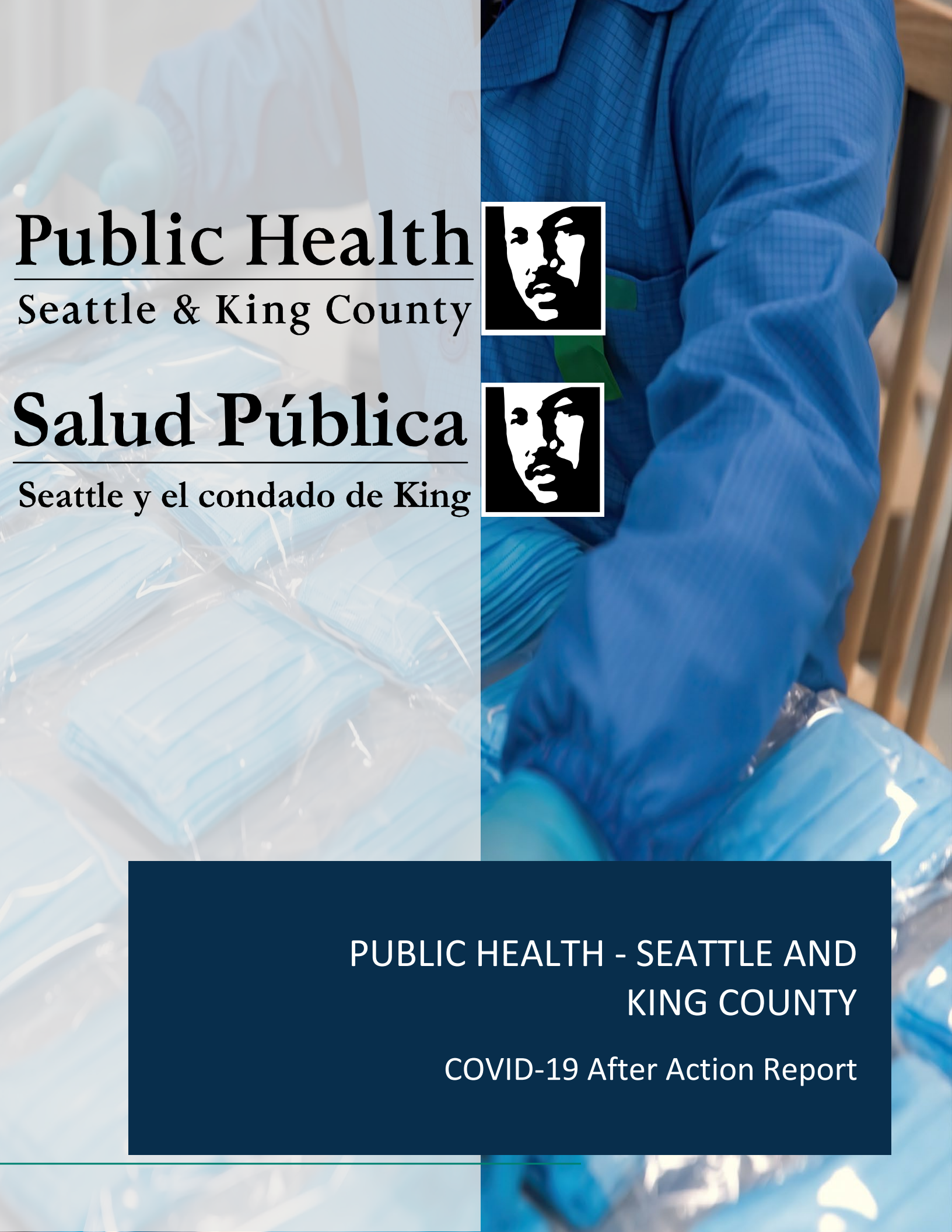

Public Health
Seattle & King County

Salud Pública
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PUBLIC HEALTH - SEATTLE AND KING COUNTY

COVID-19 After Action Report

EXECUTIVE SUMMARY

The unprecedented nature of the COVID-19 pandemic presented challenges across the globe. It forced leaders in public health to sustain extended response operations while balancing planning for potential incidents and initiating active response measures. The pandemic made historical inequities, including structural ableism and racism, more apparent in both government and healthcare systems.

The disproportionate impact of COVID-19 on communities of color and individuals with disabilities has been documented across the United States. In King County, data analyses show that Hispanic/Latinx, Native Hawaiian/Pacific Islanders, Blacks, and American Indian/Alaskan Natives experienced higher rates of COVID-19 cases and hospitalizations compared to Whites.[1] Historical inequities, prejudicial practices and policies, and continued discrimination and injustices in many institutions contributed to added risk and inadequate access to services for many people. From the beginning of the pandemic, Public Health – Seattle King County (PHSKC) and community-facing task forces were concerned that COVID-19 could exacerbate health inequities and take the biggest toll on communities already disadvantaged due to a long history of structural racism, systemic oppression, discrimination, and violence. For people with disabilities in King County during this pandemic, these inequities could be truly catastrophic. The need to prioritize addressing impacts on individuals with disabilities was of primary importance due to the disproportionate impacts of COVID-19. Providing healthcare and services that were accessible to all communities was an equity and social justice issue and aligned with PHSKC's mission to serve King County's most vulnerable communities.

Despite the ongoing challenges, personnel from public health, healthcare, and government as well as first responders and community organizations demonstrated immense self-sacrifice and public service. Staff within PHSKC and their internal and external partners continue to rally around each other, supporting one another and filling needs when they arise.

This After-Action Report (AAR) was created to better understand the efforts undertaken by PHSKC during the COVID-19 pandemic and identify ways to improve future responses to public health emergencies. An AAR is a document that summarizes key information related to a disaster response to help evaluate activities and memorialize the efforts of those who responded. This report analyzed the response from January 2020 – January 2022 and the findings in the report identified strengths and areas for improvement raised by stakeholders and partners. This report is not inclusive of all work related to COVID-19 but is a sampling of activities collected from PHSCK. The end of this report includes a brief list of recommended actions for PHSKC to address, as areas for improvement. Staff within PHSKC collected a comprehensive list of these actions and recommendations, which are being tracked internally to improve PHSKC's response to future emergencies.

[1] Public Health Insider. May 1, 2020. New Analysis Shows Pronounced Racial Inequities Among Covid-19 Cases, Hospitalizations And Deaths. Accessed 5/23/22. https://publichealthinsider.com/2020/05/01/new-analysis-shows-pronounced-racial-inequities-among-covid-19-cases-hospitalizations-and-deaths/

The After-Action Report Methodology

The report generation process was undertaken by Constant Associates, Inc. (CONSTANT), a health security and emergency management consultancy firm. Standard incident response evaluation principles and best practices were followed in the creation of this report and it is consistent with Homeland Security Exercise and Evaluation Program (HSEEP) doctrine. A team of experts collected data through a multi-pronged process which included documentation reviews and facilitated feedback sessions with external partners. A substantial amount of feedback from department staff was collected by PHSKC. This included transcripts and summary reports of facilitated discussions, interviews, and a survey of department staff. These documents were part of the documentation review conducted by CONSTANT. After a thorough analysis of the data collected, key findings were outlined. Best practices are highlighted throughout the document to share procedures, tactics, and solutions utilized during the PHSKC COVID-19 pandemic response. Recommendations have been developed by the PHSKC response teams, community partners, and CONSTANT to support PHSKC's readiness for future emergencies. The most notable strengths and areas for improvement are highlighted below.

Significant Strengths

- PHSKC's collaboration across departments, including the prominent leadership role it played for the nation in the pandemic response, was award-winning. Leadership steps included creating the nation's first civilian isolation and quarantine system that served over 2,300 residents by January 2022. They also set and met ambitious vaccination goals focused heavily on equity while creating strategies to support the vaccination of older adults and Black, Indigenous, and people of color (BIPOC). They also maintained the lowest death rate due to COVID-19 of the 20 largest metropolitan areas in the country.

- PHSKC's COVID-19 dashboards, such as those created by the Analytics and Informatics (A&I) Team, enabled public health decision-making supported by data. The dashboards showed cases counts, community transmission, syndromic surveillance, and vaccination uptake overlayed with demographics and geographic information. Dashboards, such as the Communities Count COVID-19 Vulnerable Communities Data Tool, also revealed very early in the pandemic the disproportionate impacts of COVID-19 on BIPOC populations and were recognized for their effectiveness and innovation by the National Association of County and City Health Officials (NACCHO). The use of these dashboards allowed PHSKC to focus its response on specific communities and provide additional services to those most impacted by the pandemic.

- Community navigators were consistently seen as a strength by PHSKC staff, partners, and stakeholders. The community navigators represented diverse populations dealing with a lack of transportation, job loss, food insecurity, and loss of housing. Imbedded in their communities, navigators served as conduits to get resources to their communities, dispel misinformation, and highlight the known fears and barriers to resources and healthcare. Additionally, community navigators provided important information and feedback to PHSKC staff to help shape and improve their response work to better serve their communities. There are numerous examples throughout this report detailing the community navigators bridging the gap between public health efforts and communities that needed it the most.

- PHSKC's Language Access Team raised the standard for language accessibility through innovation and collaboration with key partners. The team demonstrated that translating public health information into forty languages with short turnarounds is achievable and can be done in a cost effective and culturally sensitive manner. The team partnered with Washington State Coalition for Language Access (WASCLA) to develop a system of just-in-time locally certified and experienced translators allowing for same day, 24-hour, and 48-hour turnaround times. To elevate the effectiveness of the system, PHSKC opened the system to partners who were able to leverage the language capability for their roles in the public health response.

Significant Areas of Improvement

- There remain numerous barriers to achieving equity in PHSKC's response. There were delays in leadership decisions that compromised work, including an emphasis on urgency over equity, decisions made without community input, occasional difficulties identifying how to influence work in established coordination structures, and a lack of equity training across activated staff. While proud of the organizations and communities they were able to engage, teams primarily focused on ensuring equity noted there were connections with community members left untapped and groups that were missing from the conversation. There was a noted lack of BIPOC providers in the Public Health Reserve Corps which raised concerns about the ability for those systems to serve communities disproportionately impacted by the pandemic.

- Access and Functional Needs planning was noted as a significant area for improvement throughout the response. Many of the people at highest risk of infection and death from COVID-19 were unable to access early interventions such as testing and then later vaccines until substantial communication and assistance was provided by CBOs and advocacy groups. PHSKC had an Equity Response Annex but did not have an Access and Functional Needs plan or an Americans with Disabilities Act (ADA) coordinator. This highlighted gaps in translation and interpretation services for residents with disabilities, testing and vaccine site accessibility, representation on public health dashboards, and transportation to make use of COVID-19 resources and support.

- PHSKC teams widely agreed that they were overwhelmed with workload, and response demands dramatically outpaced their resources. Many employees, particularly early in the response, worked 80–100-hour work weeks, often going months without a day off. Aside from taking time away from the job, many felt they could not reduce their workloads, take needed breaks, or address their physical, emotional, or mental health. PHSKC employees expressed they felt they were not adequately compensated for the exponential increase in responsibilities. This was compounded for some staff by the fact that they were ineligible for overtime pay and are unable to use additional compensation in the form of paid vacation due to response demands. Staff recognized and appreciated that leaders encouraged teams to work less and practice self-care, but many felt it was not feasible because the encouragement was not reflected by a reduction in workload or adequate staffing to meet needs.

- Hiring and onboarding was critical to scale up the workforce to meet the public health response needs. While recognizing the unprecedented nature of the pandemic, there were notable administrative

burdens and a significant amount of time required to fill positions. This limited scalability and contributed to staff burnout. Many staff noted that potential hires were lost as a result, and they were forced to use staffing agencies to temporarily fill gaps. The staffing agencies exacerbated inequities with PHSKC because those individuals were paid a lower rate and did not have the benefits that PHSKC employees were offered. Many of the new hires were also engaged in temporary positions making job security a constant concern. This created uncertainty and stress for both new employees and PHSKC teams to which they were assigned. Furthermore, some staff expressed worry that since new hires were in temporary positions, the added diversity they brought to the workforce would be lost at the end of their employment with the county.

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INTRODUCTION

RACISM AS A PUBLIC HEALTH CRISIS

Racism is a public health crisis. It threatens communities across the United States by causing health inequity, depriving individuals of vital access to healthcare, and resulting in higher death rates, shorter life expectancy, higher severity of disease, and lack of access to treatment.[2] Structural racism is a root cause of several health disparities, manifesting through laws and policies that create barriers to equitable and high-quality care.[3] In addition to individual acts of discrimination, structural racism invades systems of power, informing decision-making and furthering health inequity. These same structures exclude people with disabilities, resulting in health disparities. People with disabilities are more likely to be denied health care than people without, as inequities are fueled by discriminatory and antiquated views of disability. When understanding the impacts racism has on the health of communities, it is vital to use an intersectional lens – racism often does not occur in a vacuum, but intersects with other forms of discrimination, including discrimination on the basis of ability or socioeconomic status. Using a lens capable of recognizing this layering of discrimination is necessary especially in public health and emergency response.

The COVID-19 pandemic further drew back the curtain on the impact of structural racism in American healthcare. Racism against people of Asian descent significantly increased during the pandemic, with a documented 77% rise in hate crimes against Asian people living in the United States between March 2020 and June 2021.[4] Additionally, health inequity in pandemic response was also documented. The CDC states that out of the 65% of COVID-19 cases in the United States where race and ethnicity data were available, Black people accounted for 14% of deaths related to COVID-19, despite making up only 13% of the total population.[5] Hispanic people represent 24% of COVID-19 cases, despite only making up 18% of the US population. Through June 12, 2022, King County has had 2,850 deaths (0.6% of positive cases). Age-adjusted death rates of confirmed cases are highest among residents who are Native Hawaiian/Pacific Islander (749 per 100,000), American Indian/Alaska Native (452 per 100,000), Hispanic/Latinx (260 per 100,000), and Black (219 per 100,000). Rates for most communities of color are higher than among White residents (106 per 100,000). People who are incarcerated also experienced a much higher burden of the disease than non-incarcerated individuals. In 2020, 40 of the 50 widest outbreaks of COVID-19 occurred in prisons.[6] People with disabilities experienced unique impacts due to health inequity during the COVID-19 pandemic, as a lack of appropriate data collection and accessibility barriers in information, testing, and vaccination exposed them to greater

[2] CDC, “Health Equity,” https://www.cdc.gov/chronicdisease/healthequity/index.htm
[3] Rugaijah Yearby, Brietta Clark, and José F. Figueroa, “Structural Racism in Historical and Modern US Health Care Policy,” *Health Affairs* vol. 41:2, https://www.healthaffairs.org/doi/10.1377/hlthaff.2021.01466February 2022.
[4] Mary Finding, "COVID-19 Has Driven Racism and Violence Against Asian Americans," *Health Affairs,* April 12, 2022.
[5] CDC, “Demographic Trends of COVID-19 Cases and Deaths in the US Report,” updated May 27, 2022, https://covid.cdc.gov/covid-data-tracker/#demographics.
[6] Alexandria Macmadu et al., "COVID-19 and Mass Incarceration," *The Lancet* vol 5:11, October 9, 2020.

disparities in the public health response.[7] As recovery efforts continue, historically marginalized populations continue to face greater challenges due to racism and its intersection with other forms of discrimination.

The COVID-19 pandemic centered what many professionals, advocates, and communities have known for a very long time: racism threatens the livelihoods of millions by causing health inequity and must be addressed as a public health crisis. King County, alongside three states and several other municipalities, declared racism a public health crisis in June 2020, establishing core values, measurable goals, policy priorities, and budget allocations to support its commitment to being intentionally anti-racist and accountable to Black, Brown, and Indigenous People of Color (BIPOC).[8] As part of the Whole Community approach to all-hazard response, health inequity must be at the forefront of planning and response efforts to support resiliency in the face of public health crises.

Overview of PHSKC

PHSKC works to protect and improve the health and well-being of all people in King County. It measures this by seeking to increase the number of healthy years that people live and eliminate health disparities. It is one of the largest metropolitan health departments in the United States with 1,400 employees, 40 sites, and a biennial budget of $686 million. The department serves a resident population of nearly 2.2 million people in an environment of great complexity and scale, with 19 acute care hospitals and over 7,000 medical professionals. Over 100 languages are spoken in the jurisdiction, and King County is an international destination welcoming nearly 40 million visitors annually.[9]

Table 1: Washington State and King County Demographics

Race	Washington State 2019 Estimate	King County 2019 Estimate
Total population	7,614,893	2,252,782
One race	94.0%	93.7%
Two or more races	6.0%	6.3%
White	74.2%	62.1%
Black or African American	4.0%	6.7%
American Indian and Alaska Native (AIAN)	1.4%	0.7%
Asian	9.0%	18.9%

[7] The National Institute for Health Care Management, "Disability, Health Equity, and COVID-19," updated October 14, 2021, https://nihcm.org/publications/disability-health-equity#:~:text=Risk%20of%20Poor%20Outcomes%20from,other%20members%20of%20the%20population.
[8] King County, "Racism as a Public Health Crisis," June 11, 2020. https://kingcounty.gov/elected/executive/constantine/initiatives/racism-public-health-crisis.aspx#values
[9] PHSKC, "About Us," https://kingcounty.gov/depts/health/about-us.aspx

Race	Washington State 2019 Estimate	King County 2019 Estimate
Asian Indian	1.7%	4.3%
Chinese	2.1%	5.6%
Filipino	1.5%	2.1%
Japanese	0.5%	1.0%
Korean	0.9%	1.4%
Vietnamese	1.1%	2.3%
Other Asian	1.3%	2.3%
Native Hawaiian and Other Pacific Islander (NHOPI)	0.7%	0.7%
Native Hawaiian	0.1%	0.1%
Guamanian or Chamorro	0.2%	0.1%
Samoan	0.1%	0.3%
Other Pacific Islander	0.2%	0.3%
Other	4.8%	4.5%

PHSKC's mission is to eliminate health inequities and maximize opportunities for every person to achieve optimal health. PHSKC department functions are carried out through core prevention programs, environmental health programs, community-oriented personal health care services, emergency medical services, jail health services, public health preparedness programs, and community-based public health assessment and practices. The department operates these comprehensive set of public health services using eight divisions:

- **Cross-cutting services** includes the Assessment, Policy Development, and Evaluation (APDE) unit; Communications; Preparedness; Health Policy and Planning; and local government relations, including the King County Board of Health.

- **Prevention** serves the community by monitoring, investigating, controlling, and preventing transmission of over 60 notifiable communicable diseases. The division also includes the Medical Examiner's Office and Vital Statistics.

- **Chronic Disease and Injury Prevention** addresses some of the leading causes of chronic diseases and injuries and their social determinants through seven programs.

- **Community Health Services** provides direct services to King County's most vulnerable individuals through Parent-Child Health, Family Planning, Oral Health, Primary Care, and a variety of community partnership programs.
- **Environmental Health** focuses on prevention of disease through sanitation, safe food and water, proper disposal of wastes and toxins, and promoting safe and healthy environmental conditions throughout King County for the benefit of all residents and visitors.
- **Emergency Medical Services** operates a coordinated regional partnership providing a continuum of care for people in need of emergency medical care.
- **Jail Health Services** provides health services to detained individuals by assessing and stabilizing serious health problems with a focus on transitioning patients back to services in the community.
- **Administrative Services** includes finance, compliance, electronic health record and billing management, contracts, procurement, real estate services, and human resources.

There were many services and response efforts across the department that took place during COVID-19 and were organized by divisions. This AAR focuses on key activities largely coordinated through the incident management structure.

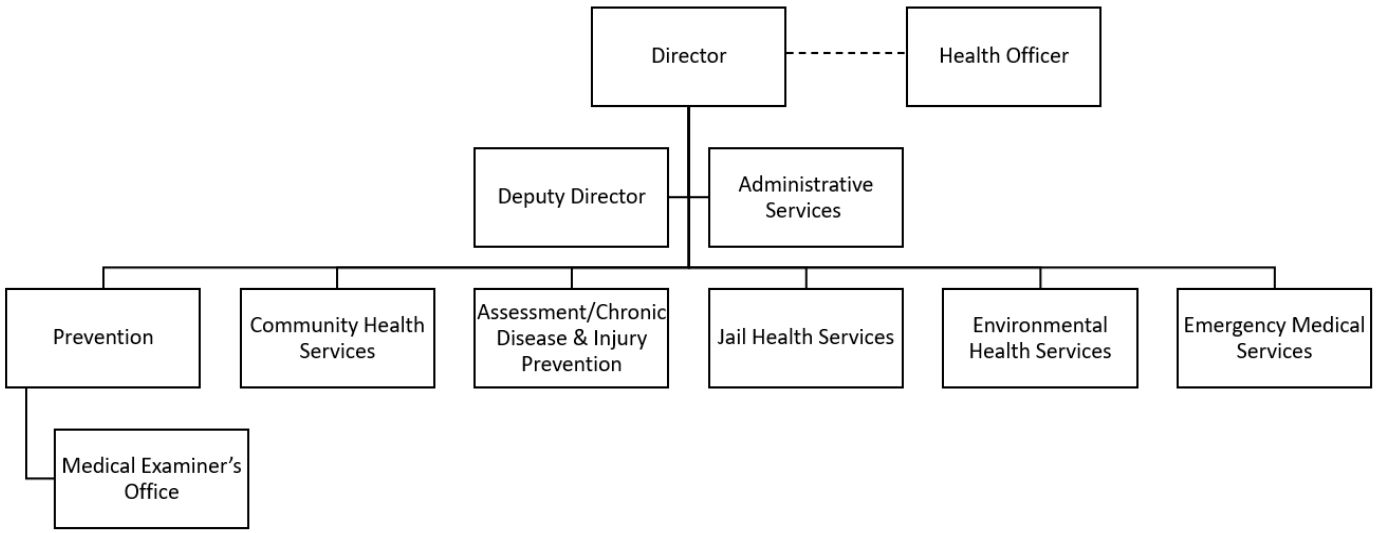


Figure 1: PHSKC Organizational Chart

PHSKC followed federal and state best practices to guide how it would respond to the COVID-19 pandemic as it grew in complexity and scope. In the federal and state systems used to organize emergency responses, Emergency Support Functions (ESFs) are used to group services and organize how they will be managed throughout a disaster. PHSKC's Health and Medical Area Command (HMAC), the department's incident management and coordination structure, was activated on January 21, 2020 to manage King County's ESF #8 (Public Health and Medical Services) using the incident command system (ICS). More details on the response

structure and the PHSKC teams and programs that supported emergency operations can be found the Health and Medical Area Command (HMAC) and Incident Management Structure section.

SCOPE OF THE COVID-19 AFTER-ACTION REPORT

This AAR focuses on the PHSKC response to the COVID-19 pandemic. The intent of this COVID-19 AAR is to comprehensively collect best practices and lessons learned from January 2020 – January 2022 to strengthen the capabilities of PHSKC. This AAR reflects the emerging practices that have benefitted the pandemic response, and which should be continued or enhanced for future pandemic responses. It is the hope of the authors of this document that this COVID-19 AAR will present recommendations for implementation to further improve future PHSKC emergency response efforts. This report is not inclusive of all work related to COVID-19 but is a sampling of activities collected from PHSCK.

METHODOLOGY

This COVID-19 AAR has been compiled using a mixed method data gathering approach. This included a comprehensive review of stakeholder interview notes and facilitated discussion summaries from PHSKC. Additionally, the data was reviewed and approved by the PHSKC AAR Project Management Team. All data was reviewed and analyzed by a third-party emergency management and public health consulting firm, Constant Associates (CONSTANT), contracted by Public Health - Seattle & King County to conduct a fair and independent review of response efforts and to develop this report. CONSTANT's team of emergency management and public health professionals aimed to conduct a transparent and honest analysis of the response and develop realistic and actionable improvement recommendations that align with HSEEP doctrine and other standard incident response evaluation principles and best practices.

PHSKC COLLECTED DATA

A variety of data was collected by PHSKC to ensure response teams, staff, and volunteers participated in the creation of the AAR. The following data types were the primary sources used to create this report.

Interviews

One hundred eleven stakeholder interviews were conducted by PHSKC to review major events that determined the critical areas for improvement and strengths related to the response efforts. Interviewees were identified by PHSKC as key stakeholders and teams during the COVID-19 response period covered by this AAR. All interviews were conducted in 2021. The first series of interviews were with PHSKC management, leadership, and select response area leads. The second set of interviews were with a broader range of response area leads. These interviews allowed participants to outline critical preparedness activities and describe self-identified response strengths, areas for improvement, and recommendations for future implementation. Transcripts of these interviews were analyzed by CONSTANT for the purpose of this AAR.

Facilitated Discussions

PHSKC staff facilitated 48 discussions with each of the response teams within the organization. These sessions are often called "hotwashes." Through these discussions, participants detailed strengths, areas for improvement, and recommendations based on their experiences during the response. The sessions allowed

teams to express their perspectives and opinions, while fostering awareness of the best practices implemented and challenges faced during different phases of the COVID-19 response. Summary reports of these meetings were compiled by PHSKC and analyzed by CONSTANT for inclusion in this report.

Surveys

Two surveys provided a forum for respondents to contribute to the AAR and enabled CONSTANT to identify key issues and themes. An electronic survey to capture PHSKC staff perspectives regardless of their response role was developed and distributed widely by PHSKC. CONSTANT conducted an analysis of the 414 responses received for the purpose of this AAR. A full summary report is included in the appendices and data from the survey informed the construction of emerging and common themes. A second survey was created by PHSKC to solicit feedback from its Public Health Reserve Corps (PHRC) volunteers. This survey was launched from May – June 2021. A summary report of the 462 responses was created by PHSKC and the data was reviewed and incorporated where appropriate by CONSTANT.

Document Review

An extensive library of documents related to the COVID-19 response was compiled and managed by PHSKC. CONSTANT reviewed the collected documentation and resources to identify supplemental information to complement interview, facilitated discussion, and survey findings. Additionally, CONSTANT researched online and publicly available references, as needed. The documents consisted of 15 reports related to lessons learned and partner AARs, 25 HMAC Incident Action Plans, Situation Reports, and messages, and 9 blogs and media articles detailing PHSKC response efforts. A list of the documents reviewed and included within this AAR can be found in the references list within the appendices.

Facilitated Feedback Sessions With Partners (i.e., Townhalls)

To ensure community partners were also offered an opportunity to contribute their perspectives, PHSKC and CONSTANT worked together to identify groups to invite to facilitated feedback sessions (also called “townhalls”). CONSTANT hosted four of these sessions with 31 participants attending. These discussions served as an opportunity to elicit input from community-based organizations, faith-based organizations, governmental and tribal partners, healthcare providers, and other key partners. Participants provided their perspectives on strengths, areas for improvements, and recommendations based on their experiences during the COVID-19 pandemic response. CONSTANT then incorporated the findings into the AAR. Community and Faith-Based Organizations were provided incentives for participating in sessions. The sessions were held in English with Communication Access Real-time Translation (CART) and live interpretation for multiple languages.

Table 2: PHSKC COVID-19 Townhall Participant Details

TOWNHALL PARTICIPANT DETAILS	COUNTS (n=31)
TYPE OF ORGANIZATION	
Community Based Organization	8
Other (e.g., tribal and/or healthcare coalitions, fire departments, laboratories, mobility management)	7
Other Healthcare Partner	7
Faith Based Organizations	2
Hospitals	2
Residential Facilities (Long Term Care, Skilled Nursing)	2
Philanthropic Partner	1
Public Health - Seattle & King County	1
Tribe or Tribal Organization	1
TYPE OF RESPONSE EFFORTS **could include more than one response type per attendee*	
Vaccination (includes mobile and mass vaccination)	21
Testing	17
Public information sharing	16
PPE Distribution	12
Food Distribution/Care Coordination	9
Other (e.g., response planning for congregation, maintaining healthcare situational awareness, relationship building,	8
Healthcare delivery	8
Contact tracing	7
Isolation and Quarantine	5
Transportation	2

Organization of the Report

The report is organized to include an Incident Overview, Health and Medical Area Command (HMAC) and Incident Management Structure summary, and Analysis of Key Findings related to response efforts. Given the length and breadth of the pandemic and the unprecedented scope of the response efforts for PHSKC, **this report is not meant to be comprehensive of all activities conducted in response to the pandemic**. Instead, this report is meant to focus on major strengths and areas for improvement noted by stakeholders to identify opportunities for impact on future emergency responses.

