC Foundation	The National Foundation for the Center for Disease Control and Prevention
PPE	Personal Protective Equipment
HHS	The Department of Health and Human Services
DEO	Division of Emergency Operations
CPR	Center for Preparedness and Response
EOC	Emergency Operations Center
IMS	Incident Management System
IM	Incident Manager
RCPU	Response, Crisis, Preparedness Unit at CDC Foundation
WHO	World Health Organization
SDOH	Social Determinants of Health
CBO	Community-based Organization

1. INTRODUCTION

The CDC Foundation activated its emergency response operations in January 2020 for the COVID – 19 pandemic. The activation allowed to fund nearly 400 projects to tackle the challenges of COVID-19. The challenges ranged from supplying personal protective equipment (PPE), providing equitable access to vaccines, and experiencing poor access to groceries and social isolation.

Assessing grantee partners' experience working with the CDC Foundation for the COVID-19 pandemic is necessary. Types of partnership vary by organization, amount of funding, and means to achieve the outcomes. Due to the varying partnership experience with the CDC Foundation, it is important to evaluate the different impacts of the partnership.

The purpose of this evaluation is to understand the impact of the CDC Foundation partnership during a public health emergency. This evaluation also summarizes outcomes by the funded projects. Through the COVID-19 tracker and grantee partners' survey responses, this research study provides evidence-based recommendations for public – private partnerships during emergency response.

2. BACKGROUND

Here's an overview of the role of the CDC Foundation and its relationship with the CDC during an emergency response.

The Centers for Disease Control and Prevention (CDC)

The CDC is a federal health protection agency operating under the U.S. Department of Health and Human Services (HHS)⁽¹⁾. The mission of the CDC is to work around the clock to protect America from health, safety, and security threats in the U.S. and abroad⁽²⁾. It ensures public health event response teams to address immediate and ongoing public health needs in affected areas.

The National Foundation for the Centers for Disease Control and Prevention (The CDC Foundation)

The CDC Foundation is an independent, non-profit organization. It is the sole entity created by Congress in 1995 to mobilize philanthropic and private - sector resources. The CDC Foundation's motto is 'together our impact is greater'; it does so by unleashing the power of collaboration. The CDC Foundation catalyzes collaborations between CDC, philanthropies, private entities, and individuals to accomplish public health needs. Since 1995, the CDC Foundation has launched approximately 1,200 programs in 165 countries and invested over \$1.6 billion in lifesaving programs.

- **Mission:** The CDC Foundation helps CDC do more, faster by forging partnerships between CDC and others to fight threats to health and safety
- **Vision:** Save and improve lives by unleashing the power of collaboration

- **Core Pillars of Work:** (a) Safeguarding American's health; (b) Fighting global threats; (c) Responding to emergencies; (d) Developing disease fighters; and (e) Giving to specific funds or causes⁽³⁾.

The CDC Foundation: Emergency Response Fund

The goal of the CDC Foundation is to help the CDC do more, faster. While CDC receives support from Congress, it can take time for the agency to receive federal appropriations and mobilize the necessary resources to act. The CDC Foundation provides CDC with resources to deal with immediate needs during national or international public health emergencies.

The CDC Foundation established its Emergency Response Fund in 2001 after the 9/11 terrorist attacks and anthrax attacks. In 2004, the Emergency Response Fund expanded to cover international efforts. Since its inception, the CDC Foundation worked on various historical emergencies in the U.S. and internationally (Table 1). The Emergency Response Fund may provide support for areas such as:

- Short-term or surge staffing needs;
- Procurement of goods and/or services, such as supplies, contractors, technology, etc.;
- Support for health risk communication;
- Travel support for CDC or other staff;
- Infrastructure needs, including repair or rebuilding of physical structures; and
- Other identified needs.

The CDC Foundation: Response, Crisis, Preparedness Unit

Before the establishment of the Response, Crisis, Preparedness Unit (RCPU), the CDC Foundation had two emergency response funds: a Global Disaster Response Fund and a U.S. Emergency Response Fund. These funds were merged for a unified approach to crisis and led to the creation of the RCPU. The unit's goal is to implement agile action through resource mobilization, community partnership, and specialized project implementation⁽⁴⁾.

COVID-19 in Social and Community Context

Social determinants of health (SDOH) acknowledge that every person is born into environmental conditions that affect a wide range of health, functioning, and quality of life outcomes and risks. The HHS groups SDOH into five domains: economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context⁽⁵⁾. The CDC Foundation used these categories to assist grantees in identifying project goals. Each grantee project was categorized based on the core SDOH challenge that the project addressed (Table 2).

COVID – 19, like many other public health threats, has disproportionately impacted people based on race, ethnicity, economic stability, immigration status, and access to health and well-being services. In community and social context, COVID-19 had an impact on people's access to nutritious food, stable jobs and income, and accurate scientific guidelines to mitigate risks and spread. This public health threat introduced mental burdens from social isolation, sudden shift in daily lives, and constant unknowns for future. Overall, COVID-19 struck communities and transformed them short- and long-term.

Background of Grantee Partners' COVID-19 related Projects

As of July 2022, the CDC Foundation has funded over 380 COVID-19 related projects. The CDC Foundation identified seven core public health needs of COVID-19 and paired each project with each need: local response efforts, health equity, global response, communication needs, laboratory capacity and research, data and technology, and frontline workers. Table 3 shows the distribution of CDC Foundation-funded projects based on those needs. Of the 380 projects, addressing health equity assumed the highest percentage (51%) and addressing local response efforts was second (23%).

The CDC Foundation partnered with over ten different types of organizations. Among the 380 grantee projects, community-based organizations (CBOs) were the highest percentage (43%). It was important for the CDC Foundation to work with the CBOs, as such collaborations targeted health equity. 74% of CBOs worked towards approaching health equity while the other quarter worked on local response efforts (Table 3). Health equity – related projects commonly served impacted populations with goals for accessible and equitable service delivery. Local response efforts included providing supplies and addressing social isolation from COVID-19. The majority of the CDC Foundation – funded projects served the U.S. (65%) while 10% served international communities.

3. LITERATURE REVIEW

The literature review looked at the importance of public health collaboration and its different forms. It also reviewed public health collaboration for infectious diseases

and past emergency responses. Then, it specifically explored literatures of COVID – 19 – related collaborative operations not associated with the CDC Foundation to show areas of partnership that this pandemic required. This section ultimately explored the purpose of partnership impact evaluation and the need for this research study. Total X number of literature represented this section. Grey literature such as reports and public information from global public health agency websites displayed different forms of partnership and evaluation framework.

Public Health Collaboration

Collaboration is indispensable in public health. Health is engaged in every facet of life which is why public health involves collaboration of all forms including government, non – governmental, private, community – based, academic, and research organizations. Furthermore, successful community health promotion involves multiple stakeholders and experts including the populations affected. Therefore, strong partnership is in the interest of several global public health agencies like the WHO and the CDC. The WHO's Sustainable Development Goals by 2030 is solely possible through multi-sectoral collaboration⁽⁶⁾. The CDC also engages with impacted communities through field work, funding, research, and health communication⁽⁷⁾. Successful public health work cannot be done by the government or inter – governmental organizations alone⁽⁸⁾.

Six literatures explored different forms of multisectoral collaboration. All six, emphasized the importance of multisectoral collaboration for better public health effectiveness and outcomes. Historically, eradication of diseases such as polio and

measles were a result of successful public-private sectors collaboration⁽⁹⁾. Likewise, recent infectious disease outbreaks such as Zika and Ebola vaccine developments demonstrated the need for international partnerships⁽⁹⁾. Franklin White explored prospects for universal and integrated health systems from the global perspective⁽¹⁰⁾. In so doing, his literature recognized the importance of ethical private sectors in partnership with a public sector for reducing global environmental health threats and promoting health of employees⁽¹⁰⁾. A study surveyed 579 U.S. local health departments and concluded academics' important role in providing evidence-based health programs and policies⁽¹¹⁾. A systematic review of challenges on collaboration between government and nongovernmental organizations (NGO) concluded that effective NGO – government collaboration in health can assist in health systems development⁽¹²⁾. Furthermore, interagency collaboration was effective in promoting health literacy for community-based health promotion in the United Kingdom⁽¹³⁾. Finally, a community member can often play an important mediating role in public – private partnerships worldwide⁽¹⁴⁾. These six literatures provided separate examples of partnership, yet all claimed the importance of collaboration among different types of organizations for global public health advancement.

Collaboration during Infectious Disease Outbreaks and Emergency Response

Outbreaks of viral diseases are regular occurrences but the severity of outcomes vary. The 21st century endured several outbreaks like coronaviruses – severe acute respiratory syndrome coronavirus (SARS – CoV), Middle East respiratory syndrome coronavirus (MERS CoV) and the most recent novel coronavirus (COVID-19). Other

viral disease outbreaks included Zika and Ebola. There were also novel influenzas such as avian and swine flu that originated from various parts of the world and caused global burdens in all sectors. This section focused on different multisectoral collaborations during outbreaks and emergency response before COVID-19.

Epidemic cases of SARS occurred in Hong Kong in 2003. The primary mode of transmission was direct contact with infectious respiratory droplets⁽¹⁵⁾. One case of SARS infection caused a chain of outbreak in a hotel in Hong Kong⁽¹⁶⁾. The Metropole Hotel exemplified the potential international spread of infectious diseases. The index cases in Hong Kong, Toronto, Singapore, and Hanoi were all associated with the hotel.

After the outbreak in Hong Kong, the health authority established guidelines for hotels in preventing SARS and infection control and prevention. Since then, the government organizes regular infection control seminars for the hotel industry. The application of appropriate measures likely reduced the number of infected people for subsequent infection outbreaks. The literature claimed that hotels could provide an additional line of defense beyond entry border screening⁽¹⁶⁾. This collaboration between the hotel industry and the public health entity prevented disease outbreaks and posed greater control.

A use of public-private partnership in malaria elimination showed the importance of public health collaboration to eliminate infectious disease. A partnership between the public sector, Anti Malaria Campaign (AMC) and the private sector Tropical and Environmental Diseases and Health Associates (TEDHA) in Sri Lanka demonstrated how to eliminate malaria effectively. TEDHA established 50 malaria diagnostic laboratories and 17 surveillance sentinel sites aligned with the AMC's consultations.

These sites were in areas that government officials had difficulty accessing. The surveillance system and the involvement of the private sector to the existing public program brought success to the elimination program⁽¹⁷⁾.

The case examples of Hong Kong and Sri Lanka showed multi-sectoral collaborations for infectious disease control and prevention. These considered the local resources and strengths and work with the public sector allowed for better outcome.

Collaboration during COVID – 19

The COVID-19 pandemic posed various public health challenges and multisectoral collaboration helped address them effectively. As discussed in the social and community context in the background section, the COVID-19 struck communities short – and long – term. These challenges involved both clinical and community knowledge that literature explored the public health partnerships in these areas.

Some challenges include testing, vaccine development, vaccine attitudes, outbreak management and more. The following literature are examples of public health partnership during the COVID-19 pandemic around the world.

Lab and diagnostic testing, test kit and vaccine development were recognized public health needs to tackle COVID-19 at the onset of the outbreaks. It was essential that the clinical laboratories, public health agencies and industry needed to partner to control the outbreak⁽¹⁸⁾. During the early stages of an outbreak, the national (i.e. CDC) or international (i.e. WHO) agencies have the capability to develop diagnostic tests quickly⁽¹⁸⁾. They are involved with case investigations, take part in characterizing the

disease, and have access to clinical samples from cases. Then the test manufacturer and the Food and Drug Administration (FDA) can partner with mass production and performance check. After the cooperation with these agencies, then local and national clinical laboratories can receive the tools. The COVID-19 outbreak highlighted the needs for a robust and sustainable system for development, dissemination, and implementation of diagnostic tests for targeted infectious disease of concern⁽¹⁸⁾.

In addition to the public and clinical agencies, the private sectors got involved with test kit development. Biotech firms in South Korea received fast-tracking approval and were able to develop test kits. This approval took about a month since the case was introduced to the country. The Centers for Disease Control and Prevention in Korea constantly shared the samples with the firms to improve the accuracy of the test kits. This early development allowed the country to be prepared for the massive outbreak in Daegu and were able to test more than 600,000 people by May of 2020. The coordination between the public and private sectors and the public's interest were able to engender such public health preventive measures.

Another unique situation of COVID-19 was the development of vaccines. Challenges surrounding the vaccine included debunking myths, proving its safety and efficacy, and equitable dissemination. The so-called "Operation Warp Speed (OWS)" COVID – 19 vaccine development" is another example of public – private partnership for an infectious disease outbreak⁽¹⁹⁾. It was important for public health agencies that not only to reduce the health impact of COVID – 19, but also to be able to return to normalcy⁽²⁰⁾. It was anticipated that vaccines would enable resumption of social and

economic normalcy. The goal of OWS was to produce and deliver 300 million doses of safe and effective vaccines by January 2021⁽¹⁹⁾. The vaccine development and manufacturing occurred at a historically unprecedented pace. This was accounted for the incredible amount of information and resources to address COVID – 19 together.

Purpose of Impact Evaluation of Public Health Collaborations

Above examples illustrate the importance of collaboration in public health. In doing so, evaluation of public health programs is crucial⁽²¹⁾. While the examples above were projects with clear objectives and indicators of success, many programmatic partnerships require greater monitoring and evaluation tool for successful partnership⁽²²⁾. Measuring impact is important for future public health implications and lessons learned for philanthropic nonprofit or public sectors.

Significance of this research study

Therefore, impact evaluation of the CDC Foundation's partnership with grantee COVID – 19 projects is necessary. As a Congress – formed entity, the CDC Foundation holds a unique role in providing resources and innovative projects to enhance public health. As collaboration is inevitably important in public health, understanding the impact of CDC Foundation on the partnering organizations can bring greater understanding of how the CDC Foundation can make an impact in people's lives.

4. METHODS

The impact evaluation survey was distributed via the SurveyMonkey platform in the spring of 2022. The survey consisted of 23 multiple choice and short response questions. The questions were divided into five sections:

- 1) Basic Information on the description of the organization
- 2) Demographic that the projects/programs served
- 3) Background of Partnership and Partnership Experience
- 4) Impact of Partnership
- 5) Overall Experience and Feedback

The diction of the questions was carefully decided after peer review among four members of the RCPU's Impact and Evaluation team. The review was final after the confirmation from the Associate Vice President for Emergency Response and twelve RCPU program leads who have worked closely with the grantee partners. Respondents were required to answer all 23 questions.

The CDC Foundation's partnership on COVID-19 related projects began as early as February 7th, 2020. The number expanded to nearly 350 projects at the time of survey dissemination. For this impact evaluation, 285 partners received the survey via email. Reasons for exclusion from receiving were (1) the partnering project was too early in the partnership, (2) the CDC Foundation functioned as a solely fiscal agent for partner, and (3) the project had been completed and there was no longer a viable point of contact. Once the study population was finalized, each partner received an email with an individualized link to the survey; each received a trackable link to facilitate follow up for their responses. The recipients could also choose to self-identify at the end of the

survey. Partners who did not respond to the survey within the first two weeks received a reminder via email. Within four weeks, 159 project partners responded and generated the response rate of 55.78%. This rate is above the benchmark for a survey response rate as the average is 30%⁽²³⁾. From there, 127 grantee partners completed the survey, giving the completion rate of 44.56%.

Analysis

This research used mixed-methods analysis with MAXQDA and default feature of SurveyMonkey. The categorical analysis was done through the “analyze results” feature on SurveyMonkey. This produced statistical value of how many partners selected each answer choice.

The total number of submissions was 159 submissions while only 127 completed. Though the reasons are not conclusive, 32 were incomplete due to a feature of the SurveyMonkey platform, which was that when the respondent exited the browser, a submission was recorded even though it was incomplete. There could number of factors for exiting the browser such as poor internet connection or loss of interest by the survey participant. This explains the gap between the response and completion rates.

The twelve short response questions allowed for opportunities to express details of their responses and stories. These responses were cleaned and analyzed through a qualitative data analysis software, MAXQDA, to code transcript line by line. Based on the initial review of all the responses, we identified six themes with relevant subcodes (Table 4). The themes and subcodes reflected the purpose of the impact evaluation: to understand the partnership experience with the CDC Foundation, the impact of partnership, and the areas of improvement.

The CDC Foundation values operational and programmatic aspects of the partnering organization in emergency response. Support in these aspects are imperative components for any organization that is combatting a public health emergency. In Table 4, subcodes like reports and structure, funding, staffing, and organizational impact reflect operational support and outcome. Subcodes such as technical programmatic support, funding, emergency response, community impact, program sustainability and impossible outcomes embody programmatic support. Finally, some added value of partnership includes interpersonal experience with the CDC Foundation staff and networking opportunities. The boundaries between these themes and subcodes are not firm and some responses were coded into more than one.

Impact Evaluation

The RCPU's partnering organizations receive a logic model framework (see Appendix) to share the elements of the proposed projects before the collaboration begins. A logic model is a recommended tool for public health program management. Typical components of the model are as follows⁽²⁴⁾:

- **Input:** The resources needed to implement the activities
- **Activities:** What the program and its staff do with those resources
- **Outputs:** Tangible products, capacities, or deliverables that result from the activities
- **Outcomes:** Changes that occur in the other people or conditions because of the activities and outputs
- **Impacts:** The most distal/long-term outcomes

For RCPU’s partnerships, this tool provides guidance for partners implementing emergency response programs and helps with the project planning process. This tool also helps establish any assumptions about objectives and means of verification for metrics that will be collected.

Following the sequence of the logic model for this impact evaluation easily organizes and helps dissect the partners’ responses. This section follows a typical order of a logic model as shown above. It describes the work and contribution of the CDC Foundation for each step of the program collaboration based on the partners’ survey responses.

Input	Outputs	Outcomes	Impacts
<ul style="list-style-type: none"> • Technical support • Funding 	<ul style="list-style-type: none"> • Community Resource provision • Clinical Tools • Staffing • Vaccine 	<ul style="list-style-type: none"> • Staffing • Vaccine • Overall outcome 	<ul style="list-style-type: none"> • Public health • Organizational • Community • Health equity

The ‘activities’ component pertains to the actions of the partner that took place to produce deliverables and project outputs. Since the main purpose of the evaluation is to understand the impact of the CDC Foundation’s partnership, this evaluation does not explore the grantee partners’ internal strategies and operations. Nonetheless, the quotations throughout the impact evaluation section touch upon the specific work of the partners.

5. RESULTS

Overview

The results can be divided into two sections:

- 1) The descriptive background about the partnering organizations and the grant-funded projects
- 2) Qualitative findings through the narratives or stories in the short responses

As this evaluation involves a mixed-methods analysis, the two sections help understand the characteristics of the respondents' organizations and the background and outcomes of their projects.