The major findings make up the core content of the report and are found in the Analysis of Findings Section. The following focus areas are intended to group the findings by similar topics and, to the extent possible, are in chronological order by when related efforts started during the pandemic.

- Incident Management
- Epidemiological Investigation and Surveillance
- Equity and Community Partnerships
- Public Information
- Healthcare System Support
- Isolation and Quarantine
- Resource Management
- Public Information Contact Center (PICC)
- Community-Based Initiatives
- Testing
- Fatality Management
- Vaccination
- PHSKC Internal Operations
- Responders Safety and Health

Each focus area links to at least one CDC Public Health Emergency Preparedness and Response (PHEP) capability which serves as a framework to evaluate the ability of public health preparedness programs to prepare for, respond to, and recover from public health emergencies such as COVID-19. Within each focus area the findings are presented as strengths or areas for improvement. However, throughout the public health

response to the pandemic, many findings were not strictly strengths or areas for improvement, but a combination of both. Findings were recorded as mixed where stakeholders shared information that was positive but also expressed there were challenges and room for growth. The duration of the response also led to the resolution of some areas of improvement as PHSKC worked to continuously improve.

To show commonalities throughout the findings, this report uses recurring themes. These themes follow survey findings conducted with PHSKC staff. Respondents were asked to identify up to three key strengths of their teams/work areas and three challenging areas their teams endured in relation to the PHSKC response and recovery efforts. Respondents overwhelmingly chose the organization's flexibility/adaptability, teamwork, equity, and coordination/collaboration as strengths.[10] The key challenges noted were staff and team capacity, hiring and onboarding, and unclear processes. Some options, such as team coordination and collaboration, were identified by a notable number of respondents as both a strength and a challenge. The identified themes include:

Table 3: PHSKC COVID-19 Responder Survey Themes

STRENGTHS	AREAS FOR IMPROVEMENT
Flexibility/Adaptability	Lack of Flexibility
Teamwork	Team or Staffing Capacity
Equity	Equity Concerns
Coordination/Collaboration	Lack of Coordination/Collaboration
Communication	Lack of Communication
Relationship Building	Needed Relationship Building *(not an option in the survey)*
Standardization of Processes	Unclear Processes
Quality Assurance and Control	Quality Assurance and Control Concerns
Information Technology	Information Technology Concerns
Systems or Infrastructure	Lack of Systems or Infrastructure *(not an option in the survey)*
Safety or Wellbeing *(not an option in the survey)*	Safety or Wellbeing Concerns
	Unpredictable Funding
	Hiring and Onboarding Concerns

Where there were instances that multiple findings within a topic area were related to the same theme, an

[10] COVID-19 PHSKC Staff Surveys (2022)

additional title was added to differentiate each finding. These are found with an italicized header.

STATE AND LOCAL INCIDENT OVERVIEW

The first case of novel coronavirus in Washington was identified on January 21, 2020, in Snohomish County, WA. After returning from a trip to Wuhan, China, the patient developed symptoms and sought care at a medical facility within the state. As the first confirmed case of COVID-19 in the United States, the state of Washington immediately moved into the spotlight for COVID-19 coordination efforts early in 2020.

PHSKC activated its emergency operations structure, HMAC, at Level 2 - Partial Activation on January 21, 2020. The next day, the state of Washington activated its State Emergency Operation Center (SEOC) [11] to conduct emergency operations and support local jurisdictions responding to COVID-19 cases. PHSKC HMAC activation was elevated to a Level 1 – Full Activation to manage emergency operations on January 24, 2020. At the state level, efforts to contain the disease in January to mid-February 2020 continued by encouraging stay-at-home orders, PPE procurement, and increasing response funding. At the local level, PHSKC began to disseminate key messages and respond to inquiries, including through its Public Health Insider blog and a dedicated COVID-19 website. The department also provided guidance to healthcare providers on diagnosis, management, and infection control measures, conducted surveillance for detection of disease, developed materials for outreach to community members and partners, and closely coordinated with the CDC, DOH, and other local health jurisdictions on suspected cases and messages.[12] In this initial phase of COVID-19 response, PHSKC worked with community leaders to address COVID-19 misinformation, stigma, and racism surrounding Chinese and broader Asian American communities, holding a press conference on February 7, 2020 and releasing outreach materials to make clear that viruses do not discriminate and neither should the King County community.[13]

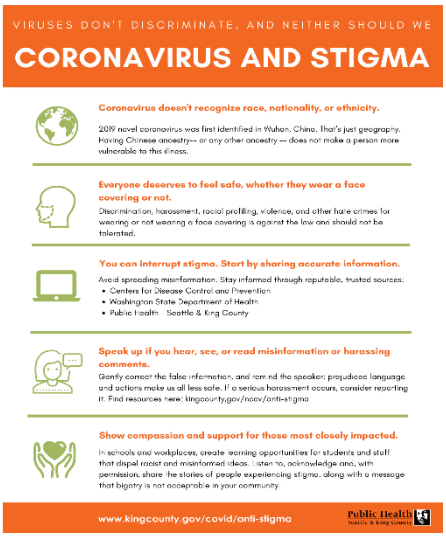


Image 2: Community outreach materials

[11] State Emergency Operations Center. Situation Report. November 5, 2020. https://lewiscountywa.gov/media/documents/SEOC_COVID19_SitRep_110520-181.pdf
[12] PHSKC. HMAC Incident Action Plan #01
[13] PHSKC. 02.07.2020. Public Health Insider. Addressing Stigma United Response to Coronavirus. Accessed 5.31.22. https://publichealthinsider.com/2020/02/07/addressing-stigma-united-response-to-coronavirus/

PHSKC confirmed the first known case of COVID-19 in King County on February 27, 2020. Just one day later, on February 28, 2020, the first recognized COVID-19 death in the United States was recorded in King County, though postmortem testing would demonstrate that undercounted deaths and lack of testing contributed to delays in reporting and that the first COVID-19 death in the United States was actually in January. On February 29, 2020, the CDC reported this first COVID-19 death in the United States and described additional presumptive positive COVID-19 cases in King County with two hospitalized patients originating from a suspected outbreak in a Long-Term Care Facility (LTCF), Life Care, where more than 50 individuals associated with Life Care were ill with respiratory symptoms.[14]

Unable to track the source of infection, CDC officials stated that circumstances now suggested person-to-person spread in the community, including in the LTCF. Subsequently, King County activated its Emergency Operations Center (EOC), and Governor Jay Inslee issued a State of Emergency, facilitating the allowance of additional local and state resources to be utilized to respond to the outbreak. Through the end of February and into March of 2020, Life Care continued to be a focus of PHSKC and state cases due to the increased risk to residents with underlying health conditions.[15] Due to the magnitude of the outbreak, collaboration with federal officials was also necessary to support an overwhelmed local infrastructure and augment clinical staffing, particularly because almost a third of Life Care staff tested positive for the virus. CDC staff were deployed to Life Care within a couple of days of the known outbreak to perform evaluations, examine response activities, and measure supply needs. A U.S. Department of Health and Human Services (HHS) strike team arrived the following week, completing COVID-19 testing for all Life Care residents. As the first known outbreak of COVID-19 in the U.S., the Life Care facility outbreak was high profile, garnering international attention, and its response greatly scrutinized. In addition to the support from the CDC and HHS, PHSKC worked with Life Care to treat ill patients while protecting those unaffected.

This LTCF outbreak was the first of many reported in the United States that led to multiple deaths in this vulnerable population.[16] Thirty-nine residents of this nursing home died in a four-week span.[17] During the month of March, 51% of all COVID-19 cases investigated by PHSKC were exposed within a healthcare setting, including 33% of all cases being linked to a LTCF outbreak. Through September 1, 2020, more than 90% of those who died from COVID-19 in King County were over age 60.[18]

On the local front, by March 1, 2020, a King County Proclamation of Emergency was signed that delineated PHSKC's role as lead agency for King County's COVID-19 response, waived procurement protocols, and authorized overtime for hourly county employees. PHSKC also began to add workers to their team in an effort

[14] CDC. 2.29.20. Washington State Report First COVID-19 Death. Accessed 5.31.22. https://www.cdc.gov/media/releases/2020/s0229-COVID-19-first-death.html
[15] Weise, Harmon and Fink, New York Times, *Why Washington State? How Did It Start? Questions Answered on the U.S. Coronavirus Outbreak,* March 4, 2020
[16] CDC Newsroom, *Washington State Report First COVID-19 Death Media Statement,* February 29, 2020, https://www.cdc.gov/media/releases/2020/s0229-COVID-19-first-death.html
[17] History.com, *First confirmed case of COVID-19 found in U.S.,* Accessed May 5, 2021, https://www.history.com/this-day-in-history/first-confirmed-case-of-coronavirus-found-in-us-washington-state
[18] PHSKC. 11.23.20. Summary Report on Outbreaks and Exposure Settings for COVID-19 Cases in King County, WA. Accessed 5.31.22 https://kingcounty.gov/depts/health/covid-19/data/~/media/depts/health/communicable-diseases/documents/C19/report-outbreaks-exposure-settings-covid-19.ashx

to combat the effects of COVID-19 on the county, and soon after, on March 3, 2020, activated and staffed a contact center to provide information to the community.[19] A critical focus during this initial response was also disease investigation and surveillance, which included conducting surveillance for community level transmission and monitoring the impact of disease on King County in terms of containment, community level indicators, and focused case and cluster investigation.[20] And while contact tracing would initially focus on priority cases for LTCFs, healthcare workers, schools, and institutions, this would expand throughout the remainder of March and into the month of April in coordination with partners. Such activities made it possible for PHSKC to collect and share surveillance data, monitor trends, and inform modifications to non-pharmaceutical interventions.

Throughout the month of March 2020, more information was also available regarding the potential impact of COVID-19 on different populations. Other populations identified by PHSKC to be at higher risk for severe illness from COVID-19 included people 60 and older, people with underlying health conditions, people who are immunocompromised, and people who are pregnant. Local health officials recommended that those vulnerable to severe illness from COVID-19 take concerted steps to reduce their risk of exposure.[21] PHSKC created a cross-sector forum for representatives from community, business, and government sectors to contribute to helping to slow the spread of COVID-19, forming an advisory group initially called the Pandemic Community Advisory Group (PCAG). An initial meeting of the PCAG was held on March 5, 2020.[22] The PCAG initially focused on how representatives could share COVID-19-related information and messages internally, within their sectors, and to the public, how organizations could join PHSKC in responding to misinformation and stigma, and how PHSKC could work with these sectors to inform each other of opportunities, successes, and barriers to implementing recommended measures. The discussions held, as well as the mission of the

[19] King County. 3.01.20. Proclamation of Emergency. Accessed 5.31.22 https://kingcounty.gov/~/media/operations/policies/documents/PHL104Proclamation_of_Emergency.ashx?la=en
[20] HMAC COVID-19 IAP #18
[21] King County. 3.4.20. Local Health Officials Announce New Recommendations to Reduce Risk of Spread of COVID-19. Accessed 5.31.22. https://kingcounty.gov/depts/health/news/2020/March/4-covid-recommendations.aspx
[22] King County. 3.5.20. King County Pandemic Advisory Group. Access 6.14.22. https://kingcounty.gov/depts/health/covid-19/community-faith-organizations/~/media/depts/health/communicable-diseases/documents/C19/parcag/PARCAG-2020-Mar-5-minutes.ashx

PCAG, would evolve over time, covering topics such as mental and behavioral health, COVID-19 data tools,

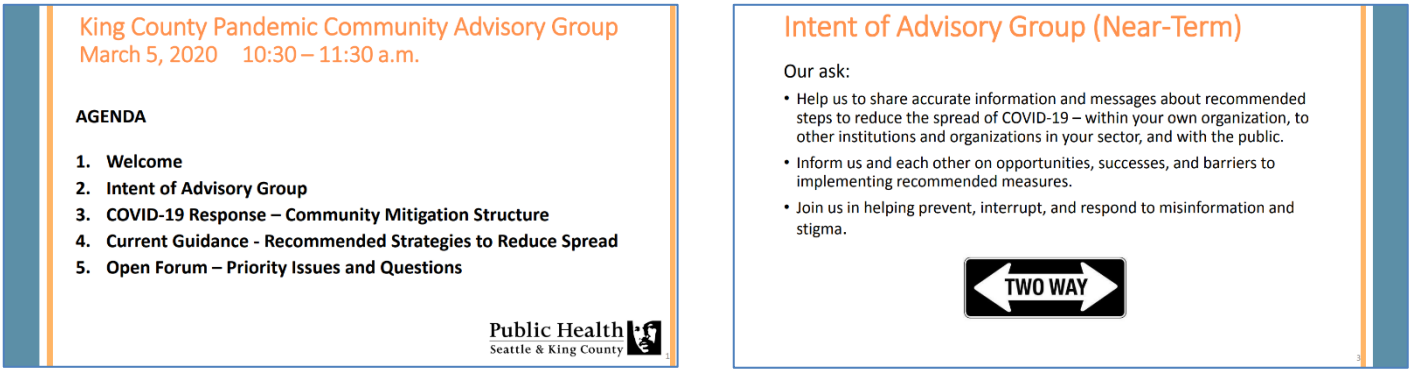


Image 3: PCAG slide examples

pro-equity strategies and equity impacts, and food security.

The initial COVID-19 outbreak was not confined to merely the Life Care facility, however. Between March 1, 2020 and March 15, 2020, when social distancing was advised in King County and bars, restaurants, events, and other gatherings were ceased for an initial two-week period, the total COVID-19 case count grew to 420 and the total number of recorded deaths was 37.[23] During this critical period in response, actions taken across the state and local levels included: area colleges moving to virtual instruction; King County opening isolation and quarantine sites; King County, United Way of King County, and Seattle opening a 'supply store' to pool together resources and funnel in and out bulk purchases; large events over 250 people being suspended; and schools closing in King County through April 24, 2020 (initially). In addition to the LTCF outbreaks, tribal communities were affected early on in this pandemic. The state of Washington is home to 29 federally recognized Indian Tribes. DOH, in coordination with a tribally driven non-profit organization, the American Indian Health Commission (AIHC), worked together early in the pandemic on behalf of these tribes to mitigate the risk to their tribal communities.[24] As PHSKC noted when they announced their Principles for Equitable Vaccine Delivery in April 2021, the impact was also felt in several high-risk communities because of historical inequities, government distrust, and existing barriers to access.

Other communities disproportionately impacted by COVID-19 both during the pandemic's early stages and throughout as attributable to structural racism and social and economic vulnerabilities were service workers, immigrants, BIPOC communities, communities with limited access to health services, people without housing, and people with disabilities and other access and functional needs.

Some examples of how PHSKC strove to serve communities disproportionately impacted by COVID-19 during initial response in March and April 2020, are described in the following paragraphs. Many of these efforts

[23] King County. 3.15.20. Executive Constantine and King County Health Officer Announce New Orders to Limit Spread of COVID-19. Accessed 5.31.22. https://kingcounty.gov/elected/executive/constantine/news/release/2020/March/15-COVID-order.aspx
[24] Lou Schmitz, American Indian Health Commission for Washington State, *AIHC Tribal Communicable Disease Emergency Reponses Planning Project 2019-2020*, March 11, 2020

were stood up during initial response and continued to be carried out for over two years and/or are still in place at the time of writing of this report (June 2022).

- PHSKC, the broader King County government, and the State shared information and provide services to people experiencing homelessness such as convening information calls with homeless and shelter services providers, providing guidance on sanitation and infection control to homeless services sites, including through site visits, and deploying clinical strike teams.

- Public information was tailored to reach the whole community with PHSKC's Language Access Team translating COVID-19 materials and resources into 40 languages.[25] As of April 9, 2020, King County COVID-19 fact sheets were made available in 21 languages, and COVID-19 "Stay Home, Stay Healthy" Public Service Announcements on YouTube were available in 12 languages.[26]

- Food and shelter needs were addressed by efforts such as deploying extra drivers and vehicles for paratransit and Community Access Transportation services to food banks, launching an Individual Food Assistance Program and a King County Regional Donations Connector, suspending WorkFirst Participation requirements for Temporary Assistance for Needy Families (TANF), and expanding eligibility for the Family Emergency Assistance Program (FEAP).

- A statewide residential eviction moratorium was enacted, and COVID-19 emergency shelter and housing response was expanded.[27]

- Individuals who were incarcerated were provided single bunks in correctional facilities and steps were taken to safely decrease the number of adults in custody.[28]

- PHSKC sought to promote community emotional health and resilience during both COVID-19 and the public health crisis of racism by creating a Community Well-Being Group focusing on the health and well-being of BIPOC communities and convening a task force on older adults and people with disabilities to inform COVID-19 guidelines and decisions.[29]

- As mentioned previously, the PCAG (which would re-establish its mission in September 2020 as described below) as well as an Equity Response Team (ERT) were stood up to address the

[25] PHSKC. 4.10.20. How We are Monitoring COVID-19 Preliminary Data by Race, Ethnicity. Accessed 5.31.22. https://publichealthinsider.com/2020/04/10/how-we-are-monitoring-covid-19-preliminary-data-by-race-ethnicity/
[26] PHSKC. 4.9.2020. King County Pandemic Community Advisory Group. Access 6.15.22. https://kingcounty.gov/depts/health/covid-19/community-faith-organizations/~/media/depts/health/communicable-diseases/documents/C19/parcag/PARCAG-2020-April-9-minutes.ashx.
[27] King County. 3.25.20. King County and Seattle Expand COVID-19 Emergency Shelter and Housing Response. Accessed 5.31.22. https://kingcounty.gov/elected/executive/constantine/news/release/2020/March/25-kingcounty-seattle-covid-19-shelter.aspx
[28] King County. 3.24.20. Quickly, Safely, Reducing the Jail Population so Staff can Ensure the Health of Everyone in Correctional Facilities. Accessed 5.31.22. https://kingcounty.gov/elected/executive/constantine/news/release/2020/March/24-jail-population.aspx
[29] PHSKC. May 2020. Media Release: Protecting Rights of People with Disabilities as Face-Covering Directive Goes into Effect Monday. Accessed 5.31.22. https://publichealthinsider.com/2020/05/15/media-release-protecting-rights-of-people-with-disabilities-as-face-covering-directive-goes-into-effect-monday/

disproportionate negative impacts of COVID-19 for the various communities considered to be at greater risk. The purpose of the ERT was for PHSKC to internally develop and provide recommendations and actionable information for PHSKC leadership to support communities most impacted by inequities, and communities experiencing hate and bias.[30]

Despite these efforts, several concerning trends emerged within the King County region and/or the broader U.S. including:[31]

- A reawakening of anti-Chinese and anti-Asian American rhetoric resulting in racism, and at times, harassment and violence being experienced by the Asian-American communities.
- COVID-19 mitigation efforts unintentionally increasing the number of residents who were unemployed, furloughed, and/or required food, utility, housing, and health care access assistance.[32]
- BIPOC communities disproportionately experiencing loss of employment, and subsequently in most cases, loss of health care coverage. This exacerbated disparities in financial and non-financial burdens that were already preventing BIPOC populations from receiving health care services prior to the pandemic.[33]
- Summary data released on May 1, 2020, showing that rates of confirmed COVID-19 cases in King County for Hispanics, Native Hawaiians, and Pacific Islanders being four times that of Whites and the rate of confirmed cases for Blacks being double that of Whites. Disparities were also present in COVID-19-related hospitalizations.
- Increased death rates in 2020 compared to prior years being observed among communities of color reflected exacerbated inequities.[34]
- Essential workers filling critical jobs being vulnerable to infection and unable to telecommute.

[30] COVID-19 AAR Summary_ERT
[31] PHSKC. 5.1.21. Making Meaning of the COVID-19 Race and Ethnicity Data: A Conversation with Our Health Officer and Our Equity Director. Accessed 5.31.22. https://publichealthinsider.com/2020/05/01/making-meaning-of-the-covid-19-race-and-ethnicity-data-a-conversation-with-our-health-officer-and-our-equity-officer/
[32] PHSKC. 7.15.20. Behavioral Health Needs and Services in King County, WA: March - May 2020. Accessed 5.31.22. https://kingcounty.gov/depts/health/covid-19/data/~/media/depts/health/communicable-diseases/documents/C19/report-behavioral-health-needs.ashx
[33] PHSKC. 7.14.21. Health Care Access in King County, WA March 2020 – June 2021. Accessed 5.31.22. https://kingcounty.gov/depts/health/~/media/depts/health/communicable-diseases/documents/C19/health-care-access-king-county.ashx
[34] PHSKC. 2.3.21. Changes in Death Rates During the COVID-19 Pandemic in King County, WA January 1 – December 31, 2020. Accessed 5.31.22. https://kingcounty.gov/depts/health/covid-19/data/~/media/depts/health/communicable-diseases/documents/C19/changes-in-death-rates-report.ashx

- Communities of colors being less likely to have available testing and lacking access to healthcare and available resources and more likely to be living in multigenerational households where quarantine and isolation may be difficult.
- Undocumented individuals being unable to access federal programs such as stimulus checks.
- Case rates varying widely by geography, with wide swaths of South King County, areas of south Seattle, and pockets in the far north and east of King County experiencing positivity rates that are five times higher than in other areas.

From the end of March 2020 through June 2020, PHSKC and its broader partners continued to expand the response to COVID-19. This included setting up the first COVID-19 testing site in Shoreline, launching a Stand Together, Stay Apart campaign on March 25, 2020 in conjunction with the State's Stay Home, Stay Healthy Order and launching a public data dashboard. PHSKC recommended, strongly directed, and then finally issued a health directive for masks to be worn in public. Once available, PHSKC distributed COVID-19 tests locally and later made tests available to individuals who had only mild symptoms. PHSKC, along with Emergency Management, provided supplies (PPE, hand sanitizer, etc.) to both Tier 1 and Tier 2 settings in alignment with DOH's Prioritization Guideline for Allocation of PPE[35] and also ensured coordination of regional medical surge operations.

Image 4: Stand Together, Stay Apart campaign images

By June 5, 2020, King County was approved for a modified version of Phase 1 for the State's Safe Start Plan, allowing businesses, recreational opportunities, and social activities to gradually reopen, which would be followed by Phase 2 on June 19, 2020, prompting restaurant and retail reopening and the return of small

[35] DOH. 9.27.2021. Prioritization Guideline for Allocation of PPE. Accessed 6.14.22. https://doh.wa.gov/sites/default/files/2022-02/PPEPrioritizationofAllocation.pdf.

gatherings. As state and local officials continued to expand COVID-19 response throughout the summer of 2020 by opening additional testing sites and consistently communicating continued social distancing, PHSKC and the broader County also continued to take actions to equitably serve its community. A King County-wide declaration of racism as a public health crisis was made on June 11, 2020. By September 20, 2020, the PCAG was reestablished as the King County Pandemic and Racism Community Advisory Group (PARCAG) and PARCAG's mission was modified to "identify, inspire, and mobilize bold solutions in response to the urgent, interconnected crises of COVID-19 and systemic racism." PHSKC in partnership with King County's Office of Equity and Social Justice (OESJ) also launched several new data dashboards and tracking systems including one to delineate COVID-19 impacts on individuals experiencing homelessness, a Food Finder to encourage support of local farms, and a behavioral health dashboard to evaluate impacts on social, economic, and overall health in King County.

In addition to the activities outlined thus far, additional steps taken by PHSKC to serve its community included distributing masks to Community Based Organizations (CBOs), launching a COVID-19 Health Ambassador Program, and dedicating $41M for rental assistance and eviction prevention.[36] One substantial focus of the summer of 2020 was back-to-school planning, and it was announced on July 22, 2020, that King County school districts would begin with remote learning in the fall. That same week, on July 24, 2020, PHSKC had the highest seven-day average of new COVID-19 cases since the beginning of April.[37] PHSKC was better positioned to perform case investigations during this surge in comparison to early response, however, with a team of approximately 61 members who were able to investigate over 500 COVID-19 cases per week. Though the rate of new daily COVID-19 infections would generally decline from this period up until early September 2020, this would be short-lived as rates of new daily COVID-19 infections then increased from early September 2020

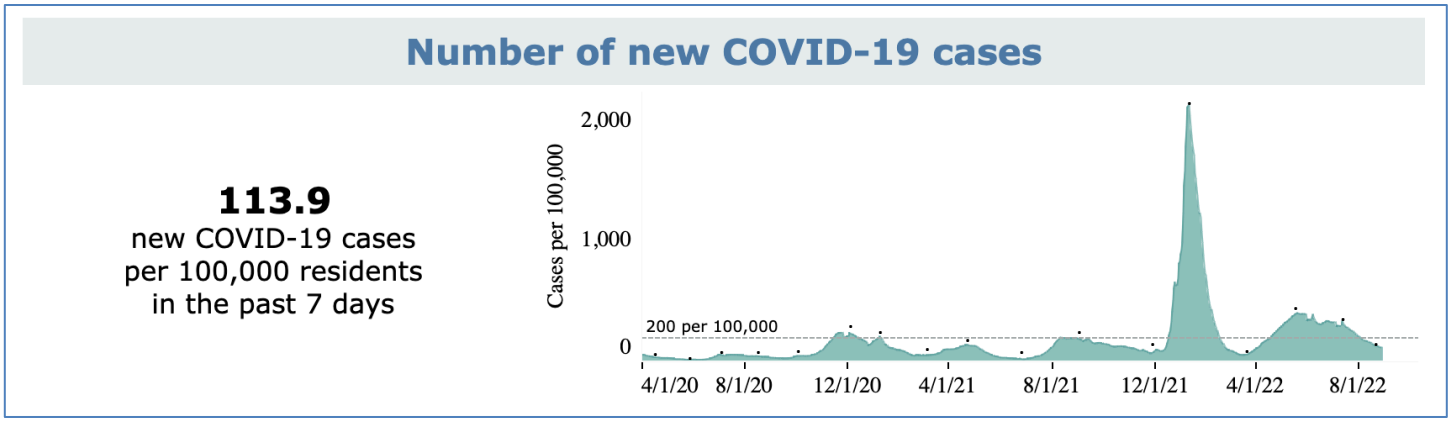


Figure 2: Number of New COVID-19 Cases in King County from 4/1/2020 – 8/1/2022. Accessed Sept. 1, 2022 https://kingcounty.gov/depts/health/covid-19/data/community-level.aspx

[36] Department of Community and Health Services. 8.5.20. Former Metro Drivers Take a New Role as King County Health Ambassadors to Slow the Spread of COVID-19. Accessed 5.31.22. https://dchsblog.com/2020/08/05/former-metro-drivers-take-on-new-role-as-king-county-health-ambassadors-to-slow-the-spread-of-covid-19/; King County. 8.20.20. King County Dedicates $41 Million to COVID-19 related Rental Assistance and Eviction Prevention. Accessed 5.31.22. https://kingcounty.gov/elected/executive/constantine/news/release/2020/August/20-rental-assistance.aspx

[37] PHSKC. 7.24.20. Video: July 24, 2020 Update on COVID-19 in King County with Dr. Jeff Duchin. Accessed 5.31.22. https://publichealthinsider.com/2020/07/24/video-july-24-2020-update-on-covid-19-in-king-county-with-dr-jeff-duchin/

until mid-December 2020 for King County and the broader U.S. Impacts experienced during this time included Washington rolling back its phased reopening plan by enacting a four-week statewide set of restrictions beginning on November 16, 2020.