The qualitative responses expand the quantitative results and help grasp the impact of the partnership in detail. Also, the short responses provide context to each quantitative category. For instance, the quantitative section discusses the frequency and percentages of the populations served. Then, grantee partners narrate ways they used the grant to serve their populations and communities. Together with the categorical statistics and the grantee partners' report on their funded projects, we can better grasp the scale of partnership impact.

1. Description of Partnering Organizations (Descriptive Statistics)

The description and background of the partners illustrate the project overview and the grantee's organizational circumstances. Of the eleven multiple choice questions, eight provide relevant background information about the partners and their projects. Also, a parent code on challenges prior to the partnership (Table 4 and Figure

1) portrays what the partners needed before the collaboration. The descriptive statistics of the partnering organizations will be explained in these four categories:

- 1) Types of organizations and industries of partners
- 2) Demographic that the CDC Foundation-funded project served
- 3) Motivating factors of partnership
- 4) Challenges faced prior to partnership

1.1 Types of Organizations and Industries

The RCPU COVID-19 team partnered with a variety of organizations: non-profit, health departments, private, CBO, universities, laboratories, institutes, and educational organizations. Among the 127 respondents, nearly 60% were non-profit and 12.6% were community-based organizations, followed by the third largest category of academic institutes. While the CBOs took the highest percentage among the 380 projects, respondent may have selected non-profit due to the interchangeability of the two.

In terms of the industry sector, there were varying levels of public health expertise and technical knowledge. The diversity of industries demonstrates that the grantee projects addressed not only the medical and clinical challenges of COVID-19, but also the social, educational, and civic demands of pandemic relief. Nonetheless, health industry still assumed the highest percentage, with nearly 50% of the partnered organizations described to be in the public health sector. The second highest, nearly 30% of partnered organizations, described to be in the social work and social assistance industry (Table 5).

1.2 Demographic of the CDC Foundation-funded Project

The CDC Foundation-funded projects served a wide array of populations based on racial, ethnic, age groups, and other social indicators of populations. The Table 6 display the disproportionately impacted populations that the funded project directly or indirectly served.

The demographic reflects the social and cultural context of the COVID-19 pandemic. This pandemic highlighted all aspects of social determinants of health and structural barriers of health and wellness. For instance, communities with higher percentages of Black or Hispanic residents had more deaths from coronavirus in the U.S.⁽²⁵⁾ Also, those with more challenging economic and housing circumstances faced a greater risk of not surviving the virus⁽²⁶⁾. Accordingly, the demand to serve these populations was high and partners saw the dire need of addressing this pandemic challenges. Hispanic and Black Americans were included as population of focus for 85 and 90 partners, respectively. And, 58% of partners served people of lower socioeconomic status.

1.3 Motivating factors of Partnership

The motivating factor of partnership help understand the partners' needs prior to receiving grants. Among the 127 partners surveyed, 116 partners (90%) noted the meeting the community's needs motivated to partner. Communities faced differing needs from the pandemic as it affected people physically, socially, and financially (Table 7). The next highest reason to partner was the mission and goal alignment with the CDC Foundation (68.5%).

Partnering organizations had multiple avenues to hear about the partnership opportunity with the CDC Foundation. Over 50% of the partners shared they received direct outreach from the CDC Foundation. Notably, most of these were CBOs. The CDC Foundation holds a master list of CBOs including previous funding applicants and connections through previous and active emergency response projects. Furthermore, RCPU program managers discovered groups through search engine, social media, and news articles for evidence of COVID-19 related work.

1.4 Challenges faced prior to the partnership with the CDC Foundation

Challenges prior to partnership also provide context of the outcomes that are discussed later and whether partnership resolved these challenges. The purpose of the working with the CDC Foundation is more than generating products and numbers. Mitigating internal and external challenges should be measured as indicators of success.

There were four categories of challenges prior to partnership: operational, population/public health level, funding, and staffing. Table 4 and 8 display the definitions and examples of these categories.

2. Impact Evaluation through the Short Responses

From here on are the findings from the short responses. After explaining the areas of improvement of partnership, it navigates through the input and outcomes of partnership following the order of a logic model.

2.1 Limits of Partnership

As with any collaborative project, there were areas for improvement in the partnership. Partners shared their feedback to the questions 12 and 22 (Appendix)

- Question 12: Based on your experience, please share any feedback on how the CDC Foundation can improve its programmatic partnership with organizations.
- Question 22: What areas of working with the CDC Foundation can be improved?

Based on partners' responses, key themes of opportunities for improvement were (1) the timeline, reporting requirements, and structure; (2) technical programmatic support; (3) and funding.

2.1a Timeline, Reporting Requirements, and Structure

Partners openly shared areas they faced challenges in working with the CDC Foundation. Since many partners were smaller, community-based organizations, twenty-three partners reported structural challenges with the timeline reporting requirements and structure of the partnership.

Due to structure and timelines to meet external donors' requirements, the partnership posed different deadlines for budget proposal, logic model, and clearance for deliverables. Not all partners were aware of the partnership opportunity from its

opening, and some knew about the grant opportunity closer to the deadline. And a small number of partners shared it was not always feasible to meet the structure of the partnership given their limited internal capacity.

The RCPU utilizes the logic model framework (Appendix 2) to help with project planning. Some partners shared that the logic model was complex for the scale of the project or the organization. Other feedback included incorporating the logic model more during meetings as a guide towards project's deliverables. Lastly, partners shared challenges in the language and the legal jargon in application and reports.

2.1b Technical Programmatic Support

Thirty-one partners shared how programmatic support can be improved within the CDC Foundation. Partners wished to be more aware of similar grantee projects and other opportunities to continue working with the CDC Foundation. A few partners shared ways the CDC Foundation can provide more technical assistance, capacity building, support for the design and implementation of projects.

2.1c Funding

Sixteen partners shared that increased funding was desired from the CDC Foundation. This included suggestions to increase funding and funding opportunities for partners.

While these are opportunities for improvement, the next section discusses support and impact that partners experienced.

2.2 Partnership Evaluation: Input

Inputs reflect the areas of support that led to outputs, outcomes, and impacts. These partnership inputs are resources, funding, and information necessary to meet project goals. No project had the same project goal as the other; therefore, each received different kinds of support. With that said, the two biggest areas of support were technical programmatic support and funding.

2.2a Technical Programmatic Support

The partnership provided technical support by providing resources, scientific information, and networking opportunities that enhanced project execution. The CDC Foundation updated partners on the latest public health guidelines and COVID-19 facts. Its connection with various entities also allowed for the active dissemination of correct information. This particularly bridged the message of the CDC to its intended audience. These connections also facilitated networking opportunities among the partners.

Partners had varying barriers to the needed information. Several partners noted that the CDC Foundation provided public health information from local and federal agencies and data on the target population. These are the direct quotes about receiving information:

- *“CDC Foundation been continuously supporting us with information and resources to share with people. But also, with regular communications in response to specific needs we might have. **CDC Foundation has provided us the most current information from federal offices with relation to***

the COVID pandemic that have been useful for us in developing communication tools in Spanish and directed to the people we work with.”

- *“[CDC Foundation] provided additional resources to engage with hard-to-reach populations around vaccine hesitancy.”*

Other forms of support included networking opportunities for partners among organizations with similar goals and target populations:

- *“The technical guidance has provided partnering opportunities to plan vaccine events in hard-to-reach vaccine-resistant communities.”*
- *“Our CDC Foundation contacts worked hard to reach and network with a very diverse group of organizations and communities.”*

Many organizations reflected that support on application and reporting documents was helpful. The mode of support included weekly or monthly phone or video calls, Zoom meetings, and emails. The extent and frequency of communication, type of resources, and technical support all catered to each organization needs to execute its project goals and deliverables. Many described this process of receiving technical support with positive adjectives such as “supported, encouraged, helpful, exceptional, tremendous, not lacking support.”

The CDC Foundation’s role as a bridge among partners assisted in actively delivering important public health information and fostering networking opportunities among organizations.

2.2b Funding

Grants and funding opportunities reflect one of the core aspects of the CDC Foundation. As an independent nonprofit public health agency, the CDC Foundation can quickly disperse funding, federal and private, to external organizations. As shown in Table 4 and Figure 1, a lack of funding was a common challenge for organizations prior to partnership with the CDC Foundation:

- *“It would have been very unlikely that we could have found public health funding for the project within a reasonable timeframe, so **the CDC Foundation’s ability to move quickly was essential to capturing the evolving nature of the COVID-19 pandemic.**”*
- *“[The grant] provided critically needed resources and funding for our organization to be able to take on a leadership role in supporting public health communications capacity for the public health workforce which has been greatly needed in the COVID-19 pandemic.”*

The grants played an indispensable role in attaining incredible outputs, outcomes, and impacts of partnership projects.

2.3 Output

Outputs are the direct, tangible results of inputs such as numbers of populations vaccinated, and health care professionals trained. The short-term outputs aggregate to form project outcomes.

2.3a Resource Provision to Community Members

The grants combined with the technical programmatic support led to products, capital goods, and services. Due to the nature of COVID-19 and the unprecedented challenge that it brought, resources that became of service to the community members and addressing the needs were the most notable output as many people sought to face necessities such as housing and education. Below are examples of outputs described by partners from CDC Foundation funding and programmatic support:

- *“Funding was used by 9 community-based organizations that supported rent, utility, food, and other basic needs for families they serve.”*
- *“With the grant, we were able to engage in meaningful work and provide education and resources for many individuals as well as gathered valuable lessons about what works and what does not in the beginning of an emergency with so many unknowns as well as during a surge when resources and people are stretched thin.”*

The outputs also include creating or providing resources to execute an outcome and make an impact. For instance, a partner shared:

- *“[The program] encouraged our 26 alliance members to provide COVID-related resources to the community they serve”*

Other type of product from the input include improvement in technology in the organization.