Despite this increase of new daily COVID-19 cases in the fall and winter of 2020, associated with holiday gatherings and colder weather, progress was being made on the vaccination front. On December 14, 2020, Washington's COVID-19 vaccination program began, following the vaccine's Emergency Use Authorization. Healthcare workers (including community health workers), first responders, people who live or work in long-term care facilities, and all other workers in health settings at high risk of exposure to COVID-19 were the first groups eligible for vaccinations. The first doses of the vaccine arrived in King County soon after, on December 16, 2020.[38]

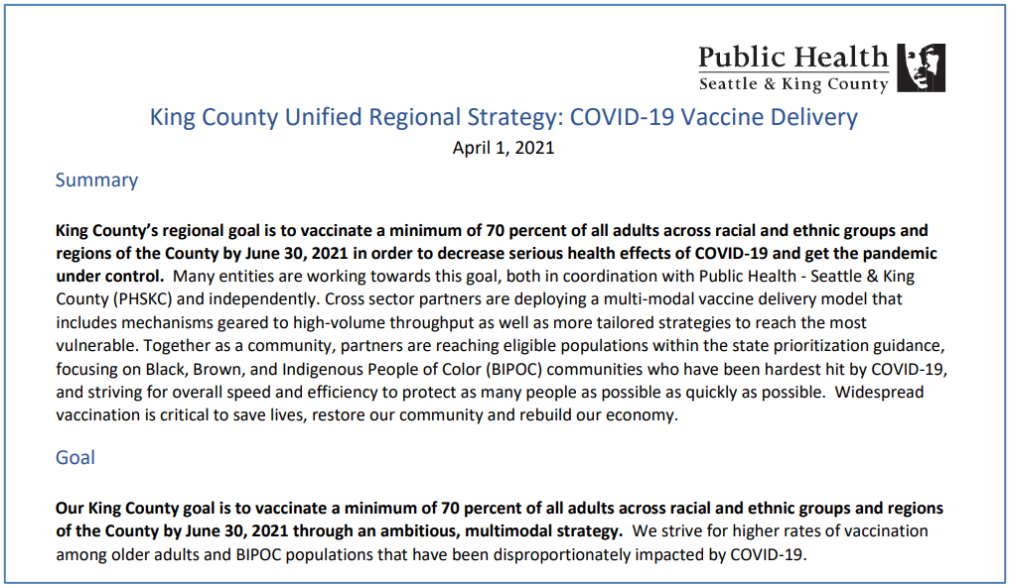
On January 8, 2021, King County announced that it would be allocating $7M for the creation of high-volume community vaccination sites and mobile teams to equitably vaccinate residents, complementing vaccinations provided through the healthcare system and pharmacies.[39] By January 18, 2021, eligibility was expanded to include people ages 65 years of age and older as well as individuals aged 50 years of age or older who lived in a multigenerational household.[40]

Extensive challenges managing the vaccination tiers and the associated distribution of the vaccine emerged in Washington and throughout the country. As demand for the vaccine exceeded supply well into the spring of 2021 and guidance from both federal and state authorities was constantly changing, county health officials had to rapidly pivot and decide whether to adopt new recommendations or pursue their original vaccination plans. Subsequently, the public expressed frustration as not only were they impacted by the changing guidance relating to vaccination tiers, but they also faced challenges registering for vaccines and getting appointments. As vaccination eligibility initially increased, PHSKC was frank about limited supply of the vaccine both nationally and locally preventing access to the COVID-19 vaccine, even to those eligible.[41] By early February of 2021, however, PHSKC set up two high-volume vaccination sites, one at the accesso ShoWare Center in Kent and one at the General Services Administration Complex in Auburn, with more planned. These sites were designed to serve those who may face barriers to accessing the COVID-19 vaccine through traditional healthcare systems, including older adults (ages 75+) in south King County.[42]

As vaccine tiers opened, King County established a goal to vaccinate a minimum of 70 percent of all eligible

[38] PHSKC. 12.16.20. First Doses of Vaccine Arrive in King County. Accessed 5.31.22. https://publichealthinsider.com/2020/12/16/first-doses-of-vaccine-arrive-in-king-county/
[39] PHSKC. 1.8.21. King County Announces New Funding for Community Vaccination Efforts. Accessed 5.31.22. https://publichealthinsider.com/2021/01/08/king-county-announces-new-funding-for-community-vaccination-efforts/
[40] Washington State Department of Health. February 10, 2021. COVID-19 Vaccination Coverage by Race and Ethnicity and Age in Washington State. https://doh.wa.gov/sites/default/files/2022-03/348-791-COVID19VaccinationCoverageRaceEthnicityAgeWAState.pdf?uid=6282e74a61b25
[41] PHSKC. 1.18.21. Expanding Vaccination To Older Adults In King County. Accessed 5.31.22. https://publichealthinsider.com/2021/01/18/expanding-vaccination-to-older-adults-in-king-county/
[42] PHSKC. 1.29.21. King County Opens Covid-19 Vaccination Sites In Kent And Auburn To Provide Access For Vulnerable Older Adults And Their Caretakers. Accessed 5.31.22. https://publichealthinsider.com/2021/01/29/king-county-opens-covid-19-vaccination-sites-in-kent-and-auburn-to-provide-access-for-vulnerable-older-adults-and-their-caretakers/

adults equitably, efficiently, and quickly across all racial and ethnic groups and regions of the county by June 30, 2021.[43] This included creating and publishing the King County Unified Regional Strategy: COVID-19 Vaccine Delivery and the Principles for Equitable Vaccine Delivery in April 2021.



Public Health
Seattle & King County

King County Unified Regional Strategy: COVID-19 Vaccine Delivery

April 1, 2021

Summary

King County's regional goal is to vaccinate a minimum of 70 percent of all adults across racial and ethnic groups and regions of the County by June 30, 2021 in order to decrease serious health effects of COVID-19 and get the pandemic under control. Many entities are working towards this goal, both in coordination with Public Health - Seattle & King County (PHSKC) and independently. Cross sector partners are deploying a multi-modal vaccine delivery model that includes mechanisms geared to high-volume throughput as well as more tailored strategies to reach the most vulnerable. Together as a community, partners are reaching eligible populations within the state prioritization guidance, focusing on Black, Brown, and Indigenous People of Color (BIPOC) communities who have been hardest hit by COVID-19, and striving for overall speed and efficiency to protect as many people as possible as quickly as possible. Widespread vaccination is critical to save lives, restore our community and rebuild our economy.

Goal

Our King County goal is to vaccinate a minimum of 70 percent of all adults across racial and ethnic groups and regions of the County by June 30, 2021 through an ambitious, multimodal strategy. We strive for higher rates of vaccination among older adults and BIPOC populations that have been disproportionately impacted by COVID-19.

Image 5: King County Unified Regional Strategy

Starting April 15, 2021, all people in Washington ages 16 and older became eligible for the COVID-19 vaccine. Grounding principles to adopt an intentional equity driven COVID-19 vaccination strategy included removing barriers to deter access, creating an inclusive process, and being intentionally anti-racist and accountable to BIPOC communities, something that PHSKC intended to apply across a multi-modal vaccine delivery approach that included hosting a series of community vaccination events with non-profit organizations with strong community ties. PHSKC and transit partners also prioritized transportation options to facilitate access to vaccination sites including Metro, Via to Transit, Access paratransit, and more.[44]

On April 19, 2021, PHSKC announced the launch of a new vaccination program for homebound populations, where mobile teams would deliver vaccines to residents at their homes.[45] By April 29, 2021, PHSKC developed a county vaccination partnership with multiple health care institutions and was advertising COVID-19 walk-in vaccinations at sites in Kent, Auburn, Seattle, Renton, Redmond, and Shoreline, speaking to the ease of COVID-19 vaccine supply issues where demand no longer exceeded supply.[46] The Pfizer vaccine then became available for children ages 12-15 on May 13, 2021. By June 15, 2021, 70% of King County's residents ages 16+

[43] PHSKC Principles for Equitable Vaccine Delivery.
[44] PHSKC. 2.23.21. Take Transit To Take Your Shot: Here Are Ways To Get To Your Vaccination Appointment. Accessed 5.31.22. https://publichealthinsider.com/2021/02/24/take-transit-to-take-your-shot-here-are-ways-to-get-to-your-vaccination-appointment/
[45] PHSKC. 4.19.21. Public Health's In-Home Vaccination Launches Across The county. Accessed 5.31.22. https://publichealthinsider.com/2021/04/19/public-healths-in-home-vaccination-launches-across-the-county/
[46] PHSKC. 4.29.211. Getting Vaccinated Just Got Easier (At Last!). Accessed 5.31.22. https://publichealthinsider.com/2021/04/29/getting-vaccinated-just-got-easier-at-last/

had completed their vaccine series, prompting an end to PHSKC's mask directive two weeks later alongside lifting of restrictions for the broader State and indicating that the goal outlined in the King County Unified Regional Strategy for COVID-19 Vaccine Delivery was met.

Approximately 81.8% of Washington's population 5 years of age and older has received at least one dose of the COVID-19 vaccine and 74.4% are fully vaccinated as of May 9, 2022. In King County approximately 93.5% of the population 5 years of age and older has initiated the primary series of the vaccine and 85.8% had completed the primary series. For those who provided information on their race and ethnicity, the percentage of individuals who have initiated their primary series of the vaccine by population group include:[47]

Table 4: Vaccination Data from PHSKC Dashboard as of May 9, 2022

Race	% Completed Primary Vaccine Series	Percent of King County Population (One Race)
AIAN	>95%	.7%
NHOPI	>95%	.7%
Asian	>95%	18.9%
Hispanic	76.4%	9.9%
Black	80.9%	6.7%
White	80.8%	62.1%

As vaccination rates increased throughout the spring and into the summer of 2021, new daily COVID-19 cases generally declined until the Delta variant emerged toward the end of July, at which point daily COVID-19 cases generally increased through January 2022 with a few exceptions. The CDC recommended mask wearing in public indoor settings, even for vaccinated individuals. The State of Washington then enacted an indoor mask mandate on August 23, 2021, one that would continue until March 11, 2022. State and local officials continued to enact mitigative actions including vaccination mandates for education personnel and vaccination verification orders for large indoor and outdoor events. King County additionally enacted a vaccine verification policy for other indoor recreational establishments such as restaurants, gyms, and bars.

Declining rates of efficacy for the COVID-19 vaccine in the fall of 2021 drove booster eligibility. By October 22, 2021, individuals statewide at severe risk of COVID-19 illness and/or high risk of exposure were eligible for a booster, followed by the expansion of eligibility statewide to those ages 18+ on November 20, 2021. At the

[47] Washington State Department of Health. *COVID-19 Data Dashboard*. Accessed May 17, 2022. https://www.doh.wa.gov/Emergencies/COVID19/DataDashboard

time of the writing of this report (June 2022) 53% of King County residents 5+ years of age have received a booster of the COVID-19 vaccine.

Table 5: Vaccination Data from PHSKC Dashboard as of May 9, 2022

Race	% Completed Primary Series + Booster
AIAN	62.4%
NHOPI	54.5%
Asian	66.1%
Hispanic	34.2%
Black	35.4%
White	55.4%

The Omicron Variant then emerged in December 2021, substantially driving an increase in daily COVID-19 cases and hospitalizations (including a 700% increase from the month prior) in January 2022. King County hospitals and healthcare partners urged the public to continue to take COVID-19 seriously by getting vaccinated and/or boosted, upgrading masks, avoiding crowded spaces, and saving hospital emergency departments for emergencies.[48] The impact of the Omicron variant cannot be underscored, particularly in the context of responder safety and support for mental and physical well-being as exhausted responders faced their toughest challenge yet as the highest recorded new daily COVID-19 case count was recorded on January 4, 2022. PHSKC had to conduct and coordinate community testing in response to increased demand and reconvene preparations for and later response to the surge. Though this report is intended to merely cover an operational period concluding on January 31, 2022, COVID-19 response continued throughout the early months of 2022, with new daily COVID-19 cases declining significantly from that early January of 2022 peak.

[48] UW Medicine. 1.22.22. King County Hospitals Issue Urgent Call To Action. Accessed 5.31.22. https://newsroom.uw.edu/news/king-county-hospitals-issue-urgent-call-action

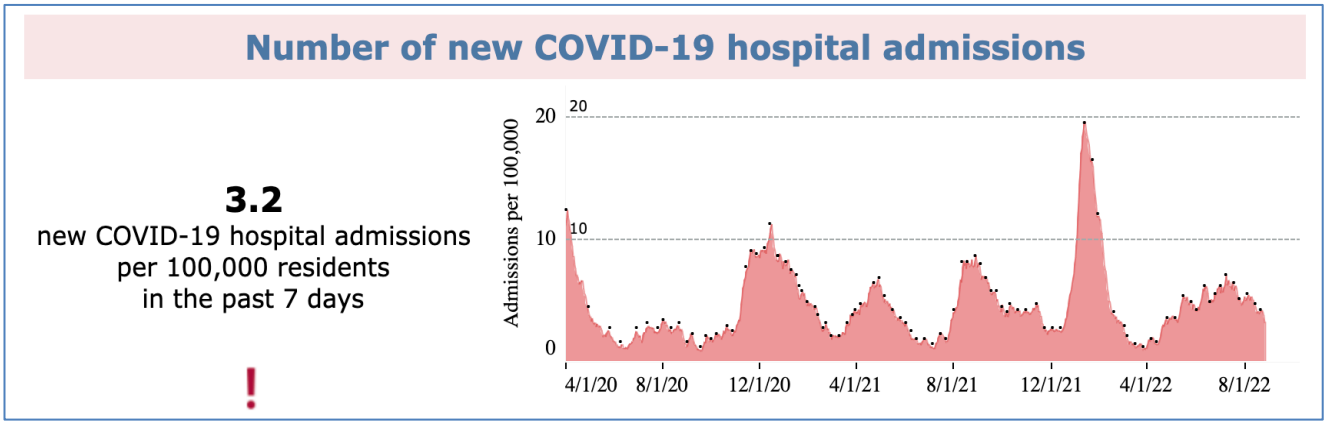


Figure 3: Number of Hospital Admissions in King County from 4/1/2020 – 8/1/2022. Accessed Sept. 1, 2022 https://kingcounty.gov/depts/health/covid-19/data/community-level.aspx

In closing, PHSKC worked tirelessly throughout the over two-year period of January 21, 2020 to January 31, 2022 being addressed in this report to execute its mission of protecting the health and well-being of all people in King County. PHSKC's activities in response to COVID-19 spanned contact tracing, disease investigation, information management, testing, vaccination, PPE distribution, public information, community engagement, and much more. The State and Local Timeline in the appendices includes more information about the timeline and progression of PHSKC's activities in the context of other federal and state actions. At the time of writing of this report (May 2022), PHSKC is demobilizing its incident management structure, with its last operational period being May 11 through May 25, 2022. However, PHSKC has ongoing COVID-19 response and recovery activities and will continue to ensure continuity of support for these through its divisions and programs.

HEALTH AND MEDICAL AREA COMMAND (HMAC) AND INCIDENT MANAGEMENT STRUCTURE

On January 21, 2020, PHSKC activated Level 2 HMAC to coordinate and manage the public health response as cases were identified in Washington State. Three days later, HMAC was elevated to Level 1. The purpose of HMAC is to coordinate and, in some cases, manage public health and associated medical operations during an emergency. Activities include messaging and communications, deployment and management of personnel and resources, and maintaining situational awareness. HMAC is activated when an incident is unable to be managed through existing infrastructure or routine operations, public information and partner coordination needs are high, and the situation is dynamic. The mission of HMAC for the COVID-19 response was to provide an incident management and coordination structure to support rapidly evolving public health-led activities or novel strategies to minimize disease transmission.

Compared to later iterations, the size and structure of the HMAC started small with the first known case and evolved throughout the response to meet the ever-increasing demands. Included in the initial organization structure was an Area Commander and Command Staff, Local Health Officer (no direct reports), Operations Section with five branches, Logistics Section with one branch, Planning Section with three units, and the Finance & Administration Section.[49]

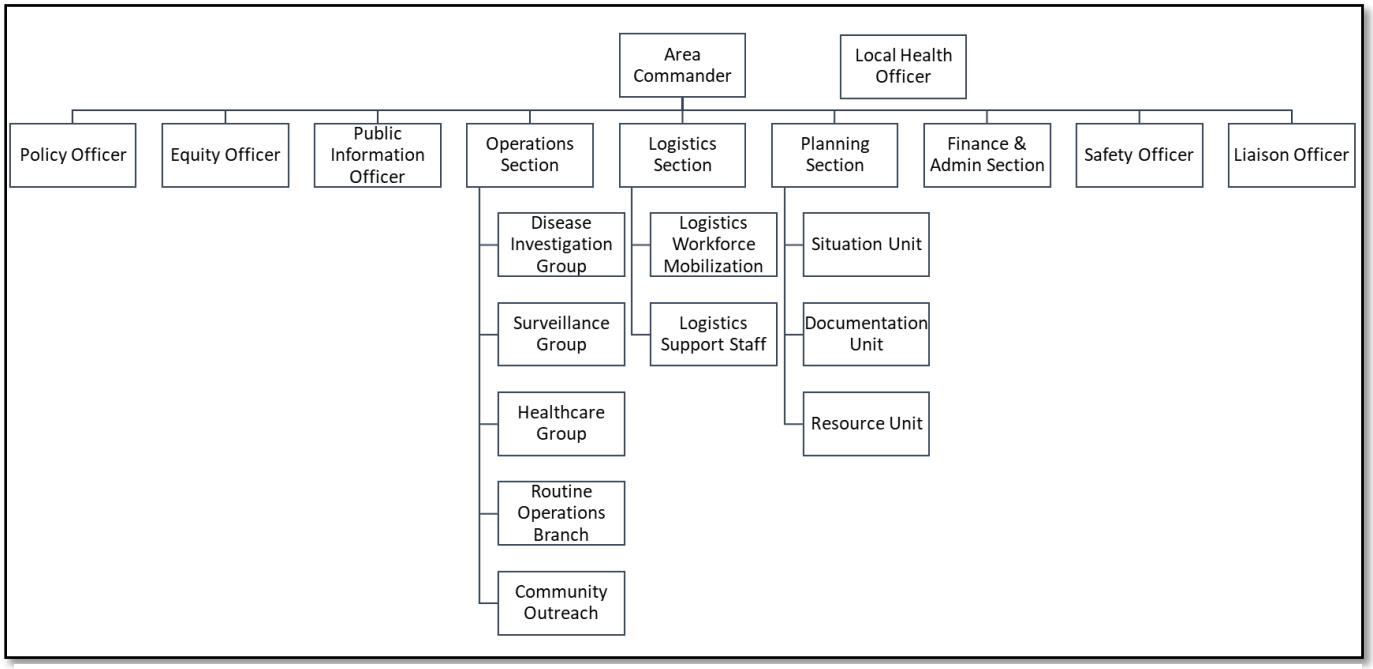


Figure 4: ICS 207 HMAC IAP #1

[49] ICS 207, HMAC IAP #1

EXPANDING HMAC STRUCTURE: MARCH 2020 - MAY 2020

By May 2020 the HMAC structure expanded to consist of over 500 responders directly assigned in a large stand-alone incident command structure. The responders were King County employees, agency staff, consultants, and contractors from partner organizations. Included in the organization structure was an Area Commander and Command Staff, Local Health Officer (no direct reports), Operations Section with five branches and sixteen groups, Logistics Section with one branch, Planning Section with four units, and the Finance & Administration Section with three units.[50] Of note, the below graphics are from IAP #78 and do not include the full extent of the operations section. The operations section ultimately included over 65 Task Forces, Strike Teams, Advisor Teams, and other Coordinating Teams.

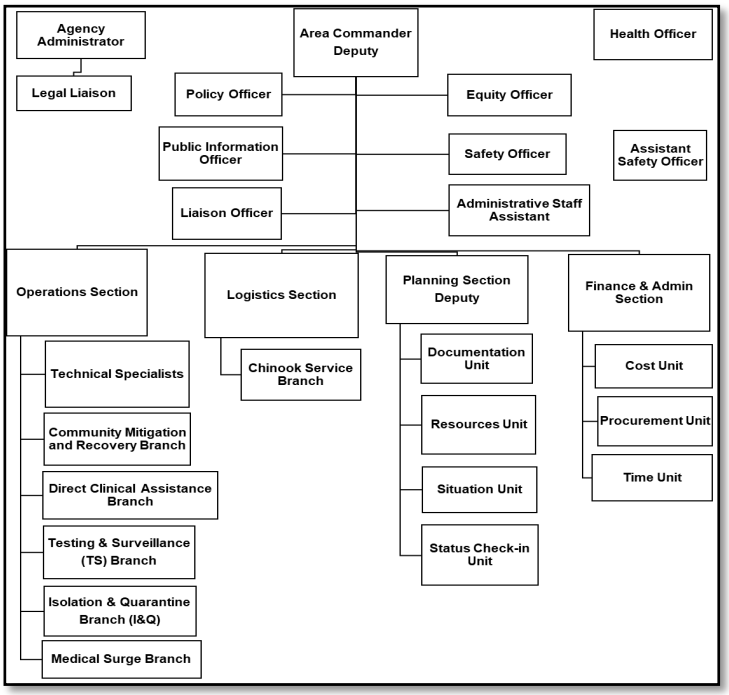


Figure 1: ICS 207 HMAC IAP #78

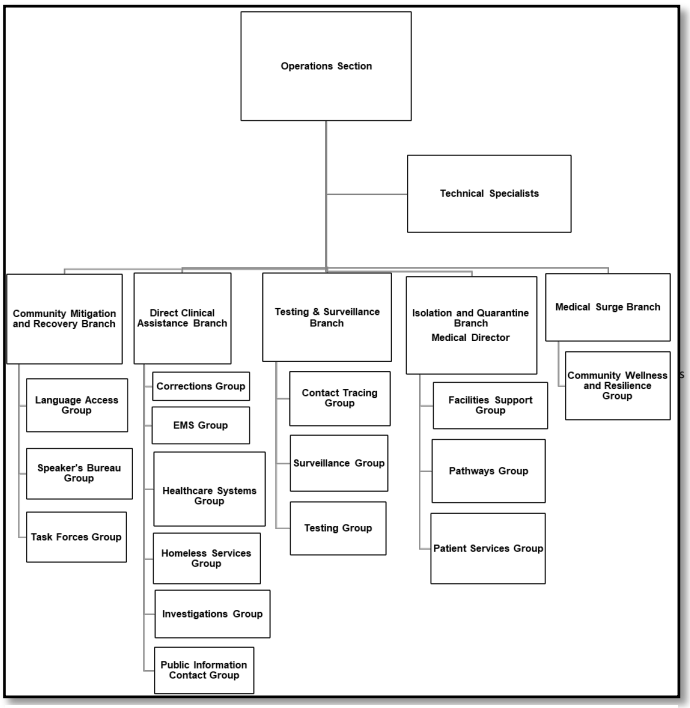


Figure 6: ICS 207A HMAC IAP #78

[50] ICS 207, HMAC Org Chart_Ops Period 78

STREAMLINING HMAC: JUNE 2020 - DECEMBER 2020

In May 2020 PHSKC evaluated HMAC operations to recommend response activities that may no longer need to be managed in the response structure. Although there were not considerable changes to the scope of responsibility, purpose, or mission, the mission now included three parameters: Decision-Making and Policy Role, Current PHSKC Major Response Operations and Planning Focus, and Organizational Management Structure. The parameters also included several subtasks within each. Response activities that became relatively predictable and stable or were expected to continue for an extended period were considered for alternate management structures.

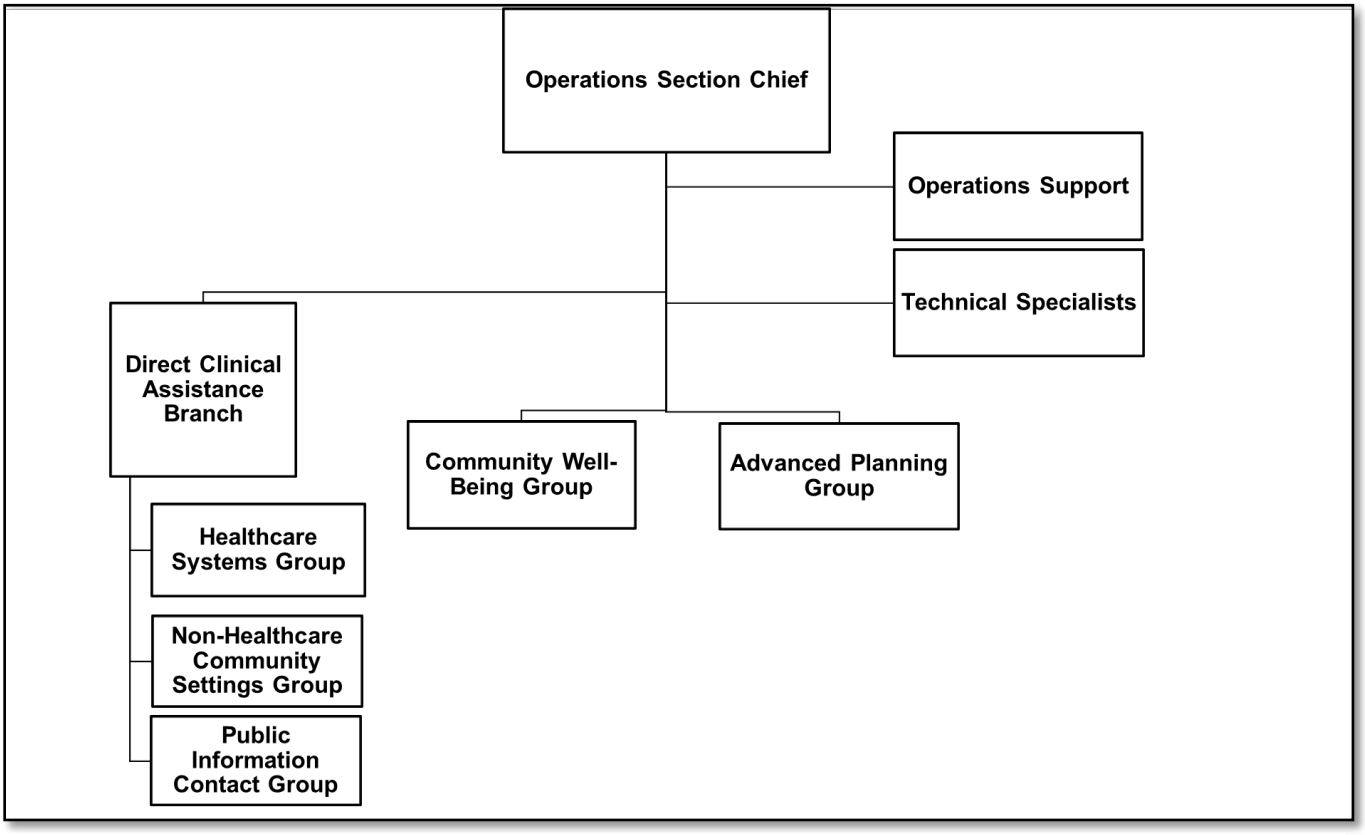


Figure 7: ICS 207 HMAC IAP #112

Departmental Coordination Model: December 2020 - May 2022

In October 2020, PHSKC began planning additional changes to HMAC that would become operational in December 2020. The new incident management structure relied on a standard departmental structure where response activities were embedded in regular divisions. The new HMAC structure incorporated PHSKC's departmental leads to ensure continuity of key incident management roles beginning December 9, 2020. HMAC continued to use NIMS principles for command and coordination, and all major elements of the response continued to be supported to ensure the capacity necessary for effective operations.

Departmental Approach for Response Coordination:

- Use incident management functions and principles for ongoing departmental response coordination and accountability. This will ensure alignment with national practices and compliance with federal requirements.
- Realign HMAC roles with departmental leads for each incident management function. Current incident management staff will be incorporated to support corresponding functions, as appropriate.
- Provide consistent coordination and support for all major response activities across the department. The majority of operational response activities are now occurring within, and under the direction of, departmental divisions. The departmental response structure will serve as a central coordination and support entity.
- Streamline current response meetings to maximize efficient decision-making and coordination. Redundant meetings will be sunset, and a common set of core meetings will be used to facilitate response activity coordination and collaboration across the department.
- Utilize consistent information sharing processes and expectations for all incident management and response activity roles. Ensuring processes for efficiently sharing and using essential information will facilitate increased visibility of activities, cross-cutting coordination, and ability to address challenges.

The new structure consisted of an Area Commander with direct reports of Liaison Officer, Policy Officer, Public Information Officer, Operational Coordination Chief, Information Management Chief, Equity & Community Partnerships Officer, Safety Officer, Financial Management Chief, and Resources Management Chief.[51] The Operational Coordination Section now included eleven Groups, Administrative Support, and Technical Specialists. The Local Health Officer remained part of HMAC but outside of the command structure. Although there was additional streamlining, the structure has remained largely in place through 2021 and into 2022. The additional changes were in response to dynamic levels of activity where coordination shifted with testing, vaccines, surge responses, and isolation and quarantine.

[51] HMAC IAP 113

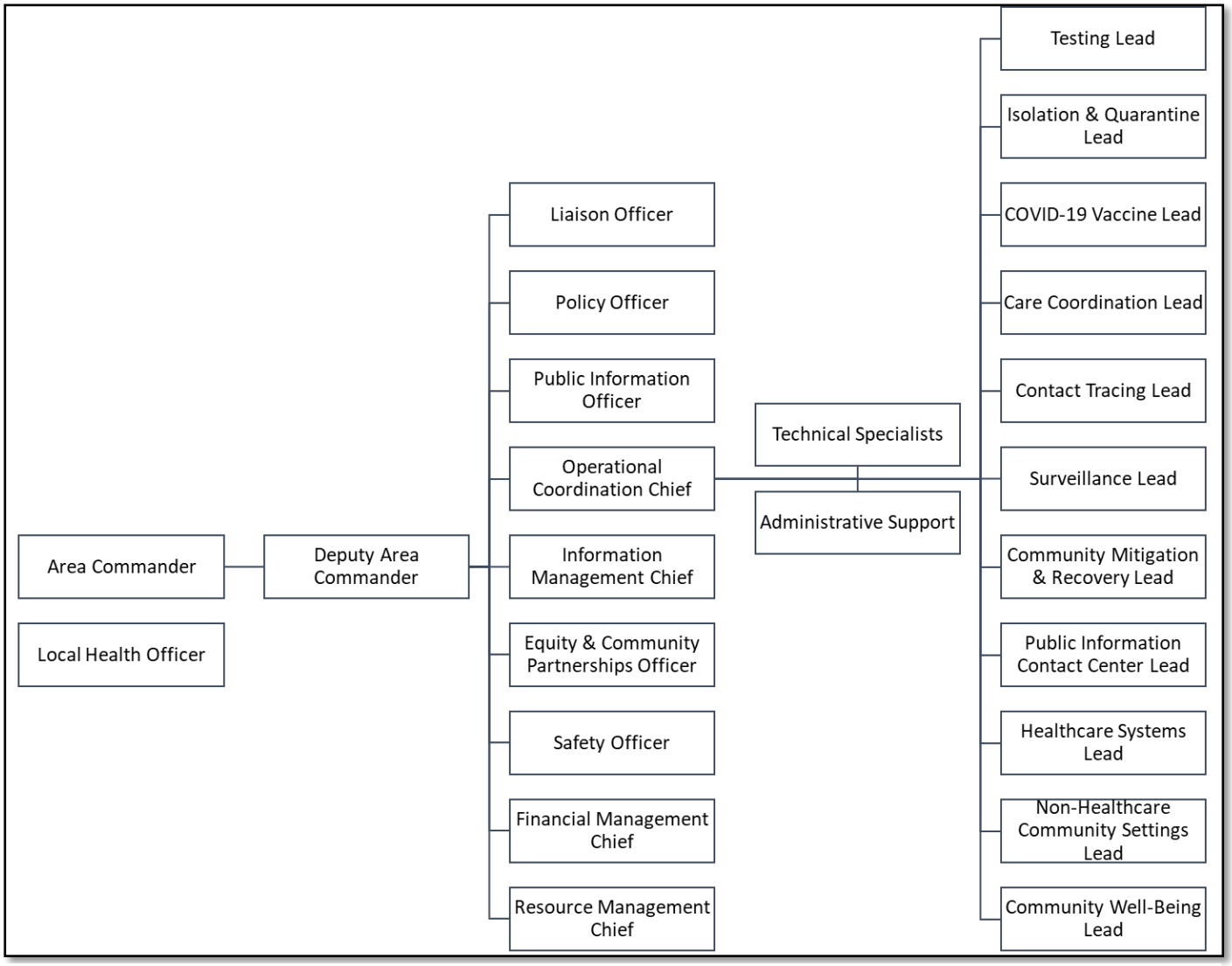


Figure 8: ICS 207 HMAC IAP #113

PHSKC Response Areas

The following table outlines the key response areas and teams for PHSKC. This table is not inclusive of all PHSKC response activities related to COVID-19 and additional groups within the department may have been engaged in activities not reflected below.

Table 6: PHSKC Key Response Areas and Teams

COVID-19 Response Team	Team Objectives	Team's Activities Description
Analytics and Informatics; Epidemiological Investigation and Surveillance	Provide a dedicated staff with data system tools (Tableau/REDCap) to analyze data for senior level decision-making. Conduct epidemiological and statistical analysis using local, state, and federal databases to support disease investigations and determine trends, incidence and prevalence of communicable disease and immunization topics. Respond to data requests by creating custom queries, reports, and surveillance summaries using a combination of data visualizations and narratives. Support data systems management and analysis activities, and ensure data quality Provide population and community data to inform community response that also addressed the social determinants of health	Comprehensive analysis of data with already available data system tools throughout the pandemic. A&I were applied to programmatic decisions and the public facing COVID-19 dashboards. Analyzes syndromic surveillance data from emergency departments, hospitalizations, and school absenteeism Summarizes data in written reports and dashboards; prepare data and report to DOH and external partners, directly and via HMAC. Manage analysis and interpretation of illness reported within facilities such as long-term care, acute care, and homeless shelters; review deaths from the MEO
Care Coordination	King County's Care Coordination services support people isolating and quarantining by providing and arranging immediate supports and linking them to longer term supports.	Immediate Support: Grocery delivery; Mailing PPE kits; Assisting with bills through the Household Assistance Request (HAR) program Longer Term Support: Food assistance; Utilities assistance; Housing; Healthcare; Unemployment supports

COVID-19 Response Team	Team Objectives	Team's Activities Description
Community Mitigation and Recovery (*Now known as Equity and Community Partnerships*)	Help limit and prevent exposure to COVID-19. Lessen the negative social and economic consequences of COVID-19 mitigation measures.	Center principles of equity: prioritize racial, ethnic, cultural, linguistic, and economic groups at higher risk, and promote community-guided solutions.
Community Wellbeing Initiative	Promote emotional health in our communities centering BIPOC children, youth, families, and communities who are most impacted by the intersection of racism and the pandemic.	Build community capacity to share information, resources, and provide culturally relevant supports for emotional health and well-being. Reduce stigma associated with mental health. Reinforce compassion, connection, and care in our communities.
Contact Tracing	Conduct case investigations (collecting key demographic and outbreak indicators) and contact tracing for King County COVID-19 cases Provide information about COVID-19 disease, what to do after testing positive, and vaccination options to COVID-19 cases and their contacts Provide access to support services for cases and their contacts to enable them to adhere to the full period recommended for isolation and quarantine	Interview, educate and provide clinical guidance to contacts of confirmed cases Conduct data entry and ensure completeness and quality of data Assess households' needs for wrap-around services to support I&Q and, if needed, refer to I&Q Care Coordinator or for a medical consult.
Disease Investigations	Ensure the timeliness and quality of communicable disease investigations and response activities related to COVID-19 across King County. Engage community partners to improve access	Oversee COVID-19 surveillance, contact tracing, outbreak investigations and response, and prevention activities in healthcare, non-healthcare congregate, youth, and community settings across King County: Improve access to testing and vaccines for racial and ethnic minority populations, especially Black, Indigenous, People of Color, people experiencing

COVID-19 Response Team	Team Objectives	Team's Activities Description
	to testing, vaccines, and other health-related services for communities disproportionately affected by COVID-19 Generate data and evidence to inform best practices	homelessness, and people living in congregate settings, such as long-term facilities, transitional housing, jails, encampments, and shelters. Coordinate with internal and external stakeholders to enhance partners' capability to respond to COVID-19 by improving service delivery (improving ventilation systems in facilities, performing ICARs, offering on-site testing and vaccination, providing PPEs, etc.)
Emergency Medical Services – Regional Coordination Team	Meet regularly for updates in the various sectors (hospitals, pre-hospital, DOH) and raise any issues for discussion and potential resolution.	Ensured PH and EMS understood the capabilities and responsibilities of each other to enable effective collaboration. Hosted regular meetings conducive to problem solving, representative of stakeholders, and coordination of response strategies.
Equity Response Team	Provide recommendations and actionable information to support communities most impacted by inequities, and communities experiencing hate and bias. Assure that equity considerations are included in public health policy-level decisions, resource allocation, communications, and response priorities related to the HMAC's crisis response. Support responder understanding and practice of ESJ principles through workshops or other informal dialogues.	ERT regularly conducted equity reviews of proposed policies and provided recommendations that made policies more equitable. ERT staff cultivated a positive, accepting, and respectful culture, which set the team up for success when discussing sensitive or challenging topics. ERT had excellent diversity and its members brought a wealth of knowledge, backgrounds, education, and experience to the team. Strong leadership enabled great dialogue and facilitated the collaboration with multiple partners to reach those facing inequity.
Finance	Oversee financial aspects of the incident, including estimating and reporting on incident costs. Ensuring expenses are recorded accurately and documented appropriately. Communicated expense tracking to responders, including time	Finance supported HMAC organization structure (HMAC F&A Section) with response programs in HMAC (Beginning of response - Fall 2020) Finance supported the Departmental Coordination organizational structure with response programs back in their home divisions (Fall 2020 - onward)

COVID-19 Response Team	Team Objectives	Team's Activities Description
	& effort documentation. Coordinated the establishment of contracts	
Food Security Assistance Program	Distribute $2,150,000 worth of food vouchers, in partnership with CBOs, to people deemed food insecure via a standardized screening tool. Award $2,600,000 to organizations to purchase culturally appropriate foods from ethnic markets and local farms, as well as cover the operational costs of distributing food (such as staff time, supplies, and equipment).	Provided food vouchers to individuals through FBOs/CBOs and partnership with Safeway. Allowed resourcing culturally appropriate foods and supported local grocers when possible. Resourced an Impactful need to underserved communities during prolonged COVID-19 crisis mitigating potential future public health problems
Human Resources and Workforce Mobilization	Recruit, process, and train HMAC personnel Mobilize responders to achieve operational activities Provide policy expertise in HR related areas like labor management, COVID-19 related leave, and the use of contract workers	Updated old and built new processes, procedures, and systems on how to mobilize responders as described in the Workforce Mobilization Annex Coordinated with King County departments including PH, DHR, KCOEM, and DCHS around response staffing needs and redeployment Worked with trusted partners, volunteer groups, and staffing agencies to staff high-need areas
Information Management (also known as the ICS Planning Section)	Responsible for managing all information relevant to the COVID-19 HMAC Response Collect, evaluate, process, and disseminate information for use in the COVID-19 response through Incident Action Plans, Operational Response Summaries, Situation Reports, All-Hands briefings, and other response meetings	Massive information sharing and reporting with IAPs and SitReps utilizing ICS structure for role and task management.
Isolation and Quarantine (I&Q)	Provide isolation and quarantine services for KC residents who either cannot I&Q at home or who do not have a home	Provide medical and behavioral health eligibility screening of referred guests; coordination of transportation to and from I&Q sites; and provision of limited scope behavioral health and medical services with the goal of supporting I&Q

COVID-19 Response Team	Team Objectives	Team's Activities Description
		period completion and preventing life threatening complications from COVID-19 illness. Operate and maintain the physical I&Q sites, including supply and inventory management; logistical support for delivery of 24/7 clinical care and operations; and hiring, training and maintenance of appropriate staffing to including nursing, behavioral health, site operations, and security.
Jail Health Services COVID-19 Programs	Manage COVID-19 prevention, case and outbreak investigation, testing, and infection control activities for individuals within the King County correctional facilities Provide release planning services to COVID+ patients releasing from King County correctional facilities	Provide intake testing, surveillance testing, diagnostic testing, testing for close contacts, and testing upon releases as needed. Perform additional infection prevention and control activities such as patient vaccinations, contact tracing, and COVID+ patient monitoring. Collaborate with Public Health CD-Epi to provide guidance to DAJD regarding infection prevention and control activities such as quarantine, droplet precaution, and COVID+ housing determinations. Coordinate with I&Q team with direct referral and release into an isolation facility if an incarcerated individual is being released and is COVID+. Provide education and resources to COVID+ patients releasing to a non-I&Q facility or location.
Liaison	Serve as a conduit of information and assistance between Public Health and other agencies supporting or cooperating with PHSKC's COVID-19 response (other governmental depts/organizations; jurisdictions; private sector partners; etc.)	Monitor response operations to identify current or potential coordination activities and resource needs between response agencies.
Logistics	Provide for all internal logistical support needs for the incident, such as ordering resources, providing supplies, facilities, transportation, equipment maintenance, security, and food	Developed standardized forms used across modalities to make ordering and delivery processes consistent. Integrated WebEOC into the resource tracking process

COVID-19 Response Team	Team Objectives	Team's Activities Description
	service for incident personnel, and support staff for these activities and coordinate with other King County departments and divisions Create, order and manage contracts, provide facilities management support, order, store, and distribute supplies and resources for community partners across King County, including other government entities, hospitals, health centers, long-term care facilities, emergency medical services, childcare agencies, restaurants, and other groups from key sectors	Developed an automated process and algorithm to match inventory, manage PPE requests, and allocate PPE to help improve efficiency and create a more data-driven, objective system for allocating resources Developed and created cross-team coordination and partner relationships Expanded warehousing, distribution capacity, contracting, procurement, fleet services, and facilities management to support internal and external operations. Implemented non-standard processes for incident personnel to allow for take home vehicles, that included more than 72 vehicles.
Mobile Assessment Teams / Homeless Health Emergency Action & Response Teams (HEART)	Support response efforts for homeless service providers, provide clinical assistance, and liaison to Guidance and Public Information Coordinate testing opportunities for high-risk populations and priority groups who otherwise lack access to testing	Ensure coordination and availability of testing (MAT or community partner) to identified sites, such as long-term care facilities and homeless service sites Coordinate the resources and logistics necessary to respond appropriately, work closely with I&Q and EMS to coordinate additional support Update homeless response strategy based on lessons learned and availability of resources Provide shelter assessment, clinical assistance, education, infection prevention & environmental health guidance, and behavioral health support
Medical Examiner's Office	Contribute to accurate surveillance and death numbers due to COVID-19 related illness by testing decedents coming into the office, as well as testing decedents at funeral homes who have circumstances indicating that COVID-19 may have been a factor in their deaths and analyses of any possible vaccine related deaths	Train HMAC response personnel in proper methodologies for sample collection of bio-infectious specimens and protocols for safe handling, transport, and transition of chain of custody for COVID-19 samples for laboratory testing. Post-mortem specimen collection and coordinating specimen transport to the WA State Public Health Lab Collect and enter test results and vaccine data, coordinate test results with

COVID-19 Response Team	Team Objectives	Team's Activities Description
	Coordinate and develop strategies for increased fatality capacity planning across departments and partners	medical history and autopsy findings, discuss test results with health care providers and family members, and analyze the data
Nursing and Professional Services, including Pharmacy, Infection Prevention and Occupational Health	Bring clinical subject matter experts into the planning stage of response work to ensure safe practices	Provide technical assistance and support for clinical operations across the response, including for PICC, AC/RC & I&Q, COVID-19 testing, and COVID-19 Vaccination Lead planning and fulfillment of clinical staffing needs across the response by working with leadership to develop staffing models, working with HR & HR Division Liaisons on recruitment & onboarding of new hires, and working with the Public Health Reserve Corps on volunteer staffing Supervise of credentialing and privileging teams Support internal Continuity of Operations work Onsite leadership for PICC and mas vax operations
Operations Coordination and PPE	Implement strategies and develop tactics to carry out the incident objectives Develop, manage, and refine a data-driven process to allocate PPE in King County based on state Department of Health guidelines and equity principles	Coordinated with team leads from response activities and supported collaboration among different teams and cross-cutting sections Developed the Operational Summary to share activities both internally and to external partners Developed processes for efficiently and equitably allocating and shipping PPE to facilities and partners in need. Collaborated with Logistics and other stakeholders to distribute PPE based on community needs and available resources.
PIO and Communications	Provide culturally appropriate, in-language information to a variety of audiences including the general public, media, elected officials, and staff	Organized by teams, including Content, Media, Community Media, Digital and Social Media and External. Develop messages, materials and guidance related to Public Health Orders and NPIs and other COVID-19 topics in English and for translation.

COVID-19 Response Team	Team Objectives	Team's Activities Description
		Track, assess, and respond to inquiries, comments, and information requests generated through media, social media and through other requests from PICC, Navigators, other units in the response, the general public, elected officials, partners, and others. Craft and develop culturally responsive content, based on key public health messages, to be shared over a wide range of communications channels and platforms, including social media, web, media, community and business partner networks, staff messages, and through large public information campaigns. Develop and execute social media strategies, and build, continually update and monitor COVID-19 website in partnership with KCIT web developer. Manage media requests, inbox, and messaging and conduct routine press conferences, and place speakers on multilingual, community, and mainstream media outlets. Assist residents in scheduling vaccination and testing appointments.
Public Information Contact Center (PICC)	Provide Public Health support, education, guidance, linkage to services, and respond to COVID-19 emerging issues through call and contact center	Answer and triage calls from the community regarding COVID-19 and providing callers with guidance and resources. This includes individuals who do not speak English and community members who do have access to care, do not have health benefits, and may not have access to the information needed to obtain medical assistance. Screen calls to determine if testing is needed; escalate to CD/EPI for decision. Provide guidance for testing sites and timing for testing if exposed. The PICC also provides assistance for individuals who have been tested but cannot access their results. Develop and implement screening tools and scripts for contact center operations.

COVID-19 Response Team	Team Objectives	Team's Activities Description
		Coordinate with PIO & Communication teams for updated messaging, scripts, and referral processes. Ongoing coordination with Communications to get the most recent information to provide callers and for help with developing scripts as new information has been made available. Coordinate with other response teams to clarify guidance, provide clinical assessments, and provide resources as well as assist/support teams with other tasks needed Receive calls for Isolation and Quarantine requests for individuals who cannot safely I&Q in their place of residence and/or are living homeless. Create and/or facilitate the creation of content that was community, language, and culturally appropriate.
Policy	Responsible for developing policy that guides HMAC operations Liaise with Public Health and other King County agencies to create aligned, harmonized, and equitable policies	Helped lead production of key policy and strategy documents (e.g., The King County Principles for Equitable Vaccine Delivery) that guided key operational elements of the overall response. Assisted with bringing the right staff to the decision-making table and making documents public.
Safe Start for Taverns and Restaurants (SSTAR)	Provide community education and outreach to increase community awareness of COVID-19 prevention measures Distribute resources to increase food establishment compliance with the Safe Start reopening requirements	Provide technical assistance to food establishment operators on COVID-19 prevention requirements for food facility operations during the COVID-19 Pandemic and periods during the Safe Start WA and WA Road Map to Recovery phases Conduct compliance enforcement for egregious violations of the Governor's safe start reopening requirements for food facility operations Administer financial assistance for small business food establishments that have incurred additional operating costs to comply with the Safe Start Reopening Requirements
Safety and	Monitor and assess incident-related hazardous	Develop measures to ensure the safety and health of incident personnel

COVID-19 Response Team	Team Objectives	Team's Activities Description
Employee Health	situations and identify actions to mitigate risks and hazards with the greatest potential for serious accident or injury	Develop and share resources to promote the well-being of incident personnel Notify and support incident personnel during workplace exposures, providing N95 fit testing when possible
Testing	Provide COVID-19 19 testing to the most vulnerable populations in King County with compassion and dignity to those that are served during the pandemic Use a data-driven approach merged with community feedback embedded in operations and partnership with A&I to ensure resources were brought across the county to those in need, including determining priority testing site locations and appropriate site type	Build partnerships and coordinate with local elected officials, municipalities, community organizations, health care institutions, research organizations, labs, and other agencies to quickly set up testing sites and find resources available across the county. Develop strategies, blueprints, protocols, and processes to guide operations. Support and coordinate matters related to testing, including acquisition and distribution of OTC test kits, supplies, strategy, results interpretation, data and metrics, new technologies and reimbursement Perform testing at critical setting sites (DTPH clinic, LTCF and homeless service sites) and coordinate testing opportunities for high-risk populations and priority groups
Vaccination Delivery: Community Events, High Volume Sites, Mobile and Public Health Clinics, Place-Based Strategy and Regional Partnerships	Equitably promote and provide COVID-19 vaccination access and vaccinations to Public Health patients and KC residents with a focus on serving vulnerable populations Work with trusted leaders and places to host temporary, small- to medium-sized clinics planned in partnership with community and focused on addressing the priorities and needs of the focus population Offer vaccinations to King County residents (e.g., S King County,)), including critical workers,	Provide community vaccine events that enabled maximum vaccine distribution to citizens of the county by pairing providers with empowered CBOs and other partners. Provide vaccination access and vaccinations in culturally sensitive and inclusive manner (e.g., language access, disability access, partnering with CBOs, etc.) Provide mobile vaccination to reach high-risk individuals who cannot leave their homes or facilities or face other barriers to accessing vaccination (COVID, Hep, Flu) Provide high quality, safe, efficient, and cost sensitive care. Support and coordinate COVID-19 vaccine clinics with King County's 19 school districts and

COVID-19 Response Team	Team Objectives	Team's Activities Description
	underserved medical communities, homebound individuals, and those most at risk to get COVID-19 and most at risk for poor outcomes, working in collaboration with teams across the response and partnerships	many local institutes of higher education. Partner with regional health care institutions to ensure equitable delivery of vaccines and access throughout King County Provide vaccinations at PHSKC-run mass vax and fixed clinic sites in areas of high need (e.g., south King County) and ensure equitable access to the appointment registration system for at risk populations Partner with DOH and FEMA to add additional vaccine opportunities in South King County.
Vaccination Strategy: Planning, Coordination & Readiness	Analysis of COVID-19 vaccinations, disease prevalence, vaccine provider distribution and capabilities Create access points in an equity centric way and address community needs head-on Advocate for changes within DOH, PHSKC, and regional health systems to address the needs of King County residents	Collaborate with A&I to ensure decisions were data-driven and allocation decisions were grounded in equity principles Conduct outreach to providers and pharmacies enrolling in the vaccine program to help identify partners Build connections and relationships with the community and collaborate with the Long-Term Care Sector Offer COVID-19 vaccination promotion, education, clinical services, and support to youth serving systems from childcare through K-12 and higher education Established a clear, community-centered model in which the community partners (CBOs/FBOs) led discussions, planning, and decision-making processes for events. Developed an Equity Tool (based on existing County equity impact review tools) and an Equity Review Process that was used for planning and prioritization both internally and with regional partners. Work with communities, CBOs and other organizations to determine location of vaccine services for each modality (mass vaccination, community events, etc.)

COVID-19 Response Team	Team Objectives	Team's Activities Description
		Vaccine Verification Program: Conduct in-person educational site visits to non-compliant businesses
Ventilation and Indoor Air Quality Program	Provide technical assistance to businesses, schools, childcares, and faith-based and community-based organizations to improve indoor air quality in facilities open to the public in order to reduce COVID-19 transmission risks	Distribute HEPA filtration units to facilities to improve indoor air quality where other means of improving indoor air quality in order to reduce COVID-19 transmission risk are not available Provide community education and outreach regarding the importance of indoor air quality and strategies that can be employed to reduce COVID-19 transmission risks in indoor environments

ANALYSIS OF FINDINGS

INCIDENT MANAGEMENT

PHSKC activated its incident management and coordination structure, Health and Medical Area Command (HMAC) on January 21, 2020 in response to the first case of novel coronavirus in Washington State. By May 2020 the HMAC structure expanded to consist of over 500 responders directly assigned in a large stand-alone incident command structure. Throughout its COVID-19 response, PHSKC incorporated key incident management functions and principles from the National Incident Management System, emphasizing both standardization and flexibility. PHSKC Incident management response closely aligns with CDC PHEP capability *3 - Emergency Operations Coordination* and incorporates several aspects of other PHEP capabilities such as *1 - Community Preparedness, 2 - Community Recovery,* and *6 -Information Sharing*. In addition to response structures and preparedness activities, this section includes leadership, policy and decision-making, collaboration with response partners, and equity considerations related to overall incident management and coordination.

Strengths

Standardization of Processes

HMAC Information Management/Planning Section observed that teams across the response and the HMAC structure as a whole were able to deploy and leverage several key concepts and tools from the National Incident Management System (NIMS). When implemented effectively, responders noted that the HMAC structure and Incident Command System (ICS) processes provided a foundation for effective cross-team coordination and information sharing.[52] Organizational structure was clearly communicated through Incident Action Plans (IAP) and the protocols of ICS helped some teams avoid scope creep to focus on their core mission.[53] The Planning Section also noted that the use of the "Planning P" and related operational tempo helped establish a consistent flow of information which was key to situational awareness early in the response.[54] Finally, the best practices of utilizing standard operating guides, job action sheets, and standardized processes was key for onboarding new staff and growing the response operation.[55]

In early 2020, Wiland Associates (a company specializing in developing incident management capabilities) deployed incident management teams who in total spent two months with PHSKC's incident management team. In June 2020, Wiland produced an AAR that identified opportunities to enhance HMAC functions and leadership expectations.[56] Although only covering the operational periods from March 27 to May 23, 2020, the report highlighted numerous strengths and challenges Wiland Associates observed in the incident management structure and HMAC. The report also included recommendations in a proposed improvement

[52] Marx, C. (2021); PHSKC COVID-19 Intra Action Quad Chart_SSTAR
[53] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[54] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[55] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[56] AAR Wiland Associates

plan. The recommendations were taken by PHSKC, and many are currently being addressed. Some activities that are in the process of being addressed include:

- Clarity on HMAC Function and Leadership Expectations
- Command Titles
- HMAC Decision-Making Model
- Single Command versus Unified Command
- Diffusion of Staff
- Incident Command Sustainability
- On-boarding Interface with HMAC Resource Management Process
- Emergency Planning

Coordination/Collaboration

King County was recognized as the early epicenter for the COVID-19 pandemic and turned into an example for the country with multiple departments coming together to respond to the COVID-19 pandemic and pursuing equity, diversity, and inclusion to support the health and wellbeing of the community. For example, PHSKC led innovative isolation and quarantine programs and used those programs to also benefit people experiencing homelessness and other vulnerable populations. There was a total of $800 million in funds distributed in efforts to reduce the COVID-19 impact.[57] These efforts were recognized by American City & County, a magazine serving city, county, and state officials selecting King County as the winner of the 2021 Crown Communities Award.

In the HMAC Policy & Government affairs hotwash, participants noted that as the response progressed, they developed better coordination with the City of Seattle, business partners, and cross-division collaborations.[58] The City, County, and PHSKC came together to advance science-based policy. This was accomplished by working with elected officials and externally collaborating with community partners. The team attributed the development of key documents as a strength by bringing the right people to the decision-making table. These documents, which were made public, included a King County Unified Strategy for Vaccine Delivery and Principles for Equitable Vaccine Delivery. These documents guided key operational elements of the overall

[57] Havich, Michelle M.,"2021 Crown Communities Award winner: King County's enterprise-wide COVID-19 response." American City and County, https://www.americancityandcounty.com/2022/01/28/2021-crown-communities-award-winner-king-countys-enterprise-wide-covid-19-response/. 30 March 2022.
[58] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

response. Another element that enabled coordination was the activation of a policy officer, which PHSKC had not done before COVID-19.

Innovation/Success: King County's Enterprise Response to COVID-19

King County's enterprise-wide response to COVID-19 was selected as the winner of the American City and County's 2021 Crown Communities Award for its collaboration across departments, including the prominent leadership role that PHSKC played in the pandemic response. Overall, seven isolation and quarantine (I&Q) facilities were established along with comprehensive procedures. Together, these efforts comprised the nation's first civilian I&Q system. By January 28, 2022, this system served 2,300 residents, a large percentage of which were persons experiencing homelessness. When vaccinations became available, the county set ambitious vaccination goals and focused heavily on equity, creating strategies to support the vaccination of older adults and BIPOC individuals. King County went on to recognize the inequities magnified by the public health pandemic and declared racism a public health crisis. Overall, due to the collaborative and dedicated efforts of the county, as of January 2022, it had maintained the lowest COVID-19 death rate of the 20th largest metropolitan areas in the country. *

* Havich, Michelle. "2021 Crown Community Award Winner: King County's Enterprise-Wide Response to COVID-19." American City and County. https://www.americancityandcounty.com/2022/01/28/2021-crown-communities-award-winner-king-countys-enterprise-wide-covid-19-response/. 28 January 2022.