- *“Because of CDC Foundation's support, the Health Department was able to make enhancements to the SaTScan and TreeScan software systems.”*

Overall, these direct outputs of resources mitigated the burden of lacking necessities during the pandemic and improved existing technology systems. These outputs consequently led communities to face long-term benefits from the grantee programs.

2.3b Testing Resources, Toolkits, Personal Protective Equipment (PPE)

Testing resources, toolkits, and PPE were necessary products to address the challenges of the pandemic. Diagnostic testing for COVID-19 was high in demand, particularly before vaccines were widely available. Testing services, efficacy, and effectiveness of the testing methods, as well as scaling up the diagnostic capacity were all mentioned by partners:

- *"The funded project helped understand what acceptable specimens for diagnostic testing for [COVID-19] are and whether self-collection is equivalent to collection by health care personnel"*
- ***"We appreciated all the support at the beginning of the pandemic to help us launch our community response prior to federal funds being available. It enabled us to quickly launch mass testing and support our employees and other front-line workers!"***

PPE and healthcare supplies are essential for protection of healthcare workers and patients. Early in the COVID response, there was a nationwide PPE shortage when frontline workers needed the most protection. Many CDC Foundation grants supported PPE, healthcare supplies, cleaning and sanitization supplies, professional cleaning services, as well as additional staffing resources.

- *“We leveraged the CDC Foundation’s grant to support our efforts to provide PPE and other critical medical supplies to disadvantaged and at-risk populations in urban centers.”*

2.3c Vaccine

Fifty partners (40%) mentioned a vaccine related product of the partnership. A notable vaccine related output is creating and sustaining vaccine clinics. Many programs also targeted hard-to-reach or vaccine hesitant communities. The funding supplied financial incentives for people to get vaccinated for those of lower socioeconomic status, working adults and families. Other measures to bridge and reach to communities included utilizing human resources, social media, and different platforms for advertisements.

- *“For each vaccination, the farmworker or family member received a \$30 gift card that could be used for gas or for the limited food and drink in the convenience store.”*
- *“Provided funds also allowed [us] to launch aggressive media campaigns about “masking” and vaccine participation. These vaccine participation ads were carried on TV, radio, social media, outdoor billboards, and print media. The cohesive artwork positively linked [us] with community activism at a most crucial time.”*

The funding also mitigated any barriers to misinformation through translation services to racial minorities, immigrant, and refugee populations. Vaccine administration to the public was a great quantifiable output as well.

- *“This support allowed us to be present at multiple equity clinics over the course of the year, culminating in just under 25,000 vaccines administered.”*
- *“We were able to get over 14,000 vaccines in Latino’s arms in Georgia!”*
- *“More than 200 workers [that had no prior access to vaccination] were vaccinated”*
- *“Vaccinating more than 1,500 individuals, testing over 600 people for COVID”*
- *“In Philadelphia, almost 90% of the population has received at least one dose of the vaccine and nearly 70% has received 2 doses; this was a joint effort across sectors and [organization name] played its role due to these resources from the CDC Foundation.”*

2.3d Staffing

Building a public health workforce is needed for the sustainability and success of public health programming. Outputs related to staffing include keeping, hiring, training, and compensating employees. During the height of the pandemic, hiring and training of professional nurses and healthcare staff was necessary. Furthermore, the demand for community health workers was frequently mentioned in the survey.

- *“Without the funding the [organization name] would not have been able to keep the critical departments working”*

One partner shared that the funding from the CDC Foundation enabled an organization to shorten the hiring process, allowing more time to be spent on training and planning.

- *“Funding from this grant also helped up increase staffing to accommodate the increased demand for help with grocery shopping and securing basic household necessities.”*

Another organization was able to accommodate the increase demand of meal delivery service and grocery shopping.

- *“We were able to use funding for travel time and expense to have our staff go out to the labor camps every week, instead of every other week, during the 5-month harvest season. We had nurses with us with information and vaccinations.”*

The ability to supply and compensate staff during emergency response not only elevates public health efforts but also mitigates the economic hardship of organizations and employees.

2.4 Outcomes

Outcomes reflect project accomplishments over time that contribute to population level changes, which eventually aggregates and delivers project goals and larger impacts.

2.4a Staffing Outcome

The biggest staffing outcome from the CDC Foundation grant is that organizations were able to decrease turnover or laying off staff due to the economic downturn. Ability to maintain and supply staff led to a ripple impact on public health, operations, households, and individuals.

- ***“Providing and maintaining hazard pay stipends has enabled the agency to decrease staff turnover during one of the hardest periods [...] in our agency’s history.”***

Staffing of healthcare professionals and frontline workers were particularly indispensable for health service delivery and public health safety.

- ***“Staffing up for the COVID response at critical junctures, especially with professional staff like nurses and epidemiologists, who were in short supply nationwide.”***

Community health workers were essential human resources for communities. These workers responded to community needs for health education and COVID-19 prevention services. Through grants and hiring, organizations were able to intervene in communities and meet the demands of their populations.

- *“We were able to increase the workforce needed to respond to the community need for education on COVID-19 [...]. We were able to increase number of staff and add shifts during hours that the community was requesting (evenings, weekends), and we were also able to build the capacity of newer staff in our promotor-driven model of engagement.”*

Furthermore, amplifying staff helped dodge burn outs among the existing staff.

- *“Our staff would have been more burned out, we would not have been as aware of the tools and messaging available, we would not have had access to some supplies.”*

The compounding effect of staffing is shown through financial outcomes and various health impact such as improved community wellbeing and mental health.

2.4b Vaccine Program Outcome

COVID-19 is a respiratory infectious disease and makes every population susceptible to contracting the virus. Thus, vaccine equity and immunizing communities was a public health safety measure. The number of administered vaccines and immunized people are results from efforts of addressing vaccine hesitancy and increasing accessibility through clinics. The investment in clinics and education on vaccine awareness and acceptance can be utilized beyond this pandemic.

- *“[The funding] allowed us to increase COVID-19 vaccine awareness and vaccine acceptance in our community.”*
- *“Reaching hard to reach, vaccine hesitant communities and offering weekly vaccine clinics at our office location would have been impossible without the support.”*
- *“This support allowed our team to maximize reach with communities who experienced barriers to accessing accurate information about the vaccine and to obtain the vaccine. **It allowed our team to contact community members several times - we learned it takes 3-5 touches to convince someone on the fence to get the vaccine - and to develop creative strategies for outreach, education, and engagement using popular education tools such as theater, music, cultural messages.**”*

As much as the COVID-19 pandemic was detrimental, it provided opportunities to understand the communities better and mitigate any vaccine hesitancy. These successful strategies are invaluable data for the organizations and can be the foundation for future vaccine administration or emergency response. These outcomes have compounding public health impact especially for future disease mitigation efforts.

2.4c Overall Outcomes through Partnership

There are outcomes that would not have been possible without funding and technical support from the CDC Foundation. These “impossible outcomes” touch on topics already discussed. Below are some examples of impacts that have not yet been mentioned but embody a great scale of the CDC Foundation’s impact on programs and communities.

- ***“We could not have launched the website, nor done our pilot training of responders in South Africa. That work was entirely supported by the CDC Foundation.”***
- *“Our wider reach into community would not have been possible. We are now proud that our [organization] has reported that our target population (Latino/a/x has a higher percent rate of persons vaccinated than other races in our state. This speaks volumes to the work that our community health workers have conducted in our state and your supports allowed us to do this.”*
- *“The entire effort [would have been impossible]. I’ve been saying how the campaign that we helped build is a model of how the CDC Foundation and*

CDC can work together. The Foundation stepping in and enabling the quick start up and CDC supporting for the long term.”

- *“Had it not been for CDC [Foundation] funding and support, it would have been impossible for [organization name] to continue to fulfill our mission and provide services for families and individuals to survive and protect themselves from COVID-19 to stay healthy through the hardest time for humanity in 100 years.”*

Through these partnerships, the CDC Foundation reached individuals and families to overcome different social, political, and economic challenges of the pandemic.

2.5 Impacts

The public-private partnership of the CDC Foundation with 300+ organizations on COVID-19 related projects had a marked impact on public health, organizations, and the community. The goal of these projects was to bridge gaps, provide support to historically underserved communities, and increase access to equitable health resources.

2.5a Public Health Impact

Impacts on public health included (1) efforts to mitigate the spread of COVID-19; (2) strengthening response to emergency; (3) expansion of vaccine outreach; (4) and efforts to understand and address the community needs.

- (1) **Efforts to mitigate the spread of COVID-19:** Slowing the spread of COVID-19 required interdisciplinary efforts among public health agencies, partnering organizations, community members, and experts of different fields including

technology, data analysis, frontline workers and more. An important variable for this movement was also speed. The timeliness of CDC Foundation grants and unmatched connections with public health experts and programmatic support all contributed to successful partnerships working to reduce COVID-19 transmission among community members.

(2) **Strengthening response to emergency:** The emergency response to COVID-19 was strengthened through education and disseminating correct information. The partnering programs directly addressed this challenge through community education and effectively relaying the accurate information to the community member by catering to appropriate language and cultural barriers.