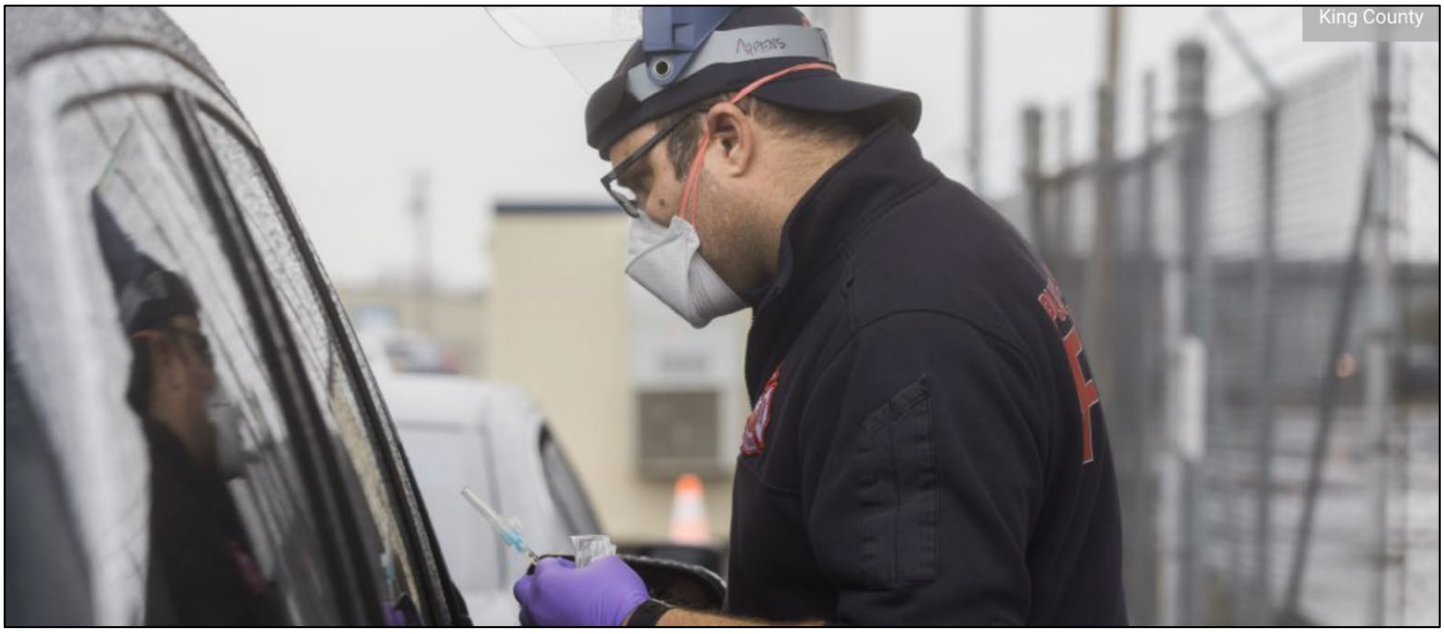


Image 2: Magazine Featuring PHSKC Response to COVID-19

Areas for Improvement

Equity

Although strides were made providing an equitable public health response, there remained barriers to achieving equity across different areas of PHSKC's response. Some of the barriers may have stemmed from limitations of the PHSKC Equity Response Annex or a lack of existing systems in place for building equity into a disaster response. For instance, the Annex did not have an Access and Functional Needs plan and PHSKC did not have an Americans with Disabilities Act (ADA) coordinator.[59] Such a plan or having someone in that role could have outlined an equitable and consistent process on practices to improve the delivery of emergency information to the public in addition to informing the response and recovery strategy.

An issue that emerged during the course of the response was that PHSKC experienced a delay from when information was shared with the public and when the accessible version of that same information would be available for public dissemination. Another example was that ADA compliance was not extended to contracts and partnerships with community groups or third-party providers working on behalf of King County resulting in a widening disparity in accessible products produced by the vendor in alignment with their contractual duties and responsibilities.

Members of some teams also noted delays in leadership decisions that compromised work, to include emphasizing urgency over equity, decisions made without community input, occasional difficulty identifying how to influence work in established coordination structures, and a lack of equity training across activated staff. [60] Additionally, equity not being centered in some PHSKC processes such as procurement was an opportunity for further growth.[61] A particular challenge was prioritizing requests from the wide array of departments and programs given limited resources.[62] Finally, without established processes for soliciting follow-up from response teams and established channels for communicating with equity teams from partner agencies and organizations, equity teams felt that there was missed opportunities for collaboration.[63] And while proud of the organizations and communities they were able to engage, all teams primarily focused on ensuring equity noted that there were connections with community members left untapped and groups that were missing at the table.[64]

[59] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[60] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[61] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[62] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[63] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[64] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Unclear Processes

Leadership Direction

Although overall responders expressed the belief that leaders largely did an incredible job "steering the ship" and managing incident structures, teams noted multiple issues related to prioritization across the response.[65] Staff indicated there was often not enough leadership direction or an effective process to prioritize response activities.[66] Without clearly established priorities, response teams felt like there were unrealistic expectations put upon their operations and in turn sacrificed responder wellbeing trying to meet expectations.[67] Additionally, frequently shifting leadership among section chiefs with different expectations, backgrounds, and skillsets made establishing consistent priorities difficult.[68]

An example of where decision-making processes impacted operations was in relation to contact tracing and disease investigation teams. These teams noted a lack of a clear strategic vision from HMAC and PHSKC leadership regarding this operational area, difficulty in prioritizing work from the response, and a lack of role clarity between related teams which compromised team efficacy. Several teams indicated their roles were malleable or unclear, and at times required unrealistic pivots, which reduced efficiency among the larger effort and created duplicative work.[69] Without a clear strategic vision, leaders of these teams found it difficult to effectively establish priorities as teams became overloaded and work was often reactionary opposed to proactive.[70] At times, these contact tracing and surveillance teams felt a disconnect from leadership-level decision-makers in terms of both leaders' awareness of operational activities and the team's ability to negotiate scope of work.[71] Despite these challenges, it is important to note that team leads and staff still conducted successful contact tracing and surveillance programs in a pandemic of unprecedented scale.

Preparedness and Training

Despite decreases in staff and funding over the last decade, PHSKC developed a multitude of response plans and conducted extensive trainings during that time to prepare teams to conduct a large-scale disaster response operation.[72] While these efforts undoubtably bolstered the county's response, feedback from responders indicated significant ongoing preparedness work is still needed. Trainings on the HMAC structure and Incident Command System (ICS) have been offered by PHSKC but were optional trainings for most individuals.[73] This meant a great deal of those activated for COVID-19 had little-to-no understanding of the systems and structures utilized in disaster response.[74] This led to confusion about who to report to, what teams were responsible for specific tasks, agency roles and jurisdictional authority, and a lack of

[65] Marx, C. (2021)
[66] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[67] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[68] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[69] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[70] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[71] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[72] Marx, C. (2021)
[73] Marx, C. (2021);
[74] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

understanding regarding disaster response norms and practices.[75] Respondents (36%) to the COVID-19 AAR survey conducted by PHSKC noted unclear processes as an area for improvement. Additionally, 30%+ of respondents were either neutral or disagreed to some extent that they had adequate training for their response role. Multiple survey participants indicated in open ended responses that HMAC and incident command processes could be clearer, better organized, and staff would benefit from more training.[76]

While the department had a roster of plans to support the response, they were not universally helpful to teams implementing those plans. A key challenge was awareness; many of the individuals responsible for implementing activities had no knowledge of existing plans, processes, and procedures. When this occurred, teams often wasted time recreating established procedures which delayed work and complicated response activities.[77] Another challenge was that for some staff being shifted into emergency response roles, familiarity with emergency management terms were limited, making plans difficult to understand because of the terminology.

Aside from broader awareness training on established plans and expanded incident onboarding training, a clear suggestion from responders was the need for succinct operational guides that distill down key tasks for implementation.[78] As noted by one responder, "during an incident, staff don't have time to read dense, 20-40 page plans."[79] Brief guides could also address the potential challenge of staff unfamiliar with emergency response efforts.

Utilization of ICS structure at the field team level also appeared to be inadequate or not apparent to field team members.[80] The ICS structure identifies roles and responsibilities, even at lower levels, which could have been used at the field team level. This would have reduced confusion about job tasks and unclear reporting structures.

Shared Understanding

Although collaboration across county departments was generally successful, a shared understanding of response structures, roles, cultural norms, and expectations was difficult to maintain at times. Different response structures between departments complicated decision-making and created confusion amongst teams. This confusion was amplified by a lack of single unified response structure across the departments which sometimes led to miscommunication and duplication of efforts.[81] Responders noted frustration, stress, additional work, and confusion from differences in the organizational cultures and expectations. For example, despite being largely successful in mobilizing the county's workforce, staffing teams noted difficulty in maintaining visibility across the agencies involved and, at times, inconsistent coordination from departments

[75] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[76] COVID-19 PHSKC Staff Surveys (2022)
[77] Marx, C. (2021)
[78] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[79] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[80] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[81] Marx, C. (2021)

with different response structures, expectations, and norms.[82] Additionally, both finance and operational teams noted confusion around role clarity, decision-making authority, budget considerations, and process surrounding hiring, contracting, and purchasing. [83]

While required to meet the needs of the response, changes in organization response structure produced additional challenges and uncertainty for teams. In the summer of 2020, several operations shifted into divisions and programs and in the fall of 2020, HMAC moved from an ICS structure to an incident management structure. As structures changed and processes adapted, some teams had trouble maintaining awareness of the changes and felt they lost established supports in the transition.[84]

Mixed Findings

Systems or Infrastructure

According to results from the PHSKC COVID-19 After Action Report survey, most respondents agreed or strongly agreed that they understood their role in Public Health's overall COVID-19 response. Even when evaluating the first three months of the response, 79% of people agreed to some extent. When rating the last three months (January - March 2022), 87% of respondents felt they understood their roles. Additionally, respondents indicated they knew who to contact if they had any issues as part of Public Health's COVID-19 response.

However, this was not completely reflected in the discussions with staff. Some team members had difficulty understanding role clarity due to lack of experience with the Incident Command System (ICS), others struggled due to a lack of clearly defined roles between different operational groups and partner agencies.[85] A lack of clarity around decision-making authority, role division between response teams and departments, coordination roles with elected officials and governmental partners, and responsibilities shared or split between jurisdictions were also commonly noted challenges.[86] Understanding of roles and how teams coordinated may have improved over time. The survey responses showed that perceived coordination between teams improved from the first three months (43% agreed or strongly agreed) to the last three months (54% agreed or strongly agreed).

[82] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[83] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[84] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[85] Marx, C. (2021); PHSKC COVID-19 Intra Action Quad Chart_SSTAR
[86] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

EPIDEMIOLOGICAL INVESTIGATION AND SURVEILLANCE

A critical focus throughout stages of PHSKC's response were disease investigation and surveillance activities, including during the December 2021 disease surge, when daily case counts reported to PHSKC reached a new high of 2,973 new cases. Activities in this focus area include the work of A&I to analyze and interpret data, including development of new databases and dashboards to support transparency and decision-making. Disease investigation activities focused on preventing and responding to community outbreaks. For example, in January 2022, PHSKC outbreak investigators were supporting 467 active outbreaks and had closed 407 facility investigations in the prior two weeks. PHSKC conducted case investigation and contact tracing activities, including providing clinical guidance to contact of confirmed cases, as well as assessing needs and making linkages for isolation and quarantine support services. PHSKC's execution of epidemiological investigation and surveillance closely matches the doctrinal CDC PHEP capabilities of 13 - Public Health Surveillance and Epidemiological Investigation, 6 - Information Sharing, and 12 -Public Health Laboratory Testing. This section outlines their implementation of this critical component of disease emergency response

Strengths

Systems or Infrastructure

Despite experiencing significant challenges in establishing, scaling, and transitioning both IT and data systems, contact tracing and investigation teams rose to the challenge to create systems and processes able to support operations at an unprecedented scale. Specifically, the Analytics and Informatics (A&I) Team being in place prior to the pandemic with established bodies of work and system tools made the scale up easier.[87] The team had experience with a recent measles outbreak and the surveillance tools used in the response to that event served as a model for COVID-19 initial response allowing teams to jump start their operations.[88] Additionally, proactive monitoring of the pandemic in early 2020 allowed the A&I team to begin to establish systems, dedicate staff to distinct bodies of work, and begin to scale operations.[89] This created a higher level of awareness and allowed them to automate their processes early.

PHSKC's COVID-19 Dashboards, created by the A&I Team, were invaluable in enabling public health decision-making supported by data. The dashboards showed cases counts, community transmission, syndromic surveillance, and vaccination uptake. Combining this information with demographics and geographic information, allowed PHSKC to focus its response to specific communities and provide additional services. These dashboards revealed very early in the pandemic that Blacks, Hispanic/Latinx, Native Hawaiian/Pacific Islanders, and American Indian/Alaskan Natives had notably higher rates of COVID-19 cases, hospitalizations, and rate of death per 100,000 as compared to Whites. Reflective of the effectiveness and innovation, National Association of County and City Health Officials (NACCHO) recognized the APDE Unit for the development of the economic, social, and overall health impacts data dashboard (image 7).

[87] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[88] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[89] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

The A&I Team also went a step beyond the public facing dashboards to provide additional detail and analysis via daily reports disseminated for much of the response. The report detailed key surveillance and outbreak information for many responders across many teams to establish critical epidemiological situational awareness. They presented key information from these data at the start of regular Epidemiological Briefings, which were typically attended by approximately 150 staff, including many in department leadership and numerous teams leads.

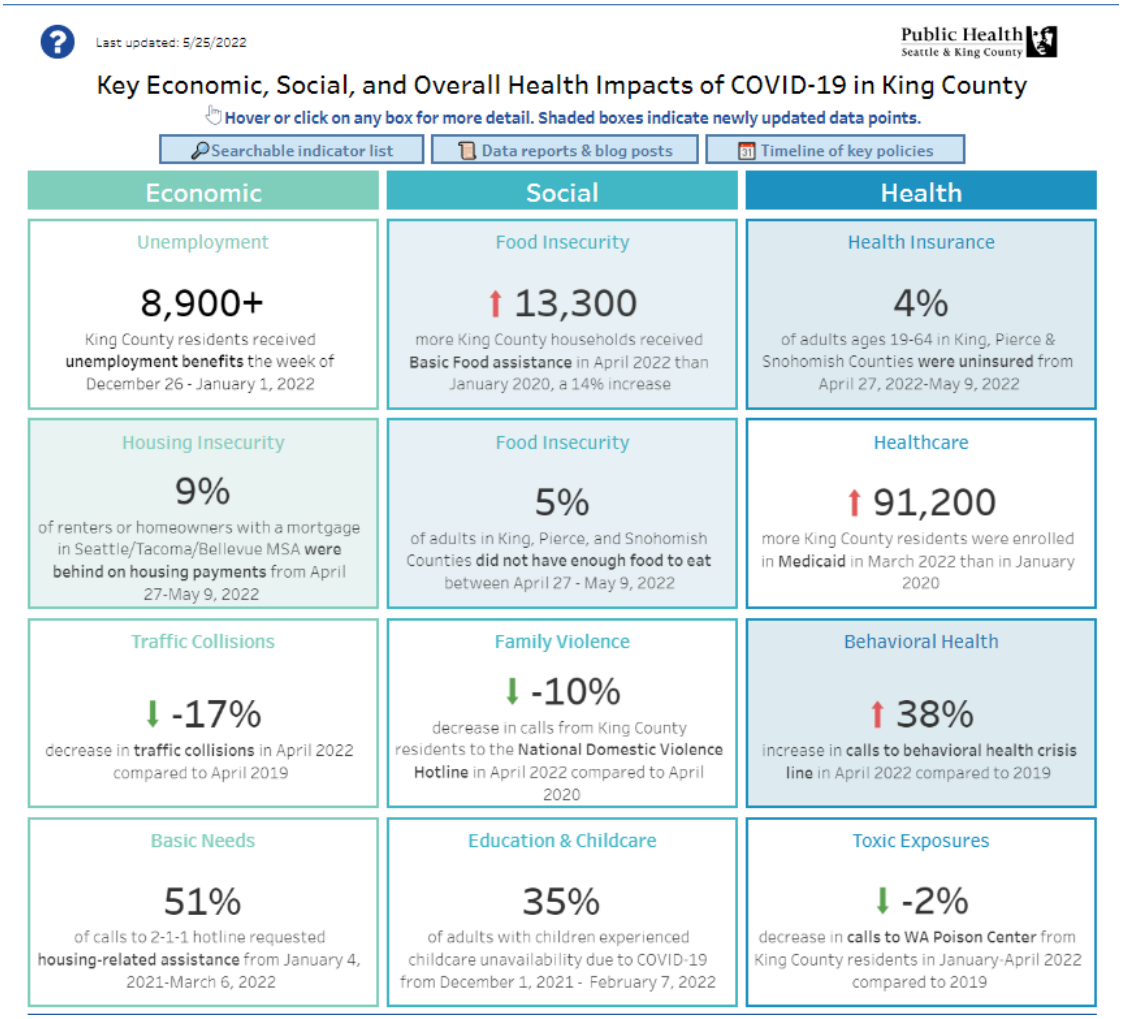


Image 3: Snapshot of PHSKC Economic, Social, and Overall Health Impacts Dashboard (https://kingcounty.gov/depts/health/covid-19/data/impacts.aspx)

Autonomy and flexibility in how data systems were established gave the team a sense of ownership and investment as they created internal infrastructure to support the response. The importance of flexibility in these systems was emphasized by the Contact Tracing Program as well which noted having a flexible, modifiable system (REDCap) allowed them to adapt to the changing needs of the incident and the response.[90] To increase their ability to provide contact tracing at scale while protecting personal information, these teams integrated the InContact system to improve outreach in addition to identifying and securing HIPPA HIPAA-compliant phone systems.[91]

Innovation/Success: Impacts Dashboard

PHSKC's Assessment, Policy Development, and Evaluation (APDE) Unit was recognized by the National Association of County and City Health Officials (NACCHO) for the development of the economic, social, and overall health impacts data dashboard. This dashboard helped track the impacts of public health measures implemented to slow the spread of COVID-19 throughout the county. The data dashboard revealed key insights of the pandemic and guided data-based decision-making. For instance, the dashboard helped PHSKC determine that 18% of households with school-aged children lacked Internet access for educational purposes. *

*"Public Health Receives National Recognition for Innovation in Pandemic Response." Public Health Insider, Public Health- Seattle & King County, https://publichealthinsider.com/2021/06/09/public-health-receives-national-recognition-for-innovation-in-pandemic-response/. 9 June 2021.

Teamwork

A&I teams noted several strengths regarding prioritization, effective management, and teamwork within the groups. Established and reliable communication channels, such as morning and evening check-ins/debriefs, were extremely beneficial for maintaining shared situational awareness across the teams.[92] Other routine meetings like the weekly leads meeting and epidemiology huddles were also noted as important for team success. Cross-training of staff, redundancy and work-sharing, robust process and guidance documents, and a team culture of flexibility allowed these teams to adapt and grow with the response.[93] These teams also noted effective leadership by their leads who were effective at case prioritization, supportive, consistent with communication, and prioritized responder wellbeing by managing individual caseloads.[94] All of these factors led to success within these operational teams.

The Contact Tracing Team noted that their team was unified in quality improvement and building the program.[95] This reflected their service first approach that was well received by community members. They

[90] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[91] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[92] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[93] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[94] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[95] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

often received comments about their professionalism and helpfulness. The team leads consistently reported that members felt the team was supportive and built a strong community of contact tracers with a culture of listening and responding. Members of the investigation teams noted similar teamwork features with their teams.[96] These teams noted additional levels of support from their team leadership by providing self-care, fun spaces away from COVID-19 work, checking in on team members, and listening to concerns about their personal boundaries.

Flexibility/Adaptability

Contact tracing and disease surveillance was conducted throughout the county. To meet the staffing needs for these operations, 61 people were added to contact tracing efforts. The PHSKC team interviewed 90% of named contacts in the community and conducted approximately 500 investigations per week. Many contacts were already in their seven-day “infectious window” despite the aim to reach them the same day PHSKC received their names. The contact tracing outreach team made the most of the opportunity to speak directly to community members and provide advice on economic, financial, and medical assistance as needed.[97]

Jail Health Services (JHS) also took a proactive approach to tracking and monitoring potential outbreaks among people who were incarcerated and staff working in the jails. JHS maintained low COVID-19 positivity numbers through the early and middle phases of the pandemic when compared to similar sized facilities.[98] Initially, JHS anticipated outbreaks solely in congregate jail settings but began to find it was actually the inmate worker population where COVID-19 infections were being found. JHS used a "COVID-19 Positive Unit" and a "Precaution Unit" when individuals had flu-like symptoms. They started COVID-19 screening early, transitioned to rapid testing as soon as it was available, and used targeted surveillance testing for higher risk. Some JHS staff interviewed for this report stated there was a concern about testing disparities within the inmate population. As a result, staff began interviewing inmates and making intentional efforts to promote testing and provide education. This adjustment and pivoting in approach was not something that had been done before and was an effort to reduce any potential disparities among inmates.

JHS also showed adaptability when they began to run into issues with receiving rapid antigen tests which were key to maintaining low positivity rates and testing at intake.[99] The jail had established its procedures based on a specific rapid antigen test, and, as supplies became limited, they pivoted and retrained a large number of staff on a new test.

[96] COVID-19 PHSKC Facilitated Discussions/ Team ‘Hotwashes’. (2020-2021)
[97] "King County's COVID-19 Contact Tracing Efforts Gain Strength." Public Health Insider, Public Health- Seattle & King County, https://publichealthinsider.com/2020/09/16/covid-19-contact-tracing-efforts/. 5 April 2022.
[98] COVID-19 PHSKC Facilitated Discussions/ Team ‘Hotwashes’. (2020-2021), COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[99] COVID-19 PHSKC Key Informant Interviews. (2020-2021)

Areas for Improvement

Information Technology Concerns

Access to Data

Although teams were able to find success and scalability over time in data and IT systems, there were significant hurdles for surveillance and contact tracing teams throughout the response. In addition to routine IT challenges, contact tracing teams noted a lack of interoperability in how data was structured between the county and state.[100] Getting privileges to new databases was also a challenge especially with new hires and temporary staff.[101] This was further complicated by frequent and difficult transitions between different data systems such as the Washington Disease Reporting System (WDRS) and REDCap.[102] Finally, like many teams, these groups noted challenges in locating, organizing, and updating resources through SharePoint and Microsoft Teams.[103]

Accuracy of Data

Multiple databases and systems used in contact tracing depended on accurate data.[104] Early in the response, the A&I Team noted access to and integration with the King County and Washington DOH information systems was a challenge.[105] As the emergency unfolded and CDC staff were brought in, it was difficult to maintain the integrity of data, its storage, and incorporation of other data sources. DOH hosted the data but their infrastructure was unable to process the high number of laboratories involved and began crashing.

With multiple teams and organizations creating records for cases in different systems and limited communication between systems often resulted in cases getting multiple calls in a day from different teams. Initially there was also no care coordination, just notification and contact tracing. Ultimately, the Communicable Disease Outbreak Response Team was given backend access to the DOH system and DOH improved the infrastructure. However, the team noted they still do not have full access to the system and utilize secondary systems and then update the DOH system, WDRS.

Coordination/Collaboration

Contact Tracing and Disease Investigation related teams noted significant challenges related to internal and external coordination during the response. Internally, teams reported feeling siloed, noted there was a lack of a cohesive vision or strategy, and felt there was reactive opposed to proactive collaborations. There were also challenges working across teams due to a lack of a shared common operating picture, unclear and changing process flows, no formalized decision-making process across teams, an unfamiliarity with ICS, and ineffective

[100] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[101] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[102] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[103] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[104] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[105] COVID-19 PHSKC Key Informant Interviews. (2020-2021)

integration into HMAC structures.[106] Contact tracing teams also noted the need for expanded collaboration with public messaging teams to ensure messages are clear and effective.[107]

Externally, effective communication and collaboration with Washington State Department of Health was a challenge across the contact tracing and surveillance related teams. There was a lack of clarity around roles regarding specific cases and test results, especially regarding referrals to care coordination. Changing and contradictory information or a lack of community around specific settings also led to difficulties collaborating.[108] From the perspective of JHS, communicable disease – epidemiology teams did not understand the capacity of the jail and missed key elements including a lack of documenting interfacility transmission. JHS felt they could have been more involved in information sharing and the development of best practices that would have helped others. JHS noted there may be a stigma to working with the jail and that the relationship between teams could, at times, feel condescending.

Although these challenges were present, successful collaborations were routinely found throughout the response. Successful partnerships existed with school taskforces, Environmental Health, and the Adult Family Home Council. Strong relationships were built with both facilities and service providers among many others.[109]

EQUITY AND COMMUNITY PARTNERSHIPS

PHSKC prioritized collaboration with community partners to mitigate and address the disproportionate impacts of the pandemic, as well as to combat stigma, discrimination and racism that further compounded inequities. PHSKC's Equity Officer and the Equity Response Team (ERT), comprised of PHSKC staff and community partners, provided internal guidance on equity and social justice concepts, culturally relevant resources, recommendations on planned response activities and elevation of COVID-19 equity concerns reported to the agency. Pursuing great equity in the COVID-19 response with community partners allowed PHSKC to increase CDC PHEP capabilities *1 - Community Preparedness and 2 - Community Recovery*. PHSKC also created several collaborative groups, such as the Pandemic and Racism Community Advisory Group (PARCAG), along with the Community Mitigation and Recovery team and community navigators, to work on equity and fairness throughout the response. The Community Well-being Initiative promoted emotional health by building community capacity to share resources and provided support centered on BIPOC children, youth, families, and communities who are most impacted by the intersection of racism and the pandemic. Additionally, PHSKC supported the community by leveraging existing and new funding streams to support community outreach and education. Some organizations were able to redirect resources to meet emerging needs on their own (e.g., Best Starts for Kids). PHSKC was also able to provide resources from the CDC, Patient-Centered Outcomes Research Institute, and Gates Ventures to partner agencies to fund COVID-19 work. PHSKC integrated the incident management liaison function through government affairs and policy staff who promoted information sharing and collaboration with government and non-government partners to create aligned and equitable policies.

[106] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[107] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[108] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[109] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Strengths

Relationship Building

Intergovernmental partnerships were a key component of successful COVID-19 operations for PHSKC. Governmental Affairs teams were able to establish a regular cadence of meetings and standardized processes to build and maintain positive relationships with elected officials and key stakeholders such as Sound Cities Association, the King County Executive, King County Council, the Seattle Mayor's Office, and Seattle City Council.[110] These relationships empowered and informed response activities allowing them to understand community needs while getting a head start in adapting programs and services as required.[111] Coordination with federal partners was also an important component and these efforts helped mobilize activities like the deployment of approximately 50 CDC staff to assist with the first outbreak in the country in a long-term care facility.[112]

Community partners reflected that PHSKC also did an excellent job distributing resources to Community-Based Organizations (CBOs) and Faith-Based Organizations (FBOs).[113] Similar reflections were heard about information sharing, PHSKC was noted as a tremendous partner in both bringing people to the table, creating advisory groups, and going to community partners to share information. The CBOs/FBOs noted they had more than enough PPE from PHSKC, and they received public health information almost immediately when it became available. In one townhall, community partners noted they were surprised at how PHSKC was always able to answer their phone calls and emails, or they received a response within 48-hours.

Early in the response, PHSKC was able to rapidly put together contracts with community partners. This was aided by pre-existing relationships with first responder agencies that were staffing and standing up vaccine and testing sites.[114] First response agency partners believed testing sites were rapidly set up and felt seamless. Similarly, many community partners appreciated that PHSKC connected partner organizations with private entities to assist them in providing COVID-19 resources to the communities they served.

Coordination/Collaboration

Effective community engagement amplified the internal equity focus within response activities and decisions. Both the Community Well-being Initiative and Community Mitigation and Recovery Teams noted community partnerships as being a key driver for response success.[115] Established relationships and mechanisms for feedback and input allowed the response to provide a more holistic and community centered approach over time in both communications and operations. By engaging community groups through initiatives such as the PARCAG and utilization of community navigators, response teams were able to get timely qualitative feedback

[110] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[111] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[112] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[113] COVID-19 PHSKC External Partner Townhalls (2022)
[114] COVID-19 PHSKC External Partner Townhalls (2022)
[115] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

from the communities they were serving.[116] This allowed the teams to adapt the response as needed. For example, PHSKC provided information in multiple languages, expanded testing to underserved communities, improved guest comfort at isolation and quarantine facilities, and created equitable vaccine distribution strategies.[117] These initiatives allowed PHSKC to collect information in near real time and build partnerships that will extend past the response.

PARCAG

By September 20, 2020, the PCAG was reestablished as the King County Pandemic and Racism Community Advisory Group (PARCAG) and PARCAG's mission was modified to "identify, inspire, and mobilize bold solutions in response to the urgent, interconnected crises of COVID-19 and systemic racism."

Equity:

Community Involvement

PHSKC ERT and community navigators developed specific plans for engaging different communities within the county for public health information dissemination.[118] These community specific plans identified key leaders and points of contacts to engage. For example, the Marshallese community plan identified four women leaders to consult regarding vaccines and PPE who could provide a culturally competent perspective and understanding of the community to inform tailored messaging and promote community-centered strategies for communications to support overall positive health outcomes.

Additionally, community navigators were an important component to success in several operational areas. This team of approximately 30 people filled in gaps that had not been previously identified and were made apparent due to the scale of the pandemic.[119] The community navigators represented a diverse population that was dealing with a lack of transportation, job loss, food insecurity and loss of housing. Imbedded in their communities, navigators served as conduits to get resources to their communities, dispel misinformation and highlight the known fears and barriers to resources and healthcare.[120]

They were critical to successful community outreach and sustained communication throughout the pandemic. Community navigators provided valuable immediate or weekly feedback to PHSKC on the issues that their communities were facing.[121] They assisted community members in accessing public health information in their native language, helped individuals fill out required forms for testing, vaccination or other available resources, and provided assistance reaching the right testing or vaccination locations.[122] Many PHSKC staff noted the that

[116] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[117] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021); PHSKC COVID-19 Intra Action Quad Chart_SSTAR
[118] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[119] COVID-19 PHSKC External Partner Townhalls (2022)
[120] COVID-19 PHSKC External Partner Townhalls (2022)
[121] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[122] COVID-19 PHSKC External Partner Townhalls (2022)

community navigators were an important part of the PHSKC response and should continue to be funded.[123] Community organizations also spoke highly of the speed that PHSKC established the program and for its wide reach.[124]

As a Key Focus

As a leader in equity-driven response, PHSKC established expectations that equity would be a key focus and built an internal structure to support those efforts.[125] Rather than leaving equity related issues to be addressed by individuals to identify and navigate, the HMAC established an Equity Officer to serve as part of the leadership team, formed an ERT responsible for tracking and raising equity related issues and concerns, and centered equity as a focus in every meeting where decisions were made.[126] The Emergency Response Bill of Rights put forth the principles of equity, anti-racism, and social justice to ground policy decisions, resource allocation, and response priorities during crisis response.[127] The ERT regularly conducted equity reviews of proposed policies and provided recommendations to leadership and operational teams. Teams across the response, such as the Community Well-Being Initiative, modeled equity and trauma-informed practices such as meeting groundings and land acknowledgements to create an inclusive and resilient culture.[128]

[123] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[124] COVID-19 PHSKC External Partner Townhalls (2022)
[125] Marx, C. (2021)
[126] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[127] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021); COVID-19 AAR Key Documents Summary Matrix
[128] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

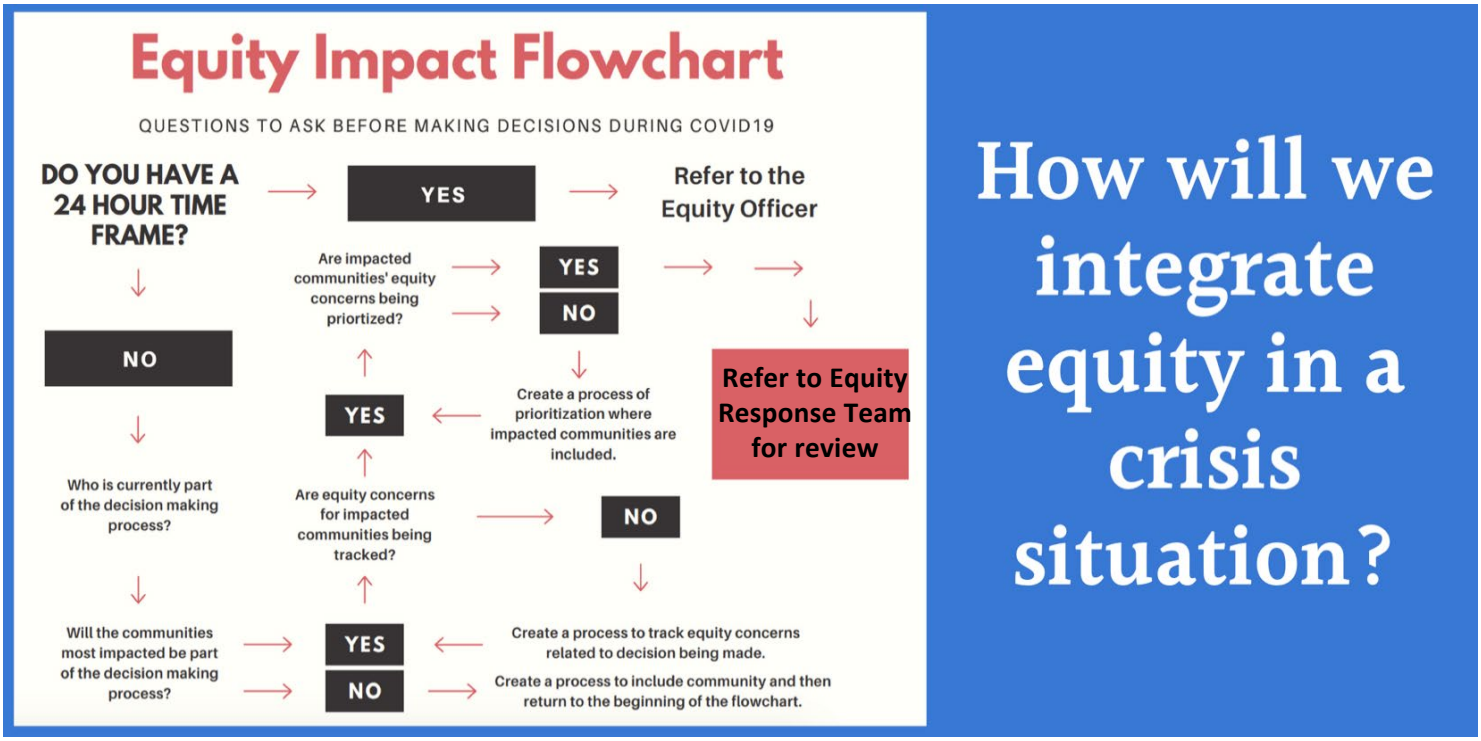


Image 4: Equity Impact Flowchart

Flexibility/Adaptability

An assessment of the PHSKC disaster behavioral health response during COVID-19 was conducted and a report was generated itemizing strengths and recommendations. It provided a particular focus on the inclusion and integration of behavioral health into response activities and supplemented the 2021 Disaster Behavior Health Annex. PHSKC conducted 16 interviews across departments, a literature review, and ongoing meetings to gather details relevant to disaster behavioral health. The assessment found that "COVID-19 had a widespread and often disproportionate impact on King County residents. These inequities were influenced, and often predisposed, by many factors including barriers to accessing healthcare and mental health services, inequitable distribution or foundations of education supports, food insecurities, an overburdened workforce, overworked and maxed out hospitals with limited capacity, shortages of personal protective equipment, inpatient psychiatric units that were overflowing with patients yet had a dearth of beds, and other structural elements."[129]

To address the needs of the community, behavioral health competencies were woven into aspects of the county's response. Disaster behavioral health teams were integrated within congregate and non-congregate isolation and quarantine facilities. They provided trainings, coordinated volunteers, and collaborated with partner agencies to fill growing gaps in emotional wellness care in the community. They also tended to the behavioral health needs of clinical providers and responders. However, the assessment found there was a lack

[129] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

of preparedness specific to disaster behavioral health and a need to build the infrastructure to better tend to the emotional wellbeing of impacted individuals and communities in future disasters.[130]

Innovation/Success: Post Card Project

As of August 2021, volunteers from organizations like Valley Cities, Cities Rise, and ReOpp as well as PHSKC staff and PHRC volunteers wrote over 2,900 wellness messages to youth on postcards that included links to CWI resources. Seattle Children's Hospital, Learning Center North, King County Opportunity Youth Programs, Federal Way Black Collective, YMCA of Greater Seattle, and Kent School District distributed them. Volunteers writing on the cards reported "it gave them space to think positively" and felt it was a form of self-care. Youth were grateful for the postcards and visits to the wellbeing website increased. *

* PHSKC. August 11, 2021. Post-Card Project Report

Image 9: Youth Post Card Project Examples

Areas for improvement

<u>Needed Relationship Building</u>

Larger private organizations often benefited from public health decisions and could contribute to accomplishing shared goals. However, there was a noted cultural barrier to PHSKC working with these types of organizations. Additionally, there were concerns by PHSKC staff that external partnerships formed during the response, such as those made with CBOs, FBOs, community navigators, etc., may not be maintained beyond the pandemic.[131] Some staff suggested a need to create a public health role focused on outreach and establishing external partnerships with private sector agencies.[132]

This concern about maintaining relationships after the pandemic response ended was raised by other stakeholders as well. Many community partners expressed concern that progress that was made in building

[130] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[131] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[132] COVID-19 PHSKC Key Informant Interviews. (2020-2021)

relationships could be lost once response efforts ended. They saw a strong need to sustain and build upon partnerships and to use them during other public health emergencies or disasters.[133]

Equity Concerns

Addressing Access and Functional Needs

Tremendous efforts were made translating information in various languages to serve the diverse community, however, translation services were not sufficient for many residents with disabilities. The distribution of information through internet technology was one limitation and some CBOs felt that pictorial or video versions of information might reach a larger audience including those with functional needs.[134] Additionally, some CBOs noted that creating resources with a focus on "plain talk" would make it more accessible while simultaneously making it easier to translate.

PHSKC captured demographic data on their residents to guide decision-making on where to prioritize scarce resources and serve the public. People with disabilities did not appear to be represented as frequently on dashboards and this lack of representation may have contributed to the feeling that testing and vaccinating these residents was not as important.[135] Tracking the vaccination and testing rates of people with disabilities would help PHSKC understand this important part of the community more fully. One townhall representative noted that 25% of the King County population are people with disabilities and they span every demographic.[136] These respondents felt PHSKC did not have the required conversations to deal with this complex access problem and although there is a significant expense associated with accessibility, that should not be a reason for a lack of inclusion.[137]

Community members expressed that transportation was another an area where accessibility could have been improved for both testing and vaccine distribution.[138] Initially, mass testing sites were only available for those with vehicles. Community organizations noted the PHSKC did not give enough attention to transportation needs and planning. This disproportionately affected people with disabilities and senior citizens who had a greater need for transportation. They could not be picked up and dropped off at vehicle only sites and could not wait in line if there were mobility issues.[139] As a result, community partners invited PHSKC to a coordination group focused on transportation equity.

PHSKC's efforts in promoting the organization's resources and participating in the meetings greatly improved collaboration and trust between the two groups. Attending the meetings allowed the transportation group to be heard and understood. PHSKC listened to this community input and modified their transportation practices with certain sites.[140] This community group advocated for improving the accessibility of vaccine and testing

[133] COVID-19 PHSKC External Partner Townhalls (2022)
[134] COVID-19 PHSKC External Partner Townhalls (2022)
[135] COVID-19 PHSKC External Partner Townhalls (2022)
[136] COVID-19 PHSKC External Partner Townhalls (2022)
[137] COVID-19 PHSKC External Partner Townhalls (2022)
[138] COVID-19 PHSKC External Partner Townhalls (2022)
[139] COVID-19 PHSKC External Partner Townhalls (2022)
[140] COVID-19 PHSKC External Partner Townhalls (2022)

sites and filled the information gap by connecting transportation resources with those in need through a contact center and website. The group felt that because they were providing a critical resource funding would have helped. The group was often paying for transportation or had received ride credits from private partners. The community group has since sunset and the group noted it is now unclear who to contact about transportation resources.

Emergency Managers in King County expressed similar concerns about transportation planning for older populations, populations in South King County and Seattle, and school districts.[141] They felt that these limited transportation populations were not fully accounted for within the equity planning. Similarly, the decisions about vaccine allocations did not account for those same transportation needs.

PHSKC Representation

Some team members expressed that the available resources and PHSKC itself did not meet the equity considerations for people of color and minorities. There was a noted lack of BIPOC providers in the Public Health Reserve Corps which raised concerns about the ability for those systems to serve communities disproportionately impacted.[142] It was also expressed that county leadership should recognize the disproportionate experiences of BIPOC in the workplace and the challenges that emerged throughout the response.[143] While it was recognized PHSKC took initiative around pro-equity and anti-racist values, some indicated that the communication was insufficient and not all employees saw equity as "their job".[144]

Lack of Coordination/Collaboration

While many community partners noted their ability to reach staff was a strength, they also note there were challenges when staff transitioned out of their response positions.[145] This was made difficult because there was not an organizational chart that listed a position and phone number for partners to contact. The community had an established connection with a single person filling a role but, when they left, the organization found it difficult to connect with the new person filling the position. Some partners also noted there was a lack of clarity around the roles or responsibilities of PHSKC teams. For instance, when staff attended partner meetings, it was unclear what their response role was and when there were questions about public health guidance, there were times when staff were unsure who within their agency could provide the answer.[146] This same sentiment was reflected by King County Emergency Management staff, which said an organizational chart would have been valuable to outline the roles people were filling and to know who to contact.[147]

[141] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[142] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[143] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[144] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[145] COVID-19 PHSKC External Partner Townhalls (2022)
[146] COVID-19 PHSKC External Partner Townhalls (2022)
[147] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Emergency Managers in King County also noted that timeliness especially on guidance related to schools was a challenge.[148] They believed they did not have enough time to process the guidance into procedures with education partners. There was a disconnect between what the guidance was saying and how it would be operationalized in schools. Emergency Management partners also stated that many of their information requests related to how to operationalize the guidance went unfulfilled.

Needed Relationship Building: Sovereign Tribal Nations

During the townhalls, community partners noted there was not a direct connection between tribal governments and PHSKC.[149] The tribal governments, as sovereign entities, were not able to establish a government-to-government relationship with PHSKC until later in the response. A pre-existing tribal liaison within PHSKC, especially between Public Health and the Seattle Indian Health Board was needed. A specific example given was when tribal health services was providing support to homeless populations within their community early in the response but were having trouble getting their patients resources. Since there was no direct connection with PHSKC, the tribal government did not receive assistance or know what resources were available. Later in the response, there was a meeting between tribal health services and PHSKC which resulted in direct mobile teams to assist tribal communities.

Lack of Coordination/Collaboration

Many community partners noted that while PHSKC was great at sharing information and brought them to the table, they could improve their follow-through and follow-up with community partners.[150] The community organizations did not feel PHSKC had to implement all of their ideas, but they should explain why their ideas were not implemented or if the proposal was going to be addressed differently. This extended to submission for funding requests and support from PHSKC. In one example, a community organization noted that after submitting a grant proposal to PHSKC, they never heard back as to why it was not funded.[151] Closing the loop, even when news was bad, was noted as an important step to building trust between organizations and communities.

Mixed Findings

Communication

Frequently changing guidance, messaging, and strategies produced significant hurdles. Government Affairs teams noted that national and state guidance would change constantly and at times without warning. This made it extremely challenging to understand the scope of changes, gather questions from staff and partners, and provide adequate answers to advance planning and operations.[152] This extended to public information as well where national and state public messaging strategies changed frequently and with little to no notice.[153]

[148] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[149] COVID-19 PHSKC External Partner Townhalls (2022)
[150] COVID-19 PHSKC External Partner Townhalls (2022)
[151] COVID-19 PHSKC External Partner Townhalls (2022)
[152] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[153] Marx, C. (2021)

This caused confusion amongst the public regarding conflicting messaging and policy teams had to scramble to synchronize with recent changes.[154]

However, even with the frequently changing guidance, PHSKC was seen by partner agencies as the best source of truth that aligned with the science. They were available to answer questions quickly and were often the conduit for community partner groups to receive accurate information around COVID-19 intervention and prevention measures. For partner agencies with healthcare memberships, they disseminated information to (e.g., long term care, adult family homes, clinics), PHSKC messaging was often copied or pushed out to constituents.[155] A few healthcare partners specifically acknowledged the use of the data on PHSKC dashboards as a critical source of Information for their decision-making.[156]

Equity Concerns

Community members from historically marginalized communities were reported by townhall participants to have not used I&Q services due to distrust of government and the lack of accounting for cultural differences.[157] Many community members perceived that I&Q was only for people experiencing homelessness or heard rumors that scared them from utilizing the resource.[158] Some members of the community also viewed these services as trauma inducing and as increasing stigmas about their own communities. In addition, because some cultures are organized around large multigenerational families, they would not use I&Q housing as it could cause cascading impacts to their families and isolate them from support systems.[159] Many community partners had to teach the communities they served how to safely isolate at home because they would refuse to leave. Community stakeholders also reported that community members had a similar reaction to the proposed or perceived use of the National Guard at mass testing sites.

Prior to the pandemic, PHSKC had been working to build relationships in the community and overcome negative perceptions around their agency. Community partners noted that once the pandemic happened, there was no longer time to slowly overcome the long-standing memories and negative perceptions.[160] Therefore PHSKC needed to make a concerted effort to earn the trust of the community and leverage trusted messengers to break down barriers right away. Partners noted that PHSKC staff worked hard to address power dynamics and approach community outreach in a humble way by recognizing the influence and expertise that partner agencies had to reach the community.[161] Several partners and stakeholders expressed concern that relationships made during COVID-19 would diminish or not be continued. They feared all that was gained by identifying relationships and partnerships would be lost. The result would be needing to start over at the beginning during the next emergency and a missed opportunity to improve services in steady state.

[154] Marx, C. (2021)
[155] COVID-19 PHSKC External Partner Townhalls (2022)
[156] COVID-19 PHSKC External Partner Townhalls (2022)
[157] COVID-19 PHSKC External Partner Townhalls (2022)
[158] COVID-19 PHSKC External Partner Townhalls (2022)
[159] COVID-19 PHSKC External Partner Townhalls (2022)
[160] COVID-19 PHSKC External Partner Townhalls (2022)
[161] COVID-19 PHSKC External Partner Townhalls (2022)

PUBLIC INFORMATION

Throughout the response, PHSKC's robust communications activities provided information to a variety of audiences including the general public, media, elected officials, and staff. This included networked approaches with teams leading equity and community partnerships areas to guide the development of culturally responsive messages related to public health guidance and other COVID-19 topics. They produced messages in English and for translation in several other languages. In 2020 alone, PHSKC's Language Access team completed 375 jobs, totaling 4,200 documents with 88 translators in 33 languages. These and other critical public health messages were shared through a variety of communications channels and platforms, such as social media, press conferences, community and business partner networks, and large public information campaigns. The PHSKC Public Information campaign engaged all actionable functions within the CDC PHEP capability of *4 - Emergency Public Information and Warning* and contributed to *1 - Community Preparedness and 2 – Community Recovery*. PHSKC's communications activities worked closely with other areas of its COVID-19 response, including responding to inquiries received through social media, community navigators, PICC, email and other communications platforms.

Strengths

Teamwork

Like the PICC, the Public Information Officer (PIO) team noted a focus on teamwork and creation of a collaborative safe space as key to their success. Managers and staff came together quickly to solve problems and team members treated one another with respect and kindness. Staff leveraged existing relationships from prior work as a foundation for trust and collaboration.[162] Staff were onboarded effectively and, over time, the public information team was able to develop a flexible roster of staff with a variety of skills and interests to meet needs as they arose.[163]

Relationship Building

Achieving the mission of public information, especially in a way that reaches all communities, required extensive resources and partnerships. The PIO team leaned heavily into partnerships to achieve success within their operational areas of content, media, community media, social media, and external communications. The City of Seattle noted in their AAR that there was strong collaboration between PHSKC and City departments and multiple messaging strategies to distribute information and cited the collaboration as a success.[164]

The COVID-19 Language Access Team initially ran into challenges with the traditional process of translating public health information into the required forty languages because of the frequency of changes, turnaround time from translation agencies, and cost.[165] In response, the Language Access Team and Washington State Coalition for Language Access (WASCLA) developed a listserv of just-in-time translators. These were locally

[162] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[163] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[164] Seattle COVID-19 AAR
[165] COVID-19 PHSKC Key Informant Interviews. (2020-2021), COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021), Marx, C. (2021)

certified and experienced translators. The listserv allowed same day, 24-hour, and 48-hour turnaround times whereas the traditional method was taking the team up to 12 days. In addition, the new group of translators was more cost-effective and more culturally responsive as new information became available. PHSKC staff who filled the roles of PIO noted that there were substantial gains made in language accessibility that need to be sustained to address pre-COVID-19 equity gaps.[166] During the townhalls and Emergency Manager feedback sessions, community partners commended the language access program for their ability to rapidly translate documents into so many languages and for sharing accessible materials with community organizations involved in response.[167] There was consistent agreement across stakeholder groups that the language access program was a best practice.

Equity

The strong focus on equity allowed PHSKC to break down barriers of public perceptions around public health as a government agency. Maintaining a consistent focus on inclusion was noted by community partners to be a major strength in PHSKC's approach. With this focus, PHSKC made sure that information reached the people who needed it in the places that made sense. Trusted messengers were engaged to create and share culturally appropriate and accurately translated messaging. This included outreach to urban, rural, native, indigenous populations using trusted community members, spiritual leaders, and community organizations.[168] Establishment of dedicated community/multilingual media partners for external communications was also essential to promoting equity. Internally, identifying SMEs who were go-tos on topics like disease transmission streamlined and assured consistency in information.

There was a focused effort to ensure that plain language and common terminology was used to make translation easier and the messages more understandable. To ensure that the information shared with the community was applicable, PHSKC liaisons worked with community partners to determine the information that was needed and empowered trusted messengers, such as community navigators, with the information so that they could share it with their communities. There was also grant funding made available to CBOs translating and creating public health messaging to support work that was already being done by community partners.[169]

Community partners also noted that PHSKC shared public information in a way that was non-judgmental and personal. Representatives from PHSKC attending public meetings listened first and provided information and explanations after understanding where questions and concerns came from. This created an environment where stigma was reduced and mistrust could be addressed openly.[170]

While equity was an area of success for Public Information, accessible communications remains an area for growth. Dedication of more resources to health literacy needs, website organization and access, and creation of materials in visual and other alternate formats would have further improved information accessibility and

[166] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[167] COVID-19 PHSKC External Partner Townhalls (2022), COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[168] COVID-19 PHSKC External Partner Townhalls (2022)
[169] COVID-19 PHSKC External Partner Townhalls (2022)
[170] COVID-19 PHSKC External Partner Townhalls (2022)

understanding.

Areas for Improvement

Coordination/Collaboration

Changing guidance or rule changes from both federal and state partners were confusing and made it difficult to maintain up to date messaging.[171] Producing consistent and clear messaging for partners and the public required continual effort and resources. Operational updates from response teams, relied on by the PIO team to update partners and the public on response activities, were occasionally slow to arrive or inconsistent. When this occurred, the PIO team sometimes had an incomplete or inaccurate picture of current response activities.[172] The PICC sometimes received misdirected calls from the public or were referred calls by partners which could have been answered directly by DOH and other information lines.[173]

In the City of Seattle's AAR, it was noted that communications incident management structures worked well for coordination, but a formalized process should be in place prior to the next disaster and practiced in exercises. The report recommended that the Joint Information System (JIS) which evolved during the pandemic be formalized through liaisons between major governmental information centers.[174]

Systems or Infrastructure

The pace and scope of public Information needs challenged the team's ability to edit, refine and simplify materials. The volume, length and complexity of PIO resources created secondary challenges for both staff and the public. Designating a strong deputy content lead is valuable to help the team better prioritize and edit information products. Additionally, backlogs and delays in department administrative services such as human resources, procurement and contracting hindered the PIO's ability to keep pace with the rapidly evolving incident.

Lack of Flexibility

In the Seattle COVID-19 AAR, it was noted that the role of PHSKC should be informed by broader public health considerations.[175] The report indicated that public health's reluctance to provide guidance without scientific certainty created challenges implementing strategies in a timely manner. It stated, "this reticence, and the compounding fact that many public health directives were issued and later retracted or refined, certainly made it difficult for leaders who had committed to following the lead set by public health agencies." A similar sentiment was raised by a community stakeholder. Although they appreciated PHSKC's commitment to

[171] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[172] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[173] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[174] Seattle COVID-19 AAR
[175] Seattle COVID-19 AAR

following the science, there were times that things were delayed because the science was unclear and PHSKC was slow in releasing information or guidance.[176]

Mixed Findings

Information Technology Concerns

Similar to other groups, the PIO team saw both strengths and opportunities in the use of IT to support PIO activity. Innovations such as the creation of a media inbox, and use of Trello and slack to manage information will become an ongoing part of Communications team operations. At the same time, PIO staff experienced difficulty using established county resources such as SharePoint, OneNote, and Microsoft Teams.[177] System dependability, bugs and data loss, and limited training time while in an active response were common challenges identified. Externally, Public information teams experienced challenges accessing information from DOH's databases, hindering work during the response.[178]

HEALTHCARE SYSTEM SUPPORT

PHSKC's established and leveraged various existing partnerships to enhance coordination with healthcare system partners. Building on the rapid provision of clinical and technical assistant to LTCFs early in the response, PHSKC maintained regular presence at meetings with healthcare partners and direct communication with partners to share public health guidance and answer questions. PHSKC's Emergency Medical Services division also convened and facilitated a Regional Coordination Team that brought together representatives of healthcare system sectors (hospitals, pre-hospital, DOH) for updates, discussion, problem solving, and to coordinate response strategies. PHSKC collaborated closely with healthcare and other partners to monitor healthcare system capacity and implement or inform medical surge strategies when needed. This coordination and collaboration allowed for appropriate implementation of CDC PHEP capabilities *10 - Medical Surge,* and aspects *13 - Public Health Surveillance and Epidemiological Investigation*.

Strengths

Coordination/Collaboration

The EMS Division convened a Regional Coordination Team as an effective framework to coordinate between hospitals, medical program directors, and pre-hospital partners. Participants felt the meeting size, group makeup, and format allowed them to share ideas and problem solve openly.[179] The participants' expertise and flexibility allowed the group to pivot as needed to meet the changing needs of partners throughout the

[176] COVID-19 PHSKC External Partner Townhalls (2022)
[177] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[178] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[179] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

pandemic. With newly developed data dashboards and effective use of meeting minutes, the group was able to keep partners engaged and informed despite ongoing response demands and conflicts.[180]

Several healthcare partners felt that PHSKC's leadership as an agency throughout the pandemic was instrumental in their success at vaccinating large numbers and mitigating potentially higher death rates. They were impressed during the initial stages of the pandemic at the public health response to the first outbreak at a LTCF. The accessibility, leadership, resources, and expertise that the department brought forward made an incredible difference during incredibly challenging situations.[181] The group further commented that they felt very fortunate to have the leaders of PHSKC, with their experience, leading the county and the state in COVID-19 response measures.[182] Partners noted that PHSKC seemed to continue to refine their services and accessibility over time and their expertise and efforts to write the guidance made them a leader among peers.[183]

> *"The [PHSKC] team was very responsive, communicative and did a nice job steering our healthcare community in being collaborative in our response." – Townhall Participant*

PHSKC was also described by healthcare partners as being proactive and vested in ensuring healthcare providers received the supplies and support, they needed. It made a concerted effort before other Washington jurisdictions to reach at-home care providers (e.g., adult family homes, long term care homes) through outreach efforts with local fire departments. Teams from PHSKC also leaned in to anticipate future needs such as the impacts of a concurrent flu season and continued COVID-19 surge and looked beyond a traditional public health perspective to advocate for health needs in their community. One healthcare partner provided the example of PHSKC supporting interventions to address the long-term impacts of the pandemic on children's mental health and developmental needs.[184]

Relationship Building

Townhall participants representing healthcare membership organizations, such as Healthier Here, Adult Family Home Council, Northwest Healthcare Response Network, also noted that liaisons from PHSKC were beneficial. PHSKC liaisons were able to understand the needs of healthcare member organizations and provided a consistent contact to PHSKC more fully. The liaisons attended membership meetings, as well as community facing meetings, to share public health guidance and answer questions. While they served as subject matter experts, they spoke to meeting attendees as their neighbors.[185] They created a personable environment that encouraged members to feel comfortable asking questions and following up with the liaisons to build direct relationships and seek guidance when needed. Some partners noted that although their membership spread

[180] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[181] COVID-19 PHSKC External Partner Townhalls (2022)
[182] COVID-19 PHSKC External Partner Townhalls (2022)
[183] COVID-19 PHSKC External Partner Townhalls (2022)
[184] COVID-19 PHSKC External Partner Townhalls (2022)
[185] COVID-19 PHSKC External Partner Townhalls (2022)

across multiple jurisdictions, PHSKC was one of the only public health departments to consistently attend meetings and provide support to the organizations and their members.[186]

Standardization of Processes

King County had one of the first major outbreaks in a LTCF reported in the United States and responded in a proactive and timely manner. The PHSKC investigative team combined with experts from the CDC identified which policies, procedures and lack of equipment were most responsible for the outbreak within the LTCF. [187] These findings were widely published by the Centers for Disease Control (CDC) in mid-March, potentially improving preventative care at numerous long term care facilities throughout the county, state, and country and saving lives.