(3) **Expansion of vaccine outreach:** Vaccine administration is one of the pragmatic measures to fight against the pandemic that required a public effort to prove its efficacy. Through the partnership, programs were able to debunk misinformation, mitigate vaccine hesitancy, expand vaccine administration to racial minorities, working adults, farmers and rural population, immigrants, and refugees, and to the general public.

(4) **Efforts to understand and address community needs:** The top three types of partnering organizations surveyed were non-profit, community-based, and academic institutes (see Table 1). The CDC Foundation funded projects included public health and social science studies and research to address COVID-19 treatment and mitigation. These data and newly developed systems can lead to long-term public health impact and inform future emergency response and be utilized in different Organizational Impact

The funded partnerships with the CDC Foundation generated sustainability and long-term impact, including improving the operational level of the organizations. This included: (1) impact on operational capacity to continue the program after the partnership ended and (2) expansion of network and communities of people to work with. Because of their work towards implementing desired results, partnering organizations have now gained trust from communities and infrastructure to mobilize different projects. Partners have also grown during the pandemic, in terms of size or scale of impact, leaving them with long-term organizational and programmatic impact. A partner shared:

- ***“We have been able to multiply the workforce of promotors or community health workers significantly. As a result, we have community members with more skills, awareness, and a desire to continue to promote health and increase access for their communities. This allowed us to further our mission of partnering with communities to address inequities. There is a stronger infrastructure to deliver community-based public health interventions.”***

Furthermore, the partners’ project success also led them to incorporate a stable budget for future work. Seventy-eight partners mentioned the benefits and impact of networking opportunities through CDC Foundation guidance and support. Whether the networking opportunity took place prior to or during the program execution, 66% of partners mentioned it as a key outcome of partnership and long-term impact. CDC Foundation support and networking benefitted partner organizations by creating and strengthening partnerships across city, state, and federal levels and with community organizations.

2.5c Community Impact

Not a single program stopped at merely serving just one person or group; the end goal for partnering programs was to bring lasting impact at the community level. Ninety-six partners mentioned how their CDC Foundation-funded projects or programs had an impact on their communities. As Tables 2 and 3 demonstrate the types of organizations and the populations they served, many of the short and long-term impacts reached the local and global communities. Particularly in the pandemic context, community needs included providing PPE, testing, and vaccinations, combatting misinformation about COVID-19 and vaccines, provision of staff and medical equipment, and improving education and resources. Finally, this was an opportunity for community-based and non-profit organizations to directly engage with their community members and provide support and services. On a human-to-human level, partners expressed their project outreach opportunities have built trust between community members and the organizations.

2.5d Impact on Health Equity

When there is a public health emergency, the disparities in morbidity and mortality magnify “the inherent limitations to health care access and delivery”⁽²⁷⁾. Knowing this, the CDC Foundation collaborated with organizations to ensure equitable healthcare for people of all regions, races, languages, sexual orientation, and social status. Partners mentioned ‘health equity’ frequently in the impact survey results. Organizations worked towards making health more equitable by making vaccine available regardless of the work hours, immigrant status, and financial background; ensuring information about COVID-19 and vaccines were accurate in the native languages of the community

members; increasing healthcare access through clinics and community health workers; and utilizing technology, social media, and trusted messengers. Below are quotes from CDC Foundation partners regarding health equity efforts.

- *“The partnership with CDC foundation is supporting our organizational priorities to support state public health in addressing health equity.”*
- *“We are more known in the community than before and are building more partnerships in the community and with outside organizations. This allows our racial equity efforts to reach greater horizons.”*
- *“As a result of the CDC Foundation’s support, **we are able to form an equity alliance and disseminate important information and messages through this partnership, identify and share resources, and promote access to testing and vaccinations.**”*

Many projects promoted health equity and benefited not only future programmatic work, but also the organizations’ sustainability, networking, and impact in their communities.

2.6 Added Value of Partnership

The value of partnership extended beyond the results of funding and technical support alone. Partners rated their experiences in different components of the partnership, illustrated in Figure 2 and 3.

Partners particularly praised interpersonal experience with the CDC Foundation. Ninety-two partners shared their positive experience working with the CDC Foundation staff.

The survey questions to which partners shared positive interpersonal experience are

the following: 'What was the most positive aspect of working with the CDC Foundation?' and the rating question on the overall partnership experience with the CDC Foundation.

- *"We appreciate our collaboration with CDC Foundation. The staff and leadership we deal with are valuable and engaged partners."*
- *"[CDC Foundation Program Lead] and her staff were superb in ensuring lines of communication between the field and CDC Foundation were open and bidirectional. The information and materials shared via Lunch and Learn and during Team Meetings were useful and effective."*
- *"Working with [CDC Foundation team] is always a real pleasure! The team is always collaborative, professional, and supportive. It's a true partnership!"*
- *"The CDC Foundation is very active with their partners. I've found the experience welcoming and educational regarding our project. They've been very proactive with the grantees."*

6. DISCUSSION

The results of this study portray the components and outcomes of the partnership with the CDC Foundation. Summarizing the partnership evaluation via the indicators of the logic model captures the experiences of working with an international level non-profit organization. It explains the kinds of support, organizations involved, populations served, measurable output of the support, and the long-term impact of those outcomes.

The Importance of Public – Private Partnership

The CDC Foundation has supported public health emergency efforts since 1995 – responding to H1N1, Opioid Epidemic, hurricanes, Zika Virus, Ebola Virus and more. With every crisis, it is imperative to understand the social implication of the emergency and the communities' needs. This report shows that the partners' deliverables aligned well with the public health needs from the community level. The CDC Foundation plays a unique and critical role in emergency response by mobilizing funding and support quickly. This demonstrates the value of the CDC Foundation public – private partnership model. The evolving challenges of the COVID-19 pandemic required awareness, flexibility, and quick action.

The results prove the 'central tower' role of the CDC Foundation that can bridge organizations. During crisis management, a central tower can be defined as the entity that actively engages with local partners, addressing community and population needs, while synchronized with higher federal level's control and prevention system⁽²⁸⁾. It supports the work of CDC by applying technical and scientific knowledge to ensure safety of all people while directly monitors and evaluates partners' programmatic output.

A system of identifying and connecting organizations through constant evaluation process can enhance program outcome and subsequently public health impact.

The results also demonstrate that partnership can have both direct and indirect impact. The goal of partnership is more than completing a program successfully and satisfying the logic model. Each program has various levels of stakeholders, funding, and technical support that has a ripple effect of impact.

The Development of CDC Foundation Partnership through the Pandemic

The RCPU team was able to provide evaluation consultations to partners that needed assistance with the development of their logic model and evaluation plan by helping to define these logic model components. The logic model also provided the opportunity to establish any project assumptions related to objectives and means of verification for metrics that would be collected during project reporting.

To minimize back-and-forth email exchanges and misunderstandings of the grant application, the CDC Foundation worked to increase the readability of documents, reporting details, and grant terminology for a successful partnership outcome. In addition to this, the CDC Foundation recognized the need for a guide for partner organizations that may be new to or less familiar with the public health grant space, and the importance of addressing it promptly during emergency response. This has led to the creation of a comprehensive partnership guideline document that addresses commonly asked questions and stores timeline requirements and expectations with clear and simple verbiage.

Recommendations

Recommendations are based on the frequencies of codes in the dataset by focusing on what was meaningful and constructive. Based on the partners' direct feedback, there are notable recommendations to general public health organizations' programmatic operations.

Recommendation 1: Foster partner networking and collaboration during emergency response

The results of the report demonstrate the extent to which the CDC Foundation collaborates with a diverse array of organizations, serving all kinds of populations and social needs. During an emergency, not many public, non profit, or charitable organizations have the capacity to know other organizations working for the similar cause. For future emergency responses, it should be identified whether partnering organizations are open to get connected and collaborate, including donors, researchers, and other grantee organizations

Recommendation 2: Maximize opportunities for technical assistance during emergency response

Another unique role of the CDC Foundation comes from its relationship with grantee partners and its ability to provide resources and technical assistance. During project periods, grantee organizations expressed needs for technical support on data analysis and connections with subject matter experts. Greater technical support for emergency response can enhance the quality of programmatic support and more evidence-based program work. Large public health organizations should foster a culture

of technical assistance, plus relationships with other organizations, to assist in creating the best programmatic outcomes.

Recommendation 3: Monitor the project by using logic model throughout the project partnership

Public health organizations should utilize a logic model framework tool for collaboration and programming planning, as well as to monitor progress during the project period and partnership. Logic models are useful when comparing between project progress reports to expected outputs, interim and long-term outcomes from the logic model. It is used to measure overall program performance relative to program budget and time remaining and is a valuable tool for program management when incorporated into the management model. Logic models are also the best practices for program development and implementation as well as assisting in establishing evaluation metrics from the beginning so that appropriate metrics can be shared out.

Recommendation 4: Continue direct outreach.

This evaluation speaks volume to the impact of direct outreach to community-based organizations for grant opportunity. Table 7 shows that 56% of partners who submitted the survey received direct outreach from the CDC Foundation. Community-based organizations and larger public health organizations can benefit from direct outreach. Direct outreach creates instant connections between organizations. Furthermore, there are many factors that impact an organization's knowledge of opportunities. Additionally, Table 7 demonstrates that the direct outreach can lead to a greater long-term evaluation rate. Public health organizations should build relationships with CBOs and nonprofit partners and continue to develop budgets to allow for this

important work to continue. This can also facilitate quickly reaching out and responding to future public health threats.

Recommendation 5: Sustain COVID-19 public health work due to the long-term impact of the disease and new variants continue to arise

There are long-term health and socioeconomic impacts of the COVID-19 pandemic⁽²⁹⁾. As this impact evaluation demonstrated, these CDC Foundation-funded COVID-19 projects worked with most-disproportionately impacted communities. While the end of the pandemic is near, the COVID-19 disease may continue⁽³⁰⁾. New variants continue to arise, and fourth boost shots have been administered to portions of the populations. COVID-19 will become another recurrent disease that health systems and societies have to manage⁽³⁰⁾.

Limitation

This impact evaluation comes with limitations of research that may have affected the data quality and representativeness.

Future grant opportunities may have affected the motivation to participate in this survey, affecting the representativeness of the results. Noticeably, the non-profit and community-based organization occupy the highest rate of respondents. For smaller scale, local organizations, maintaining a good relationship with the grant organizations can be of high importance. Therefore, this evaluation may represent more of the non-profit and community-based organization partners compared to other types of partners.

As a common limitation of survey data collection, participants may have experienced survey fatigue, or an evaluation fatigue in the context of the partnership. A

partner mentioned that they received an evaluation form for their projects several times as it is part of the monitoring and evaluation process of programs. Thus, the quality of partners' response may not have been captured in the details of the partnership experience. Furthermore, several projects finished over 6 months ago, creating potential recall bias for some of the responses. As the partnership began with the CDC Foundation as early as February 2020, many partnering organizations may not have a clear record of the results of the partnership. Staff turnover among partnership organizations likely led to some differentiation in results.

Public Health Implication

This evaluation provides a summary of the specific needs during the COVID-19 pandemic. The work of the grantee partners provide detailed illustration of how different public health challenges of the pandemic were addressed. In the event of a future pandemic or emergency response, the examples of the grantee projects can provide baseline and such operation can start much earlier with this established knowledge. The summary of this partnership report can support future emergency work in two ways: (1) this provides understanding regarding the public health challenges and needs during a pandemic emergency response, and (2) it reveals the populations' needs and how they were affected during the pandemic. With these two sets of knowledge, public health organizations can be more vigilant and subside the chance of regenerating the same types of challenges to save and improve more lives.

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TABLE AND FIGURES

Table 1. CDC Foundation Services through Historic Emergencies in the United States and Globally, by Year and Event

Year	Event
2001	9/11 Terrorist and Anthrax Attacks
2004	Tsunami Disaster*
2005	Hurricane Katrina
2008	Opioid Crisis*
2009	H1N1 Flu Pandemic
2010	Haiti Earthquake
2015	Ebola
2016	Zika
2017	Hurricane Harvey, Maria, Irma
2018	Hurricane Michael and Florence
2018	Opioid Crisis*
2019	Hurricane Dorian*
2019	Guam Dengue Outbreak*
2019	Ebola
2019 – 2022	COVID – 19
2021	Afghan Rescue Response

*Did not involve U.S. CDC Emergency Operation Center activation

Table 2. CDC Foundation-funded COVID-19 Projects, by Social Determinant of Health, 2020 – 2022

Social Determinant of Health	Frequency	Percentage (%)
Community and Social Context	118	31.1
Economic Stability	8	2.1
Education	117	30.8
Healthcare System	124	32.6
Neighborhood and Physical Environment	13	3.4
Total	380	100

Table 3. CDC Foundation-funded COVID-19 Projects, by COVID-19 Public Health Needs, 2020 – 2022

COVID-19 Public Health Needs	Frequency	Percentage (%)
Local response efforts	87	22.9
Health Equity	194	51.1
Global response	34	8.9
Communication needs	27	7.1
Lab capacity and research	23	6.1
Data and technology	13	3.4
Frontline Workers	1	0.3
N/A	1	0.3
Total	380	100

Table 4. Code and Definition of the Qualitative Analyses based on CDC Foundation Partnership Impact Evaluation Survey Response, 2020 – 2022

Code	Subcode	Definition
Positive Partnership Experience	• Technical Programmatic Support	• Support related to technical public health skills that influenced programmatic outcome
	• Interpersonal Experience with CDC Foundation Staff	• Positive experience working with CDC Foundation staff, particularly looking for specific adjectives that describe how it was positive
	• Reports, Timeline, Structure	• Steps of the different partnership experiences, reports, timeline, and structure – rigidity, level of difficulty navigating through the required steps
	• Funding	• Positive experience related to receiving grant, the timeliness and impact
	• General Nice Acknowledgement	• General acknowledgement of specific staff, positive expression in the partnership
Opportunities for Improvement	• Technical Programmatic Support	• Support related to technical public health skills effected programmatic outcome
	• Interpersonal Experience	• Areas of improvement working with CDC Foundation staff; looking for descriptive adjectives that speak to the interpersonal experience that can be improved
	• Reports, Timeline, Structure	• Steps of the different partnership experience, reports, timeline, structure – rigidity, level of difficulty navigating through the required steps
	• Funding	• Struggles and difficulty related to grant receiving experience
Challenges Prior to Partnership	• Operational	• Challenges related to operational, organizational level – ability to proceed with the project. Lack of resources, limitation in workforce due to/during the pandemic (does not include challenges only related to funding)
	• Staffing	• Challenges related to staffing, staff shortage, education, and compensating staff

Code	Subcode	Definition
	<ul style="list-style-type: none"> • Funding 	<ul style="list-style-type: none"> • Challenges related to lack of, insufficient funding to launch or proceed a program/project
	<ul style="list-style-type: none"> • Population/Public Health Level 	<ul style="list-style-type: none"> • Challenges related to population level public health. Public health level challenge include vaccine, PPE (need to indicate a specific public health issue, not just a programmatic issue)
Public Health Impact Partnership	<ul style="list-style-type: none"> • Lab, PPE • Vaccine • Emergency Response • Community Impact • Resource Provision 	<ul style="list-style-type: none"> • Provision and generation of tools related to tools, lab, personal protective equipment (PPE) • Any indicator of outcome related to vaccine • Ways that activate people to fight against COVID-19 • Indication of local scale of the impact of a specific community or a population category • Creation, dissemination, provision of resources and tools to combat public health challenges or to meet the needs to target population or workforce, includes support for research
Partnership Outcome	<ul style="list-style-type: none"> • Program Sustainability • Organizational Impact Networking • Staffing • Impossible Outcome without CDCF Grant 	<ul style="list-style-type: none"> • Programmatic impact, ability to launch, sustain, and execute a program • Impact on the organization to expand their partnership, meet new external human resources • Internal strengthening of staffing and workforce • Indication of impossible outcome without the grant
Long Term Goal/Post Partnership Vision	<ul style="list-style-type: none"> • Long Term Goal/Post Partnership Vision 	<ul style="list-style-type: none"> • Long term goal, post partnership plan

Table 5. CDC Foundation–funded COVID-19 Projects, by Partner Type of Organizations, 2020 – 2022

Partner Type	Frequency	Percentage (%)
Non-profit	75	59.1
Community-based	16	12.6
Academic Institute	12	9.5
State or Municipal	9	7.1
For profit corporation	8	6.3
Federal	4	3.15
Research institute	2	1.6
Other	1	0.8
Industry Sector*		
Arts, Entertainment, and Recreation	3	2.4
Clinical Healthcare	17	13.4
Educational Services	21	16.5
Finance and Insurance	0	0
Food and Accommodations	4	3.2
Health Evaluation and Epidemiology	9	7.1
Healthcare Policy and Management	10	7.9
Health Research	18	14.2
Information Technology	1	0.8
Public Health	63	49.6
Social Work and Social Assistance	37	29.1
Other	32	25.2

Note: Variables marked with * do not need to add up to N=127 or 100%. This is because the respondents were able to choose more than one option.

Table 6. CDC Foundation–funded COVID-19 Projects, by Partner Demographic, 2020 – 2022

Variables	Frequency	Percentage (%)
Racial and ethnic group CDC Foundation-funding served*		
Alaska Native	28	22.1
American Indian	41	32.3
Asian	63	49.6
Black/African American	90	70.9
Hispanic or Latino/a	85	66.9
Native Hawaiian	29	22.8
Pacific Islander	38	29.9
White/Caucasian	70	55.1
Other	25	19.7
Age group served*		
Children	63	49.6
Youth	79	62.2
Adults	109	85.8
Middle-Aged	109	85.8
Older Persons or Elders	102	80.3
Other	13	10.2
Population served*		
Lower-socioeconomic Status	74	58.3
Urban Communities	58	45.7
Immigrant and Refugee Populations	57	44.9
Rural Communities	54	42.5
Front-line Workers	46	36.2
Students	40	31.5
LGBTQIA+	36	28.4
Pregnant Individuals	32	25.2
Populations Experiencing Homelessness	30	23.6
Persons with Disabilities	28	22.1
Migrant Farmers and Agriculture Workers	25	19.7
Persons with Mental and Behavioral Disorder	24	18.9
Veterans	19	15.0
Justice-involved Individuals	14	11.0
Other	27	21.3

Note: Variables marked with * do not add up to N=127 or 100%. This is because the respondents were able to choose more than one option.

Table 7. CDC Foundation–funded COVID-19 Projects, by Background of Partnership and Experience, 2020 – 2022

Variables	Frequency	Percentage (%)
Motivating Factor to Partner*		
Community needs (COVID-19)	116	91.3
Mission/Goal Alignment with the CDCF	87	68.5
Funding Source	78	61.4
Affiliation with the CDC	48	37.8
Technical Support	16	12.6
Past Collaboration Experience	22	17.3
Other	3	2.4
How Partners Learned about the Opportunity*		
Received direct outreach from the CDCF	72	56.7
Introduced or recommended by colleague	40	31.5
Email, promotion, advertisement	12	9.5
Introduced/recommended by supervisor	9	7.1
Round table, conference	3	2.4
Social media	3	2.4
Search engine (e.g., Google, Bing, Yahoo)	2	1.6
Other	16	12.6
Sufficient Budget		
Yes	112	88.2
No	15	11.8

Note: Variables marked with * do not add up to N=127 or 100%. This is because the respondents were able to choose more than one option.