While findings were limited based on knowledge of COVID-19 at the time, five different factors that were problematic and six proposed actions to slow the spread of the outbreak within a long-term care facility setting were proposed. The areas identified as problematic were a combination of unintentional spread by staff members, lack of PPE and training to increase early identification of COVID-19 symptoms. King County implemented the identified findings of screening staff and visitors, introducing policies which actively monitored symptoms in residents, restricted group activities, trained staff, and ensured PPE availability by coordinating with supply chains at the county and state levels.[188]

PHSKC identified every facility with COVID-19 cases and prioritized those facilities for emergency testing, assessment, training, and support. The rapid response of PHSKC to identify specific populations that were highly vulnerable to the disease and implementing an effective strategy to mitigate that threat demonstrated a timely and comprehensive response in initiating the appropriate public health interventions and medical countermeasures.

Mixed Findings

Lack of Coordination/Collaboration

Public Health, healthcare, and governmental partners collaborated to monitor the capacity of the healthcare system and implement medical surge strategies when needed. Public Health provided subject matter expertise and worked to issue local health officer directives when appropriate. Examples of actions taken by healthcare in coordination with PHSKC were collecting and analyzing data on the shared WAHealth platform, following a consistent visitor policy, interpreting state and national guidance and advocating for policy changes, expanding and contracting capacity, accepting patients from other areas of the state, modifying discharge procedures, developing consistent procedures for vaccine roll out to priority populations, and sharing information through regular calls and other forums. The most severe healthcare system impacts

[186] COVID-19 PHSKC External Partner Townhalls (2022)
[187] McMichael TM, Clark S, Pogosjans S, et al. COVID-19 in a Long-Term Care Facility — King County, Washington, February 27–March 9, 2020. MMWR Morb Mortal Wkly Rep 2020;69:339-342.
[188] McMichael TM, Clark S, Pogosjans S, et al. COVID-19 in a Long-Term Care Facility — King County, Washington, February 27–March 9, 2020. MMWR Morb Mortal Wkly Rep 2020;69:339-342.

experienced in other areas of the country were avoided in King County by strong collaboration and swift decisive action.

The EMS Division team noted that public health and emergency preparedness staff often did not understand EMS operations within King County and vice versa being true as well.[189] This made it difficult to rapidly develop strategies without first spending time establishing a common foundation of knowledge. Adequate representation of hospital interests was also a challenge due to Harborview Medical Center being the sole representative of hospitals on the group. Although this hospital's leadership was expected since it was the Disaster Medical Coordination Center, representation from more hospitals would have allowed them to have a stronger voice within the coordination team to ensure their interests were represented.[190] Finally, the EMS Regional infectious Disease Plan was noted as being out of date by not reflecting "current hazards and the concept of operations" used in the pandemic.[191] While each challenge is unique in its own right, all share a common cause of a long delay between activation of the Regional Coordination Team. As noted by the team, "relationships needed to be refreshed and procedures socialized again to maximize the team's productivity."

Multiple starts and stops over the years for regional medical surge planning, competing stakeholder visions, evolving best practices at the national level, healthcare system consolidation and turnover meant that King County started the Covid-19 pandemic response without a county-specific detailed regional healthcare surge plan. A healthcare surge framework for Western Washington existed but did not provide the necessary specificity or speak to King County's unique resources and needs. One notable exception is crisis standards of care where King County had done extensive planning and long been a lead for the nation.

Detailed, regional pre-planning on alternate care systems incorporating needs such as federal and state resources like Federal Medical Stations, Disaster Medical Assistance Teams, resource prioritization, expansion of the workforce would have reduced some of the complexity and time necessary for working out these issues during the response.

ISOLATION AND QUARANTINE (I&Q)

PHSKC clinical and frontline staff, and in coordination with other King County departments, led critical isolation and quarantine (I&Q) services for King County residents who either cannot I&Q at home or who do not have a home. Early in the pandemic, these services included arranging quarantine for travelers at hotels. They later grew to conducting medical and behavioral health screening of referred guests and provision of services on site, operating multiple I&Q facilities that served both adults and families, and coordinating transportation to and from I&Q sites. In January 2021, King County I&Q served its 2,000th guest and in January 2022, occupancy at PHSKC's primary I&Q facility averaged 90 guests per night and was still rising. PHSKC's care coordination services supported people isolating and quarantining by providing and arranging immediate supports (e.g., grocery deliver, PPE kits, bill assistance) and linking them to longer term supports (e.g., food and utility assistance,

[189] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[190] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[191] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

housing, healthcare, unemployment supports). PHSKC's exemplary efforts in isolation and quarantine directly reflect appropriate implementation of CDC PHEP capability *11 - Nonpharmaceutical Interventions* and the application of capability *7 - Mass Care*.

Strengths

Teamwork

By utilizing diverse subject matter expertise and a culture of teamwork, I&Q teams were able to rapidly build and implement a capability beyond the scope envisioned by previous planning and response efforts. Having departmental leadership support to pivot early and often, staff felt empowered to act and meet needs in innovative ways.[192] Bringing together team members from public health, emergency management, medical, and behavioral health backgrounds, these teams established a culture of unity, collaboration, and flexibility that allowed them to navigate challenges throughout the response.[193] Effectively coordinated communication channels, daily huddles and progress tracking, a centralized scheduling system, and an expanded leadership structure including charge nurses to meet supervision needs were noted as key functional elements of the teams' success. [194]

Quality Assurance and Control

I&Q sites operated by PHSKC and Department of Community and Human Service (DCHS) teams were seen as a major success and community members who stayed in them gave mostly positive feedback.[195] Aside from providing typical services to support guest comfort during isolation and quarantine, a highly successful strategy was the integration of care across behavioral health, medical care, and harm reduction approaches. Collaboration between behavioral health and public health staff improved overall care, increased patient advocacy, and facilitated better clinical decision-making.[196] In addition to behavioral health staff and registered nurses working as a team during assessments, staff were able to maintain a continuity of care by following up with patients in emergency rooms and care coordination systems.[197] These features combined with a harm reduction approach made I&Q facilities more accessible and allowed the program to serve target populations more effectively.[198]

Areas for Improvement

Team or Staffing Capacity

While I&Q operations were successful overall, involved teams noted consistent challenges around staffing, logistics, IT, and a need for 24/7 support for their operations. Although nearly every response team struggled with staffing challenges, I&Q teams faced unique hurdles. One interview noted that PHSKC was aware from

[192] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[193] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[194] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[195] Marx, C. (2021)
[196] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[197] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[198] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

previous disease outbreaks that they had insufficient resources for I&Q operations.[199] Identified information gaps included knowing ahead of time where to shelter individuals with no access to housing and identifying behavioral health resources to ensure quarantine was preserved.[200]

As the complexity of the pandemic increased, it became incredibly difficult for these teams to forecast staffing requirements due to uncertainty surrounding patient surge and acuity. It was difficult to ensure facilities were staffed with individuals possessing strong clinical skills required to meet clients' needs and there was a need to develop a sustainable staffing model given the qualifications required for staff.[201] It is important to note that while this was initially a challenge, lessons learned over time were used for ongoing I&Q process improvements.[202]

Lack of Systems or Infrastructure

Adequate logistical and IT support produced difficulty for these teams as well. Onsite there was insufficient storage space and it was sometimes difficult to access materials from storage.[203] Existing I&Q protocols also did not include establishing a communication infrastructure onsite which delayed these systems. For example, it took roughly a month for a mailstop to be established for these teams.[204] It was also noted that facilities often lacked proper equipment such as wheelchairs that could fit into rooms, sufficient PPE, and food to meet dietary requirements of guests.[205] Furthermore, challenges regarding specialized technology for client care and broad departmental IT systems were common across the teams. Participants noted these systems were at times cumbersome, not user friendly, and individuals experienced difficulty and delays in getting access to systems.[206] Given I&Q operations occurred 24/7, it was a unified finding that these teams required 24/7 support to be able to operate.[207] Changes in process, protocols, and site locations over time amplified these ongoing challenges significantly.[208]

Lack of Coordination/Collaboration

Screening and clinical services teams expressed significant challenges around partner coordination and referrals for I&Q sites. Specifically, teams found it difficult to communicate with hospitals and other external partners due to HIPPA limitations and a lack of clarity around boundaries of care that PHSKC facilities could provide.[209] This led to hospitals often sending individuals back to I&Q that were too ill or required higher levels of care. Referrals were also a noted challenge as sites had no way to contact individuals coming from jails in advance, referrals often came in late at night due to 24/7 operations, and some people making the referrals

[199] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[200] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[201] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[202] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[203] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[204] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[205] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[206] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[207] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[208] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[209] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

were not with the individuals they were referring.[210] These challenges dramatically complicated intake and coordination processes for I&Q teams.

I&Q teams also noted there were no plans for guests with care needs that were beyond the scope of PHSKC facilities but also below acuity thresholds for inpatient care.[211] This left some groups of patients unserved by existing systems. Harm reduction approaches were also challenging to implement due to staff's limited experience with harm reduction and differing personal opinions and approached about the topic.[212]

Mixed Finding

Standardization of Processes

PHSKC's Care Coordination Program provided innovative assistance to individuals and families allowing them to follow I&Q guidelines by providing resources and service coordination. This program encountered both successes and challenges in its development and implementation. One strength was the deliberate focus on addressing needs of impacted populations opposed to undertaking more formal and slow planning processes.[213] With an equity focus, the Care Coordination Program developed diverse teams to meet community needs and responded to feedback about a lack of race/ethnicity data by improving demographic data collection.[214] Effective team practices provided a foundation for operations through strategies such as an open chat to resolve questions in real time, staff training on mental health first aid and motivational interviewing, and a buddy system to balance workload and staff coverage. County-funded programs provided more certainty that applicants would receive aid and programs such as Stipend for Workers in Isolation and Quarantine (SWIQ) and Household Assistance Request (HAR) helped fill gaps in existing resources.

Although largely successful, this program ran into multiple challenges during stand-up and operation. While the rapid mobilization of the program was successful, building it from the ground-up required significant time and coordination.[215] Program requirements related to paperwork, application and verification timelines, and household composition requirements all produced barriers in meeting needs. Issues regarding payment delays and errors also hindered assistance while insufficient assistance amounts and inconsistent funding meant needs were left unmet.[216] Finally, inconsistent program requirements from the state, differing processes between DOH and PHSKC contact tracing programs, and delays in PPE/food kits from DOH presented challenges for effective program implementation.[217]

[210] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[211] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[212] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[213] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[214] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[215] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[216] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[217] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

RESOURCE MANAGEMENT

PHSKC conducted a number of logistical and resource management activities in support of the COVID-19 pandemic response. PHSKC teams provided or coordinated internal logistical support needs for Public Health's COVID-19 operational response activities. This included the capable execution of CDC PHEP capabilities such as *3 - Emergency Operations Coordination* and *9 - Medical Materiel Management and Distribution* in areas such as resource ordering, facilities, transportation, equipment maintenance, security, food service, fleet services, and supply distribution. PHSKC logistical teams also supported resources for community partners involved in the Public Health response, such as healthcare facilities, childcare agencies, local governments. A key logistical and resource management focus area for PHSKC, in coordination with and with support from several other King County departments (e.g., OEM, FMD, FBOD), was procuring, warehousing, allocating, and distributing personal protective equipment (PPE). As of February 2022, PHSKC distributed over 1.4 million N95s, 3.7 million surgical masks, 20 million gloves, and 1.6 million gowns to long term care facilities, health clinics, EMS, congregate settings, community-based organizations, and other critical care agencies.

Strengths

Standardization of Processes

The COVID-19 pandemic created incredible demands on existing and emergency response resource management systems across the world. Rising to meet this significant challenge, HMAC Logistics and Supply Management teams were able to establish effective internal and external communication channels, improve situational awareness through a use of a single point of contact for each supply team, and develop close partnerships with HMAC Operations and external partners.[218] By developing standardized ordering processes, forms, and job actions sheets, logistics was further able to provide structure and clarity to an otherwise complex and opaque function.[219] This structure was supported by the use of shared inboxes to centralize communication and WebEOC to conduct resource tracking. A unified core mission and a culture of adaptability allowed the team to "bend without breaking" despite demanding and uncertain operational conditions.[220]

In response to scarce PPE resources, logistics and supply management teams developed a PPE algorithm to manage requests, improve overall efficiency, and create a data-driven system for allocating resources.[221] Although the algorithm's priorities and role were not clear for internal and external partners initially, this system allowed logistics teams to automate many portions of the allocation process and equitably prioritize limited PPE resources.[222]

[218] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[219] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[220] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[221] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[222] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Teamwork

The Logistics Section noted in their hotwash that their teamwork was a strength.[223] They cited that the core mission brought the team together to navigate the demanding and uncertain situation. The team also demonstrated high levels of adaptability and flexibility as processes changed. The team felt there was strong internal support and support from other King County departments. The team also cited a specific relationship with FMD through a direct liaison as a best practice. The support allowed them to communicate across groups early on and work with appropriate sections as needed.

Areas for Improvement

Unclear Processes

Despite generally strong coordination with other teams, logistics staff indicated difficulty maintaining awareness of the various response teams' responsibilities and experienced a lack of role clarity between other groups and organizations.[224] Warehousing functions also had several noted issues including non-centralized resources leading to multiple systems across warehouses and consistent uncertainty regarding the longevity of warehouse operations.[225] Without an integrated, efficient inventory management system across logistics and supply management activities, these teams routinely had difficulty maintaining situational awareness of resources and effectively coordinating supply requests.

There was also confusion and administrative burdens created by the purchasing processes for Logistics and Supply Management teams. Understanding who was eligible to order what, who could approve purchases, who was responsible for tracking supply deliveries, a lack of proper paperwork for requests, and limited available staff with purchasing authority were routine challenges for these teams.[226] Additionally, as contracting became a major body of work, PHSKC was unable to scale contracting operations to match response teams' needs.[227] It is important to note that, despite these process challenges, staff were able to establish strong collaboration between PHSKC staff and external institutions to expedite contract development as the response progressed.[228]

Systems or Infrastructure

Among teams utilizing PPE, such as isolation and quarantine and testing teams, there were significant difficulties in securing sufficient PPE to conduct safe operations during the response in the early response phases. Old and expired equipment, supply chain disruptions, limited supply relative to demand, and inadequate preparedness stockpiles were noted as contributing factors.[229] Determining which staff required the limited resource of fit testing was also a challenge, particularly for nursing and professional service

[223] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[224] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[225] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[226] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[227] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[228] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[229] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

teams.[230] These challenges combined with a high volume of resource requests presented significant logistical hurdles and impacted operations.

Flexibility/Adaptability

Some health providers that were eligible for supplies were initially unable to access them. PHSKC offered hygiene and PPE, but providers were required to go to the warehouse to pick them up. It was not possible for some providers due to the logistics of leaving the people they care for unattended and concerns about potential exposure. Once PHSKC was made aware of these limitations, distribution was adapted and became more accessible. Teams distributing resources were credited with learning from challenges early on and making changes.[231]

PUBLIC INFORMATION CONTACT CENTER (PICC)

PHSKC launched a dedicated Public Information Contact Center (PICC) on March 3, 2020. During much of the response, it was staffed at least eleven hours per day to assist callers seeking COVID-related medical information. In addition to triaging calls from the community and providing education and guidance regarding COVID-19, the PICC supported other response operations and provided community with linkages to services, such as testing, vaccinations, and isolation and quarantine. The PICC was an additional demonstration of the CDC PHEP capability *4 - Emergency Public Information and Warning* beyond what was already accomplished with their efforts in the Public Information focus area presented earlier in this report. The PICC served callers in many languages and with disability accommodation needs. In December 2020 alone, the PICC received over 30,000 calls. In early 2021, the PICC was averaging 700-1,000 calls per day, with calls per day trending upward until the PICC reached a new single-day call record on January 3, 2022 with 1,600 calls answered.

Strengths

Teamwork

The PICC noted a focus on teamwork and a collaborative environment as key to its success. Managers and staff came together quickly to solve problems and team members treated one another with respect and kindness. Teams recognized response as a continual learning process[232] Although understaffed early in the response, the PICC received robust staffing support through engaging registered and student nurses, the National Peace Corps, and the Public Health Reserve Corps.[233] PICC operators were onboarded using developed trainings, desk aids, and workflows created by PICC administrative support. To ensure effective internal coordination, the PICC hosted a weekly leads meeting which featured guest speakers presenting on

[230] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[231] COVID-19 PHSKC External Partner Townhalls (2022)
[232] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[233] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021); Marx, C. (2021)

issues impacting the teams' work,[234] as well as weekly operations meetings with HMAC staff. Staff reported working in the PICC a meaningful experience and would work in the PICC again.

Quality Assurance and Control

It proved critical to have a clinical provider on staff each shift at the PICC to manage calls related to medical concerns, assess eligibility for I&Q services, and refer callers for additional medical services. Different ratios of clinical and non-clinical call takers were experimented with during the response and having the majority of call takers non-clinical seemed to best meet caller needs and manage costs. Future conversations are needed about the balance of clinical and non-clinical call takers and will depend on decisions about the future scope and direction of the PICC.

Relationship Building

Achieving the mission of public information in a way that reached all communities required extensive resources and partnerships. The PICC used partnerships to achieve success within its operational areas. By collaborating with Seattle-Customer Service Bureau (CSB), the PICC was able to redirect nonmedical calls to their center reducing the call volume for the team and allowing them to focus on medical calls.[235] Within the response, the PICC coordinated closely with both HMAC operations and King County Information Technology (KCIT) to ensure they maintained situational awareness of response activities and received the technical and other support required to conduct their work.[236] Successful collaboration and redirection of calls between the PICC, King County business line, and collaboration with the City of Seattle CSB, helped lower caller wait times and enhance the detail and timeliness of information provided to callers. These relationships and systems were built over time. A preexisting roster of community partners like the City of Seattle CSB, Crisis Clinic, or King County customer care line that can immediately assist with contact center operations would have helped the PICC expand more rapidly to accommodate increasing call volume.

Equity

Strong support exists for maintaining the PICC as an ongoing community resource. Trust in Public Health and trust for nurses as a profession uniquely positions the department to provide support, education, guidance, and linkage to services. Sustainment of the PICC could uplift all in our community especially groups that experience health inequities and access issues.

"They showed up and listened first asking 'What kinds of questions are you getting from community members you're serving?' and then provided information." - Townhall Participant

[234] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[235] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[236] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Areas for improvement

Lack of Communication

The PICC noted that, at times, "…the scope of work and overall purpose was not clearly defined, and stakeholders had different visions about the purpose of the PICC…".[237] This made it difficult for PICC management to navigate roles, priorities, and strategies amongst the uncertainty.[238] Consequentially, significant work was required to produce consistent messages with clear information for partners and the public. Unexpected and changing guidance also produced significant challenges. Guidance and rules from federal and state partners were confusing and sometimes contradictory. The PICC and public Information teams did not always receive Information at the same time.[239]

Partner coordination around referrals also presented a challenge. The PICC coordinated with an extensive list of outside partners such as labs, businesses, and shelters to resolve caller concerns. There was some overlap between various Information lines available to the public.

Communications

Receiving what needed to be nearly real time updates from Communications will always be a challenge for a PICC. The PICC often learned of new updates from the public before they were shared by Communications. In the vast majority of situations, the PIO team skillfully provided updated content and current, approved advice. PICC managers and Public Health programs sometimes had competing visions for the PICC and PICC management felt their recommendations did not always receive sufficient weight or their voice was not always heard. PICC management sometimes lacked a clear understanding of their priorities. Response operations overall lacked clarity in defining which public calls should be answered by the PICC and which should be referred to other PH programs.

Information Technology Concerns

Public Information Contact Center staff experienced challenges throughout the pandemic navigating and coordinating with technology resources. Both the PICC and PIO groups noted difficulty using established county resources such as SharePoint, OneNote, and Microsoft Teams.[240] A lack of dependability, issues with bugs and data loss, and limited time to learn systems while in an active response were common challenges identified. Some technology did not meet the PICC's operational needs such as Skype for Business lacking quality control tools and InContact being unable to meet the performance requirements of call agents.[241]

[237] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[238] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[239] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[240] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[241] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

System access issues, KCIT response times, and information management further Impacted operations, even with a part-time KCIT liaison assigned. Development of a chatbot could have decreased calls to live operators.

Systems or Infrastructure

Even with PHSKC's prior experience operating contact centers for H1N1 Influenza and Zika to draw on, systems and infrastructure were not without Its challenges. Lack of integration of PICC staff into forums where Incident Information and resources needs were discussed, the short time commitment of PICC staff like nursing students, and the brutal work required to staff 7-day, 15-hour operations created a constant need for training and onboarding, gaps in coverage, varying levels of proficiency among call takers, and burnout among staff. Limited access but high expectation to interact with information in a DOH database for vaccination records was also difficult. High quality system and process documentation supported staff onboarding and smooth operations but was time intensive to produce and maintain.

COMMUNITY-BASED INITIATIVES

PHSKC launched a number of community-based initiatives designed to provide technical assistance and resources to the community as needed public health guidance and policies evolved, such as vaccine verification requirements. In its first month (July 3 - Aug 3, 2020), PHSKC's Safe Starts for Taverns and Restaurants (SSTAR) provided community education and completed 423 inspections of food establishments to support compliance with Safe Start WA reopening requirements. PHSKC's Ventilation and Indoor Air Quality program worked with businesses, schools, childcares, faith-based and community-based organizations to improve indoor air quality in facilities open to the public to reduce transmission of COVID-19. PHSKC's Food Security Assistance Program worked with community partners to provide people deemed food insecure with food vouchers and supports to purchase local, culturally appropriate food. These initiatives also provided tangible resources to businesses and nonprofits, including HEPA filters/air cleaner units, grocery vouchers, and economic assistance. This important work with partners fulfilled several CDC PHEP capabilities such as *1 - Community Preparedness, 2 - Community Recovery, 7 - Mass Care,* and *8 - Medical Countermeasure Dispensing and Administration*. Partnerships with funders to support community outreach and education, including redirecting existing resources to meet community needs resulting from COVID, were incredibly valuable. Together these programs outreached to diverse communities and built relationships to support community members and establishments as the county navigated COVID-19 public health policies and guidance.

Strengths

Relationship Building

COVID-19 brought significant challenges and additional requirements for businesses to operate safely. The Vax Verify, EHS Safe Start, EHS Ventilation & Indoor Air Quality Program, and Government Affairs teams engaged the business sector through strategic partnerships that made their efforts successful. At a high level, HMAC Policy & Government Affairs teams established coordination with stakeholders through a regular cadence of

meetings and a model designed to facilitate collaboration between businesses and operational areas.[242] These partnerships were then operationalized by both the EHS and Vax Verify teams. Both programs represent a rapid development of new services that required extensive cross-divisional collaboration to be successful. By collaborating closely with the business and non-profit communities, these services were able to successfully build trust and support highly impacted sectors.[243]

EHS teams noted that collaborating with organizations to understand their challenges helped ease tension and improve cooperation, proper signage increased legitimacy, and many businesses appreciated the information being provided.[244] Instead of only issuing guidance and requirements, these programs provided tangible support to organizations through technical assistance, supplies, and cost reimbursement support.[245] Data from other portions of the response, such as syndromic surveillance data and weekly situational reports, helped inform effective decision-making around program efforts.[246] Additionally, while being able to leverage public health authorities to undertake regulatory efforts through emergency rule making was helpful, these teams found great success with cooperative compliance via education and technical assistance as well.[247] Furthermore, by engaging with community-based organizations to support outreach and providing information across multiple languages, these teams were able to engage diverse communities that may have otherwise been missed.[248] EHS teams noted that clear programmatic structure and roles, effective internal communication practices, and team onboarding programs significantly contributed to the success of these efforts.[249]

[242] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[243] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[244] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[245] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[246] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[247] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[248] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[249] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Innovation/Success: Safe Start for Taverns and Restaurants (SSTAR) Team

A Bronze Innovation Practice Award was awarded to PHSKC's SSTAR Team by the National Association of County and City Health Officials (NACCHO). The SSTAR Team was developed in the summer of 2020 to mitigate the Impact of COVID-19 on businesses and the local economy. This team helped food businesses comply with COVID-19 regulations to protect the health and safety of customers and staff and served as a resource to owners and managers to limit the likelihood of business Interruptions. The SSTAR Team provided guidance to 3,400 food businesses on how to Implement public health guidance and $400,000 In financial assistance to small food companies to help limit the financial Impact of Implementing COVID-19 regulations. A recipient of the SSTAR financial assistance noted that they "felt like they [the SSTAR Team] went above and beyond in helping people."*

*"Public Health Receives National Recognition for Innovation in Pandemic Response." Public Health Insider, Public Health- Seattle & King County, https://publichealthinsider.com/2021/06/09/public-health-receives-national-recognition-for-innovation-in-pandemic-response/. 9 June 2021.

Image 10: Mask requirement signs in different languages.

Equity

The Food Security Assistance Program was established to rapidly distribute $2,150,000 worth of food vouchers for people deemed food insecure and awarded $2,600,000 to organizations to purchase culturally appropriate foods. Recognizing this is a significant task that requires community partnerships, the team partnered with trusted community-based organizations and local grocers, restaurants, and farms to reach communities in need.[250] These partnering efforts resulted in successfully reaching communities most impacted by food insecurity, allowed the program to provide culturally appropriate foods, and supported community grocers.[251]

By partnering with Safeway, the company was able to design, print, and distribute 21,500 $100 vouchers to community-based organizations at no charge. These vouchers were also valuable because they gave individuals autonomy in their food choices.[252] The initiative of awarding 2.6 million in funds for food distribution and covering the operational cost of distributing food allowed King County to meet a known gap of providing culturally appropriate foods.[253] This initiative also allowed the county and community organizations to support local grocers, restaurants, and farms which needed the economic support during the pandemic. Empowered CBOs also developed new distribution points which expanded the reach of food assistance.[254]

[250] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[251] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[252] After Action Report, 2020 Food Security Assistance Program, March 2021
[253] After Action Report, 2020 Food Security Assistance Program, March 2021
[254] After Action Report, 2020 Food Security Assistance Program, March 2021

Innovation/Success: Safeway Vouchers

Between October 1 and December 31, 2020, 95% (or 20,398) of Safeway vouchers distributed were redeemed totaling $2,025,645.09. Transaction details showed that 90% of the food vouchers redeemed were used in areas of South Seattle and South King County, communities that were disproportionately impacted by COVID-19 and experienced food insecurity at higher rates. *

* After Action Report, 2020 Food Security Assistance Program, March 2021

The Food Security Assistance Program was not without challenges, but the discovery and acknowledgement of these difficulties was captured due to the diligence of the King County AAR team. King County completed a thorough analysis of this effort and published those results in March 2021.[255] Despite these challenges, the Food Security Assistance Program was able to successfully implement an innovative and community-centered approach to meeting food security needs during the pandemic.