Table 8. CDC Foundation–funded COVID-19 Projects, Challenges Prior to Partnership, 2020 – 2022

Types of Challenges Prior to Partnership	Examples	Quotes	Partners Referenced (#) (N=127)
Operational	<ul style="list-style-type: none"> • Lack of resources • Limitation in workforce 	“There was a huge need and not enough resources for our organization to scale up in the way that was as quickly as was needed.”	53
Population or Public Health Level	<ul style="list-style-type: none"> • Vaccine • Personal protective equipment • Other specific public health issue such mental health 	“One of the main issues we receive inquiries about is social isolation, particularly during this pandemic. Given that our LGBTQ+ older adult communities are much more likely than the general population to live alone, as well as to be childless, this poses health and safety risks as well as mental and emotional risks to our already vulnerable communities.”	48
Funding	<ul style="list-style-type: none"> • Lack of, insufficient funding to launch or proceed a program or project 	“We had lost funding for a Community Health Worker program that had been working very well to outreach to immigrant populations affected by COVID.”	36
Staffing	<ul style="list-style-type: none"> • Staff shortage • Staff training • Compensating staff 	“Our greatest challenge has been the staffing to test, vaccinate, educate and treat patients with COVID-19.”	7

Figure 1. COVID–19 Challenges that Partners Faced Prior to Collaboration with the CDC Foundation, 2020 – 2022

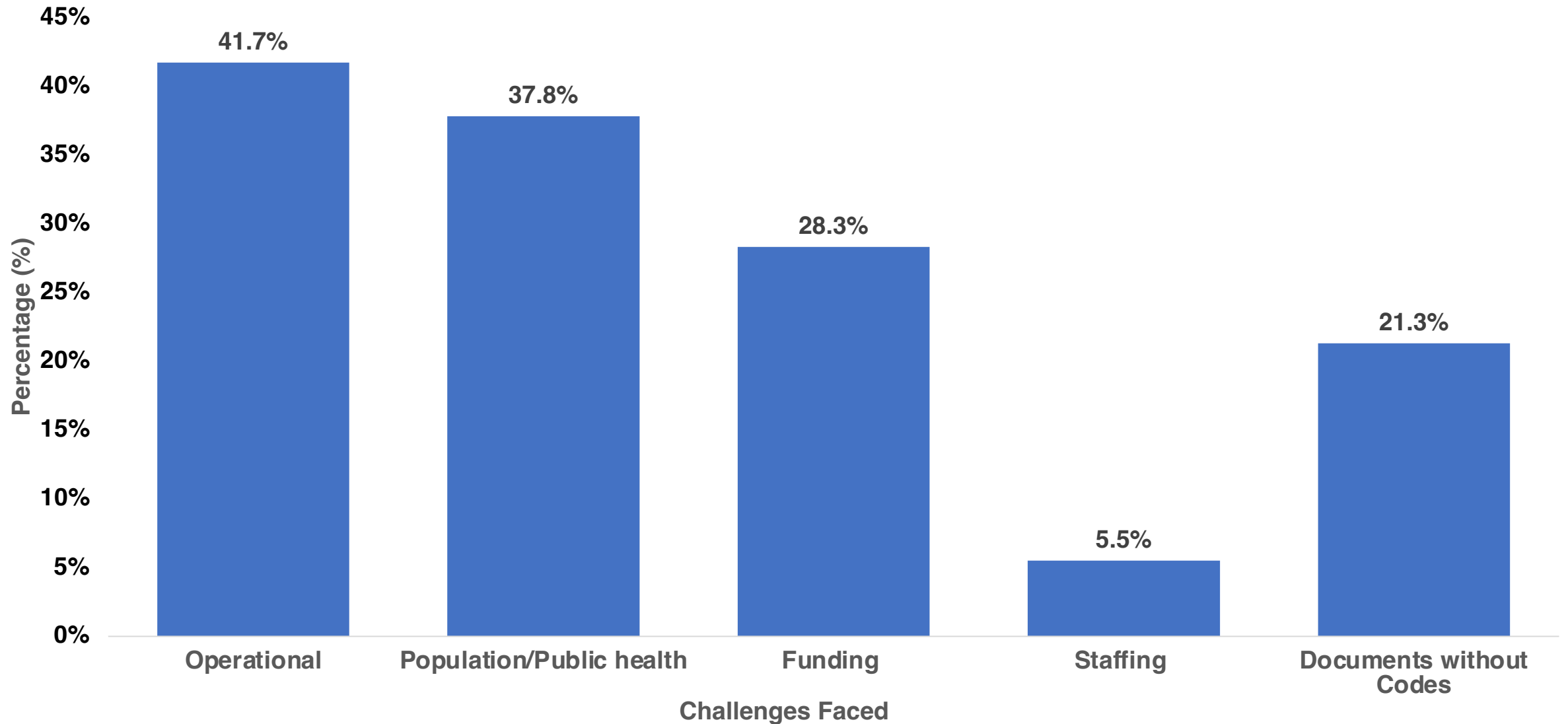


Figure 2. CDC Foundation-funded COVID-19 Project Partner Ratings on Components of the Experience, 2020 – 2022

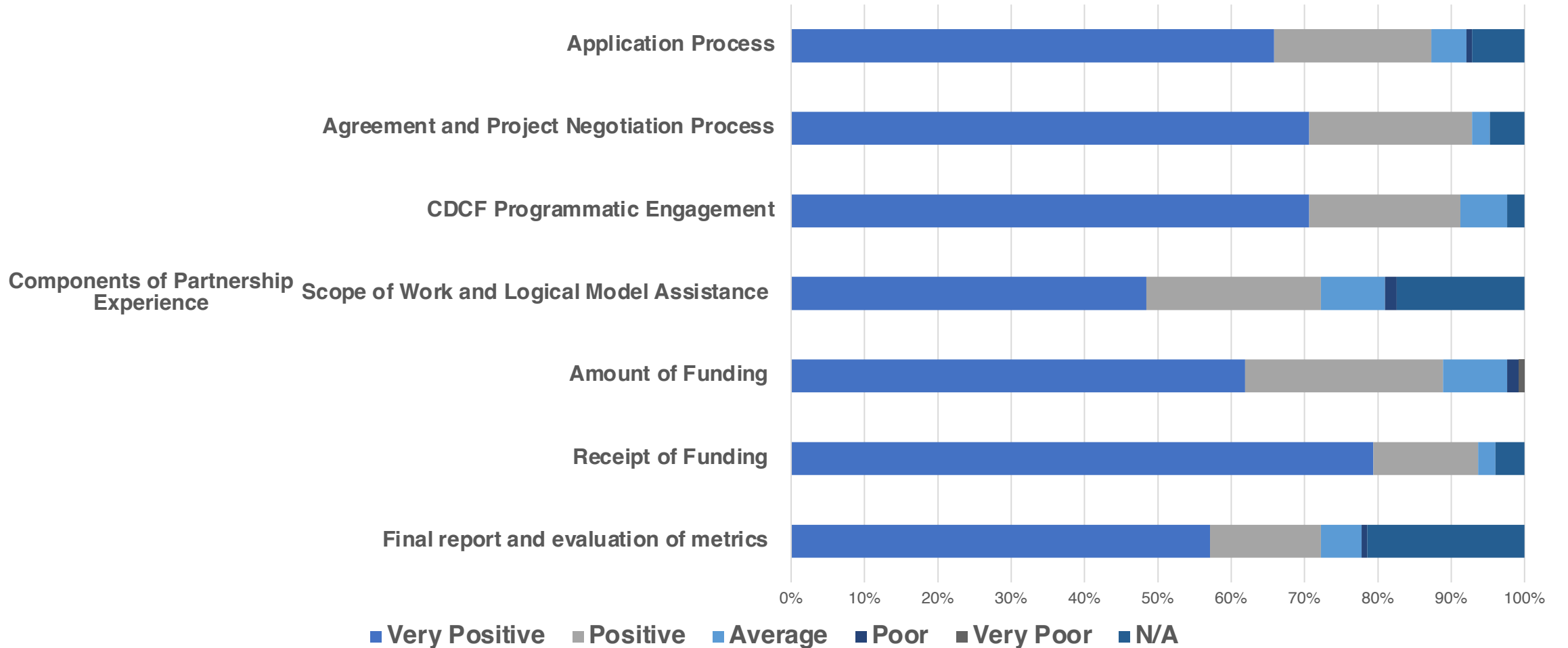
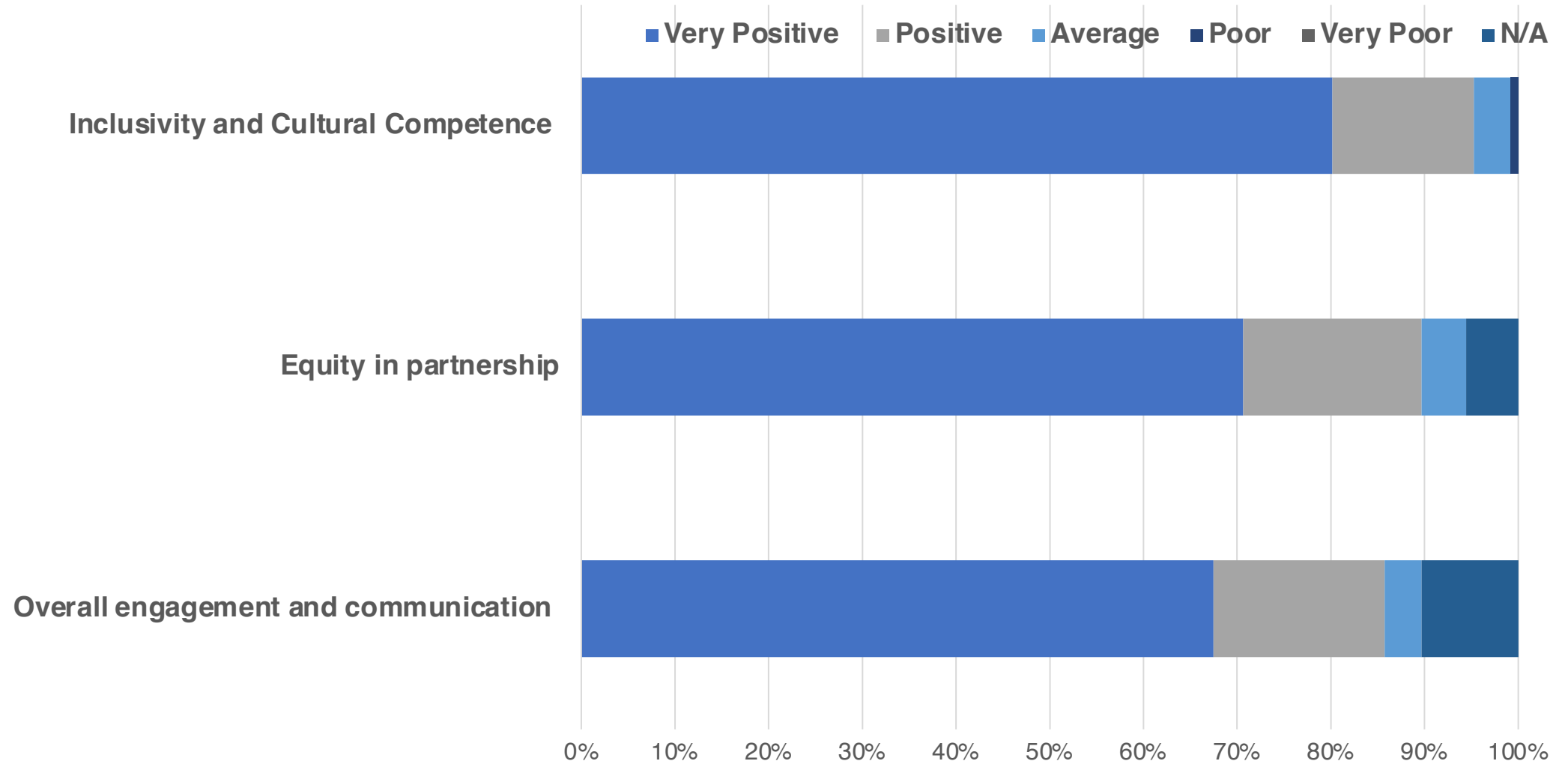


Figure 3. CDC Foundation-funded COVID-19 Project Partner Ratings on Partnership Experience, 2020 – 2022



APPENDIX

Survey Design

Introduction Message

Dear Valued Grantee Partner,

During the COVID-19 emergency response, the CDC Foundation has been committed to supporting our grantees' efforts in providing essential services and implementing critical responses for saving and improving lives.

In order to continue to build our capacity to support grantees, we would like to better understand your organization's experience working with the CDC Foundation during your COVID-19 emergency response.

Please complete this survey by **March 11th, 2022**, as your results will help inform the planning and design of future grantee support. If there is another person at your organization who is better positioned to provide feedback, please feel free to forward this survey to them. We expect the survey to take approximately **20 minutes**.

We are grateful for your feedback and thank you for taking the time to help us improve our work and better support yours.

With gratitude,
CDC Foundation

Basic Information

1. Which option below best describes your organization?
 - Non-profit organization
 - Community-based organization
 - For profit corporation
 - Academic Institute
 - Research Institute
 - Federal Organization
 - State or municipal organization
 - Other (please specify)

2. What industry sector best describes your company? (Select all that apply)
 - Arts, entertainment, and recreation
 - Clinical healthcare
 - Educational services

- Finance and Insurance
- Food and accommodations
- Health evaluation and epidemiology
- Healthcare policy and management
- Health research
- Information technology
- Public Health
- Social work and social assistance
- Other (please specify)

3. What is the size of your organization?

- 1-10 employees
- 11-50 employees
- 50+ employees

Project Demographic Questions

4. Which racial and ethnic group(s) did your CDC Foundation-funded project serve?
(Select all that apply)

- Alaska Native persons
- American Indian persons
- Asian persons
- Black/African American persons
- Hispanic or Latino/a persons
- Native Hawaiian
- Pacific Islander
- White/Caucasian persons
- Other (please specify)

5. Which age group(s) did your CDC Foundation-funded project serve? (Select all that apply)

- Children (Age 10 or younger)
- Youth (Age 11 – 17)
- Adults (Age 18 – 39)
- Middle – Aged (Age 40 – 64)
- Older Persons or Elders (Age 65+)
- Other (please specify)

6. Which special population(s) did your CDC Foundation-funded project serve?
(Select all that apply)

- Front-lined workers
- Immigrant and Refugee Populations (documented or undocumented)
- Justice-involved individuals, formerly incarcerated persons

- LGBTQIA+
- Lower Socioeconomic Status
- Migrant Farmers and Agriculture Workers
- Persons with Disabilities
- Persons with Mental and Behavioral Health Disorder
- Pregnant Individuals
- Populations Experiencing Homelessness
- Rural Communities
- Students
- Urban Communities
- Veterans
- Other (please specify)

Partnership Questions

7. How did you learn about the opportunity to partner with the CDC Foundation?

- Introduced/recommended by supervisor
- Introduced/recommended by colleague
- Round table, Conference
- Social Media
- Search Engine
- Email, promotion, advertisement
- Received direct outreach from the CDC Foundation
- Other (please specify)

8. What motivated your organization to partner with the CDC Foundation? (Select all that apply)

- Community needs (COVID-19)
- Mission/Goal Alignment with the CDC Foundation
- Funding Source
- Affiliation with the CDC
- Technical Support
- Past Collaboration Experience
- Other (Please specify)

9. The project's budget was sufficient to achieve project goals (Yes/No).

- Yes
- No

10. Please rate your experience with the CDC Foundation considering the following aspects (If not applicable, select N/A):

	Very Poor	Poor	Average	Positive	Very Positive	N/A
Application Process						
Agreement and project negotiation process						
CDC Foundation's programmatic engagement						
Scope of work and logic model assistance						
Amount of funding						
Receipt of funding						
Final report and evaluation of metrics						

11. Please rate your experience with the CDC Foundation considering the following aspects (If not applicable, select N/A):

	Very Poor	Poor	Average	Positive	Very Positive	N/A
Inclusivity and cultural competence						
Equity in partnership						
Overall engagement and communication						

12. Based on your experience, please share any feedback on how the CDC Foundation can improve its programmatic partnership with organizations (open response).

Impact Questions

13. Which of the below social determinants of health category best describes your CDC Foundation-funded project? (Select all that apply)
14. Before receiving the CDC Foundation's grant, what challenges did your organization face in responding to the COVID-19 pandemic?
15. If applicable, how did your organization use the CDC Foundation grant to address the particular challenges your organization faced due to COVID-19?
16. How did the CDC Foundation's support help your organization respond to the COVID-19 pandemic?
17. What specific project impacts would not have been possible during the project timeframe without the support from the CDC Foundation?
18. Did the CDC Foundation's support lead to indirect benefits within the communities you served? (Example: enabled additional fundraising, community, or organizational partnerships, etc.) If so, please explain.
19. What are some long-term effects of the partnership with the CDC Foundation on your organization's goals and development?
20. Have your organizational or programmatic goals changed since entering a partnership with the CDC Foundation? If yes or no, please explain your answer below.

Closing Questions

21. What was the most positive aspect of working with the CDC Foundation?
22. What areas of working with the CDC Foundation can be improved?
23. Please share any additional information that you would like our evaluation and programs team to know.

Contact Information

24. I request further follow-up from the CDC Foundation to discuss my responses.
25. Please enter your contact information for follow-up.
26. Organization Name (Full Name)
27. Your Title (What best describes your role?)

CDC Foundation's Logic Model Framework

Name of program/project:			
Problem/Situation: [Briefly] What is this program/project aiming to address?			
Main Strategies/Activities: [Briefly] What are the main activities or strategies that will be undertaken as part of this project?			
Simple Logic Model Table: Please list the activities that will be implemented during the project period, along with the desired outcomes.			
Program Activities	Short-term Outputs	Outcomes	Goals/Long-term Outcomes
			<i>*to be completed by RCPU I&E team</i>
External Factors: List any factors that will influence achievement of project outcomes.			
1.			
2.			
Evaluation Plan: Indicate the key activities and outcomes/metrics that will be tracked during the project to determine effectiveness/success. Indicate the data source/collection method for each metric.			
Activity A: [name from Project Activities above]- Outcome A: [name from Project Outcomes above]: [data source/collection method]			
Activity B: [name Project Activities above] - Outcome B: [name from Project Outcomes above]: [data source/collection method]			