Areas for Improvement

Quality Assurance and Control Concerns

While experiencing many successes in partnering with organizations, both Vax Verify and EHS programs encountered a multitude of challenges related to organizational non-compliance. These challenges stemmed from a lack of trust and fear resulting in animosity directed towards PHSKC teams working with business owners and their customers. Engagement teams noted that some businesses were not aware of the mask or vaccine mandates, some halted enforcement due to concerns around loss of business or aggressive responses from patrons, and others were hostile to public health engagement.[256] These barriers were amplified by navigators entering areas they were not familiar with, inconsistent communication and follow-up, and conflicting messaging and coordination around pandemic restrictions.[257] Broad public discourse regarding the pandemic, effectiveness of mitigation measures, role of public health, in addition to the "rumor mill" at times made it difficult to secure compliance from organizations. Rapid changes in guidance at state and national levels made it even more difficult for EHS teams and the organizations they were supporting.[258] The teams noted ongoing community engagement, outside of response activities, and engagement of the community as emergency rules/programs are being developed would significantly mitigate these challenges.[259]

Equity Concerns

Although largely successful, the food security program experienced challenges meeting demand which dramatically outpaced supply, encountered challenges with restricted funding, suffered impacts from supply

[255] After Action Report, 2020 Food Security Assistance Program, March 2021
[256] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[257] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[258] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[259] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

chain disruptions, and noted significant administrative burden placed on partnering community-based organizations. The voucher program was unable to provide a sufficient amount of culturally appropriate foods and King County was unable to support the 32 organizations administratively which limited some of the distribution of funds. [260] Transportation was a barrier at times for both the CBOs and their populations. This was especially true for those experiencing homelessness and with limited mobility. The effort to purchase foods from smaller ethnic grocery stores was hampered by the ability to meet the capacity required by CBOs for this initiative or to offer gift cards.[261] Supply chain Issues also complicated this effort as there were manufacturing and transportation issues that impacted the availability of goods. Longer funding periods and greater flexibility in purchasing from ethnic restaurants as well would allow grocers to work through some of the stocking and supply issues. [262] The capacity of the county to manage the contracts with all CBOs assisting with the food security program could be better executed by hiring more staff to manage this effort or outsourcing this contract management.[263] The transportation barrier for the distribution of vouchers could be mitigated with centralized distribution point, mailing system and partnering with an organizations like Public Health Women, Infants, and Children (WIC).[264]

[260] After Action Report, 2020 Food Security Assistance Program, March 2021
[261] After Action Report, 2020 Food Security Assistance Program, March 2021
[262] After Action Report, 2020 Food Security Assistance Program, March 2021
[263] After Action Report, 2020 Food Security Assistance Program, March 2021
[264] After Action Report, 2020 Food Security Assistance Program, March 2021

TESTING

PHKSC conducted a range of testing activities across a range of programs, including high volume sites, testing at County operated public health centers and correctional facilities, and through distribution of rapid antigen over the counter tests to community organizations. Testing services were at first limited to healthcare workers, first responders, and individuals in high-risk groups, but expanded rapidly as more supplies were available from the federal government and vendors. King County testing sites conducted over 200,000 tests in 2020, and by March 2021, testing sites had conducted 1 million PCR tests. PHSKC testing efforts closely align with CDC PHEP capabilities *12 - Public Health Laboratory Testing* and *13 - Public Health Surveillance and Epidemiological Investigation*, but as in many areas they fulfilled this capability in an extraordinary way over a long period of time. In January 2022, an average of over 11,000 tests were being performed daily at testing sites. King County employed a data-driven approach to its testing strategy, which was informed by community feedback and focused on providing testing to populations at highest risk of serious illness or death from COVID-19.

Strengths

Coordination/Collaboration

Externally, testing teams collaborated with local elected officials and research organizations to quickly set up sites with different models to adapt to the needs of that individual site.[265] Teams were successful in establishing partnerships across various agencies, jurisdictions, and labs to meet the operational needs of testing sites.[266] They worked with partners and internal PHSKC teams to identify areas of highest need for COVID-19 testing and worked extensively with municipalities, businesses, etc. to set up and run PHSKC testing sites in the community. To ensure they were meeting community needs, the Testing Strategy Team coordinated with key stakeholders by participating in routine meetings such as the South Sound Regional Testing Meeting.[267]

Through coordination with community partners, appropriate sites were located, and contract leasing of the locations was established for PHSKC run testing sites. The PHSKC team organized staffing and ensured labs received and processed tests. For department run sites, the team also adapted and configured the testing registration system and worked with community groups to ensure equitable access to testing.

Outside of larger routine meeting groups, specific collaborations to meet the needs of partner facilities were also successful, such as a partnership with long-term care facilities to develop and implement policies to increase testing.[268] Collaboration with the Department of Adult & Juvenile Detention (DAJD) also enabled the JHS team to establish effective surveillance testing schedules, testing processes, and contact tracing processes keeping positive rates extremely low compared to similar settings.[269] A culture of collaboration and willingness

[265] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[266] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[267] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[268] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[269] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

to "drop what we were doing to address urgent issues/needs" was identified as a key to success between the teams.[270]

CDC staff integration and assistance for testing was also noted as a valuable partnership in the early stages of large-scale testing.[271] CDC staff were able to reduce the steep learning curve for PHSKC staff and volunteers by providing information about testing supplies, standards, and PPE. This also included PPE procedures associated with testing. The CDC arrived with some protocols and others in draft for COVID-19 testing. These protocols were combined with guidance to create a protocol and training plan for the mobile testing team. The CDC staff assisted in training Public Health Reserve Corps members and staff that would support mobile testing operations.

Teamwork

In the early stages of the response, PHSKC was able to leverage multidisciplinary teams within their department to make decisions on testing supplies and priorities. Internal expertise about various testing modalities helped navigate early information on emerging testing modalities to identify PCR tests as a target option. PHSKC staff with strong connections to the community were able to target high-impact locations for testing sites.[272] Combining the two components allowed for data driven decision-making around high throughput testing sites that would benefit the community most.[273]

Among other components for success, these teams noted leadership support and timely decision-making, multi-disciplinary makeup of teams, diversification of vendors and labs, operational autonomy and flexibility among the teams and staff, and data-driven decision-making as being particularly important.[274]

Equity

PHSKC's equity efforts around testing represent best practices for other public health agencies.[275] Specifically, notable efforts included focusing testing efforts in South King County due to COVID-19's prevalence in that area. Testing sites were placed in locations with high throughput because of data driven analysis.[276] In addition, the testing website provided information in 13 languages through downloadable PDFs. The testing website also provided information on steps that lower barriers to testing such as testing availability regardless of citizenship/immigration status, no ID requirement, and no cost testing/no insurance requirements.

On June 14-15, 2020, Ms. Tina Knowles-Lawson #IDidMyPart campaign and Beyoncé's BeyGood Initiative partnered with King County and local health organizations to help provide free drive-through COVID-19 testing. This testing was available for anyone who had COVID-19 symptoms or who believed they had been

[270] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[271] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[272] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[273] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[274] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021); PHSKC COVID-19 Feedback from Zone 1,3,5 EMs
[275] Bay Area Regional Health Inequities Initiative (BARHII) and the Public Health Alliance ff Southern California (The Alliance), Embedding Equity into Emergency Operations: Strategies for Local Health Departments During COVID-19 & Beyond. July 2020.
[276] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

exposed to the virus. The Somali Health Board led the outreach effort alongside King County, with over 30 community organizations supporting.[277] The outcome of this unique event was reaching a large portion of the community who were people of color, immigrants, refugees, and essential workers. Over the two days, King County administered 1,205 COVID-19 tests and provided face coverings and care packages to over 3,500 individuals and families.[278] King County also provided onsite interpretation services in over 25+ languages and written material with up-to-date public health information.[279] Additional outreach such as playing cultural music, having a greeter, and providing mental health resources added to this remarkable event. The testing was provided by King County Seattle - Public Health and testing was conducted by SeaMar Community Health Center, HealthPoint Health Center, and Harborview Medical Center. This event was indicative of the outreach demonstrated by King County to reach populations disproportionally effected by COVID-19 and historically distrustful of the healthcare system.

Systems or Infrastructure

Selecting multiple labs to support testing sites was valuable in preventing a single point of failure, if a lab was unable to process testing samples.[280] For example, in the early part of the pandemic, there were often limited laboratories that could process COVID-19 test samples, leading to delays in receiving results. Having multiple labs selected increased scalability as more testing sites came online, since testing sites were not sending their samples to the same laboratory for processing. This supported continuity, scalability, and reducing wait times for results which allowed for timely notification to help prevent the spread of the virus.

Areas for Improvement

Unclear Processes

While testing teams were able to find success over time, there were significant challenges noted across the testing teams in establishing and maintaining operations early in the response. Many team members were unfamiliar with ICS and there were not existing detailed plans for setting up testing facilities at the scale required.[281] Communication clarity was another noted issue with confusion as to which testing group or partner had specific communication responsibilities.[282] Testing teams indicated there was a similar lack of clarity early in the response related to available materials, approvals and process changes, conflicting

[277] Mohamed, Hamdi and Senayet Negusse, #IDIDMYPART King County Drive Through Testing Report, King County Office of Equity and Social Justice. Date unknown.
[278] Mohamed, Hamdi and Senayet Negusse, #IDIDMYPART King County Drive Through Testing Report, King County Office of Equity and Social Justice, date needed.
[279] Mohamed, Hamdi and Senayet Negusse, #IDIDMYPART King County Drive Through Testing Report, King County Office of Equity and Social Justice, date needed.
[280] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[281] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[282] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

guidance, and funding.[283] In terms of resources, testing teams initially struggled getting access to required IT systems, and experienced significant difficulty in forecasting and receiving both PPE and testing supplies.[284]

Lack of Systems or Infrastructure

As the pandemic unfolded, significant demands were placed on laboratory systems across the country to adapt to new testing protocols and provide results at scale. Coordination and communication across the laboratory system was a noted issue at several points of the response. Between Washington DOH, PHSKC, and various lab partners statewide, communication and coordination were inconsistent.[285] At times, the PHSKC testing team had difficulty maintaining adequate awareness and visibility over labs within the area. Additionally, challenges arose around understanding and implementing Clinical Laboratory Improvement Amendment (CLIA) waivers and the ability of PHSKC to reimburse early testing providers.

The PHSKC testing team was also challenged by long test result turnaround times from the CDC early in the pandemic.[286] When testing supplies were scarce, agencies such as FEMA only offered PHSKC supplies if it agreed to adhere to the entirety of federal directions and guidance, which included shipping specimens to labs on the east coast with federal contracts. PHSKC ultimately refused to comply with these requirements and began working with local labs to process completed tests in order to return results quicker.

Needed Relationship Building

Although community partnerships were an overall success for PHSKC, having to quickly establish partnerships that did not exist prior to the pandemic put a significant burden on communities and testing teams.[287] Additionally, one interviewee pointed out that PHSKC would have benefitted from pre-existing relationships with public and private sector partners and emergency contracts with testing and laboratory services to reduce wait time in receiving testing resources. These capabilities would make it easier to respond to outbreak data and stand-up testing capabilities at high-priority sites.[288] Recommendations by staff also included having templates and blueprints for the creation of testing sites to enhance the ability to respond quicker and avoid needing to redo contracts and find partners.[289]

[283] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[284] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[285] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[286] Robert Klemko. Seattle area used early social distancing, testing, to help begin flattening the coronavirus curve, Washington Post. April 9, 2020.
[287] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[288] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[289] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

FATALITY MANAGEMENT

During the period covered by this report, the King County Medical Examiner's Office (MEO), which is housed within PHSKC, contributed to accurate surveillance and death numbers due to COVID-19 related illness. The MEO tested decedents coming into the office, as well as tested decedents at funeral homes who have circumstances indicating that COVID-19 may have been a factor in their deaths. The MEO also developed strategies for increased fatality capacity planning across departments and partners. PHSKC accurately implemented the CDC PHEP capability *5 - Fatality Management* in a way that supported their public health agency and mental health of survivors.

Strengths

Systems or Infrastructure

Prior to the pandemic, there were previous planning efforts conducted by PHSKC focused on mass fatality incidents. Relationships developed during those planning periods provided a strong foundation for the Medical Examiner's Office's (MEO) response. Systems like morgue racking and response strategies such as the use of CONEX containers came out of those planning efforts and allowed the MEO to jumpstart their response.[290] By leveraging these established relationships, medical examiners and coroners across the state were able to quickly convene, plan, and share resources. Newly established partnerships and those strengthened during the COVID-19 response have also supported planning efforts for other disasters.[291]

Standardization of Processes

Like many other parts of the public health and medical system, the MEO needed to modify operations in response to the significant increase in cases being assigned. In collaboration with partners, the MEO staff developed guidelines for when to perform autopsies and temporarily reduced the types of cases being assigned while focusing limited resources where they would be most impactful.[292] To support these guidelines, algorithms and workflows were additionally created to guide the testing of decedents for COVID-19.[293] By creating these resources and standards, the team provided an effective unified approach to addressing surge created by the pandemic.

Areas for Improvement

Unclear Processes

The role of the MEO was not consistently known or understood by internal staff and external stakeholders, including when the MEO had jurisdictional authority.[294] This caused confusion, delays, and a need to manage expectations resulting in increased workload. This challenge was compounded by competing priorities from

[290] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[291] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[292] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[293] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[294] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

within PHSKC such as frequently changing requests for data.[295] Changes in priorities and requests for data reporting outside of regular channels made it difficult to complete steady-state work, conduct planning for anticipated response needs, and made establishing standards for data collection methods challenging.[296]

VACCINATION

PHSKC used a multi-modal vaccine delivery approach that provided vaccinations through high volume mass vaccination and fixed clinic sites in areas of high need, culturally sensitive community vaccination events in partnership with empowered CBOs and other partners, mobile vaccination for high-risk individuals, vaccine clinics with King County's 19 school districts, as well as supporting additional regional and healthcare institution partnerships. PHSKC used an intentional equity driven COVID-19 vaccination strategy while creating strategies to support the vaccination of older adults and BIPOC communities. CDC PHEP capabilities 8 - Medical Countermeasure Dispensing and Administration and 9 - Medical Materiel Management and Distribution are clearly demonstrated through PHSKC exceptional efforts in vaccine distribution. The success of this challenging work was demonstrated in their results. PHSKC met ambitious vaccination goals to vaccinate a minimum of 70% of all eligible adults equitably, efficiently, and quickly across all identified racial and ethnic groups and regions of the county, with over 3 million vaccine doses administered and 77% of eligible King County residents vaccinated as of September 1, 2021.

Strengths

<u>Coordination/Collaboration</u>

Multiple vaccine-focused teams noted that a community-centered approach was critical to success of their operations and collaborative relationships built should continue into preparedness activities.[297] Healthcare facility and mobile vaccination teams also developed strong partnerships with EMS agencies, long-term care facilities, hospitals, pharmacies, and providers that developed into "…symbiotic relationship[s] that built on each other's strengths…".[298] PHRC volunteers were critical in staffing testing sites, mobile testing, and vaccine clinics.[299] These partnerships across a multitude of sectors and communities played a major role in the success of PHSKC's vaccination efforts.

An example of successful vaccination efforts included outreach to long term care facilities and adult family homes. Collaboration with pharmacies and regional partners enabled PHSKC to distribute vaccines to locations where people at high risk lived rather than forcing them to travel to a vaccination site. Additionally, PHSKC was the only county in Washington to track vaccination rates in adult family homes to ensure equitable opportunities for individuals living and working within these homes to receive vaccines.[300]

[295] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[296] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[297] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[298] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[299] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[300] COVID-19 PHSKC External Partner Townhalls (2022)

Relationship Building

A consistent finding across the teams involved in vaccination efforts was the importance and success of partnering with organizations and engaging communities. Collaboration with school districts and their leadership was very beneficial for youth vaccine efforts and the contact list provided by the Higher Education Task Force was very helpful in reaching these partners.[301] Partnerships were formed with the University of Washington Schools of Nursing, Pharmacy and Medicine and Bellevue College's Nursing program. The students became vaccinators and assisted covering short notice staffing gaps. Emergency Managers in King County noted it was a strength that PHSKC embraced the PHRC and as a result the PHRC grew rapidly.[302] They cited the PHRC's involvement in contact tracing and vaccine efforts specifically as a strength that enable those responses. Although management of these partnerships was, at times, difficult to track and coordinate between teams, resources such as outreach lists and strategies such as partner compensation were particularly helpful.[303]

Information Technology

Although there were challenges initially setting up a vaccination registration system, PHSKC worked closely with King County Department of Information Technology (KCIT) to address the issues. Together the departments created a vaccination registration selection committee to quickly and successfully choose a new registration system. It was then rapidly installed to enable more efficient and accessible COVID-19 vaccine registration by community members. Over the course of the pandemic, PHSKC and KCIT have worked closely together to successfully maintain and upgrade the registration system. This has included enhancing the system to increase language access, an especially important improvement for community members in South King County

[301] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[302] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[303] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Innovation/Success: Community Partnerships Promote Vaccination

PHSKC worked closely with numerous partners to promote vaccination across the county. Partner organizations promoted equity in vaccine efforts as they served as trusted agents to historically marginalized and underrepresented communities as well as other populations with diverse needs. For instance, community organizations worked to connect vaccines to individuals who lacked internet access, had limited English proficiency, and/or had past experiences with racism in the medical system. The actions of PHSKC and all the community organizations who provided support to the vaccine effort helped limit the disproportional impacts of COVID-19 on immigrants, refugees, African American and Black communities, Latinx communities, Indigenous people and Native Americans, Pacific Islanders, and People of Color.*

*"One Million Shots and Counting: A Tribute to the Community Partners Who Helped us get Here." Public Health Insider, Public Health- Seattle & King County, https://publichealthinsider.com/2021/04/07/one-million-shots-and-counting/. 04.07.21

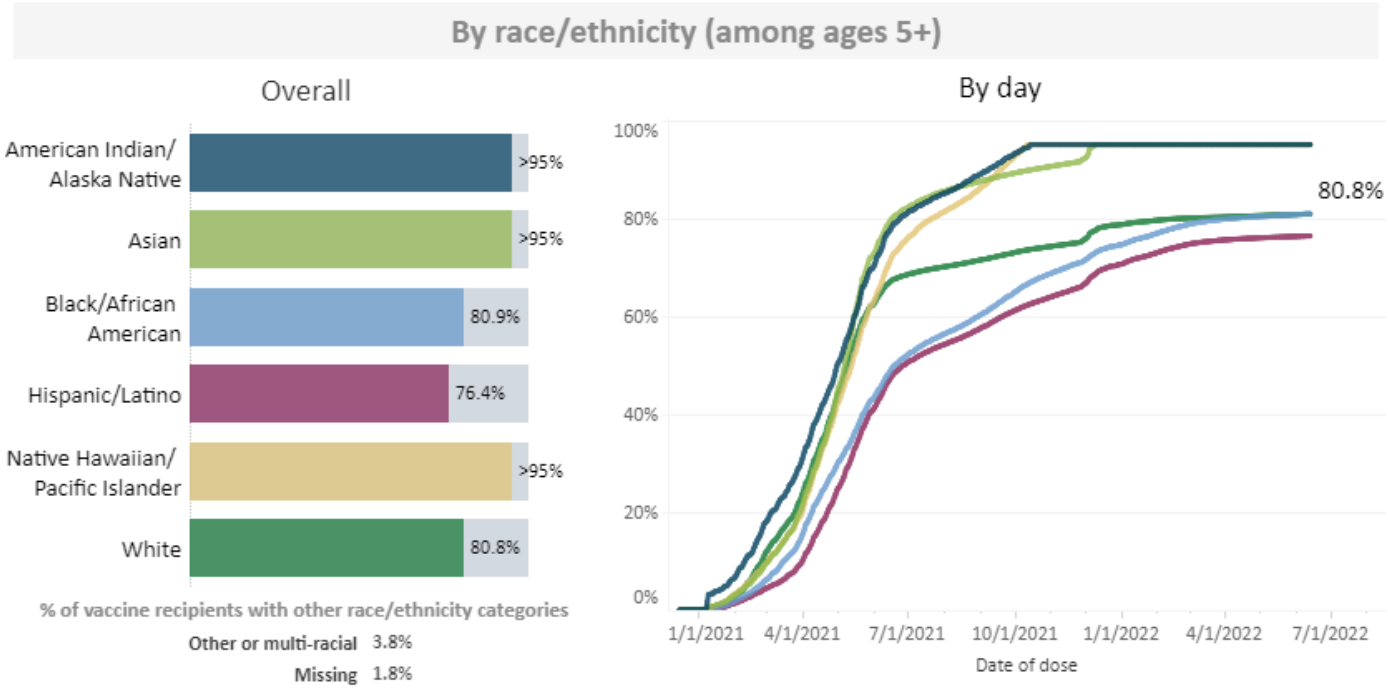


Figure 2: Primary series of vaccines completed by race/ethnicity (https://kingcounty.gov/depts/health/covid-19/data/vaccination.aspx)

Areas for Improvement

Unclear Processes

Teams conducting vaccine operations consistently noted a lack of clarity regarding their team's specific mission and scope. They indicated the target populations were not always clearly defined and lines of responsibilities between vaccine teams were often blurred during the response.[304] For departmental supervisors, a lack of clarity regarding response policies such as leaves of absence to support the mission of vaccine teams was experienced within the internal organizational structure. Additionally, a lack of clarity on environmental and patient safety policies as well as ever-changing federal and state guidance updates resulting in evolving policy and command staff decisions further reduced clarity for vaccine teams.[305] These factors produced significant challenges for response leaders and vaccine teams attempting to navigate complex partnerships and operational environments.

Information Technology

Vaccine teams routinely experienced challenges with data and IT systems which reduced their operational effectiveness. While the teams made use of information produced by the Analytics and Informatics team, vaccine groups noted there were gaps in data making it difficult to identify equity-related needs.[306] Since data was initially not available in a timely manner, some vaccine teams were unable to make timely decisions related to equity issues and found it difficult to rely on data or measure progress at times during the response.[307] Although the departments involved eventually transitioned to more effective systems which increased ease and use of data, these initial shortcomings impeded early vaccine efforts and produced additional response operation costs as teams had to transition their documentation, training, and processes to the new systems.[308]

Mixed Findings

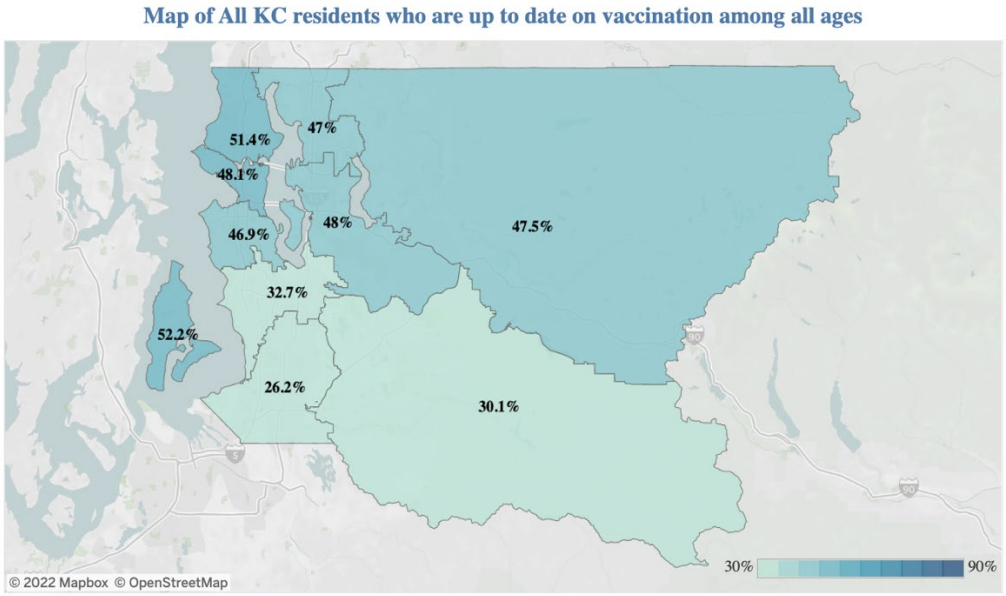
Equity

Vaccine related teams communicated a mixture of equity and inclusion successes and areas for improvement. A resounding finding was that the broad response and vaccine efforts centered equity in decision-making and operations.[309] The King County Unified Regional Strategy: COVID-19 Vaccine Delivery (April, 1, 2021) outlined the goal of King County to not only vaccinate a minimum of 70% of adults but to strive for higher rates of

[304] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[305] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[306] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[307] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[308] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[309] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

vaccination among older adults and BIPOC populations that have disproportionately been impacted by COVID-19.[310] The grounding principles for equitable vaccine delivery included:[311]

- Removing barriers deterring access
- Creating an inclusive process
- Being intentionally anti-racist and accountable to Black, Brown, and BIPOC communities



Compare across:
- Age Groups
- Race/Ethnicity

Table by Race/Ethnicity of KC residents who are up to date on vaccination among all ages

		All	White	Asian American	Black/Africa American	Hispanic/ Latinx	American Indian/Alaski Nati..	Native Hawaiian/Pa Isla..
Overall	King County	42.4%	43.3%	55.3%	26.7%	28.3%	50.7%	42.1%
10 Regions	Auburn, Kent, and Federal Way	26.2%	24.6%	39.6%	24.7%	19.9%	36.8%	28.8%
	Bellevue, Issaquah and Mercer Island	48%	41.9%	63.9%	37.7%	32%	71.6%	69.6%
	Burien, Renton, Tukwila and Seatac	32.7%	37.3%	40.5%	22.1%	23.1%	46.5%	28.9%
	Central Seattle	48.1%	50.2%	65.2%	23.2%	38.4%	46.5%	70.5%
	East King County	47.5%	39.9%	76.6%	50.9%	35.4%	58%	94.7%
	Kirkland, Redmond, Bothell, and Woodinv	47%	42%	68.9%	38.4%	27.2%	63.4%	60.9%
	N Seattle and Shoreline	51.4%	55.2%	51.9%	33.6%	38.5%	55%	69.3%
	South East King County	30.1%	27.9%	50%	31.8%	24%	47.7%	50.8%
	Vashon Island	52.2%	55.6%	40%	39.9%	29.3%	49.8%	
	W Seattle, S Seattle, Delridge and Highline	46.9%	63.2%	40.3%	23.7%	32.4%	56.4%	51.2%

Image 5: Vaccine Equity in Coverage Graphic PHSKC Dashboard (https://kingcounty.gov/depts/health/covid-19/data/vaccination.aspx)

[310] PHSKC. April 1, 2021. King County Unified Regional Strategy: COVID-19 Vaccine Delivery. Accessed 5/23/22. https://kingcounty.gov/~/media/depts/health/communicable-diseases/documents/C19/king-county-strategy-for-vaccine-delivery.ashx?la=en

[311] PKSKC. April 26, 2021. Principles for Equitable Vaccination. Accessed 5/23/22. https://kingcounty.gov/~/media/depts/health/communicable-diseases/documents/C19/king-county-principles-vaccine-delivery.ashx?la=en

Additionally, teams noted the Equity Tool and Equity Review Process was fundamental for effective prioritization and decision-making related to vaccine operations. Community organizations involved in addressing homelessness and housing noted that the Equity Tool was valuable for the mobile team's vaccine distribution.[312] The same providers noted that the mobile teams were instrumental in providing testing and vaccines to people experiencing homelessness.

Although there was a focus on equity in portions of the response, vaccine teams noticed challenges implementing inclusion and equity objectives in some of their operations. Language access of materials was a significant barrier for several of these teams in terms of both available translations and accessibility standards (formatting, font size, etc.).[313] Another major hurdle for onsite vaccine teams was ADA accessibility of their services and a lack of resources to adequately plan for site locations to be ADA accessible.[314] Community organizations noted that there were not enough mobile teams to meet the needs of people experiencing homelessness or housing challenges.

Two special vaccination clinics were held for people with access and functional needs which had mixed results. The first event successfully vaccinated 175 people with disabilities and the second event, co-sponsored by the Seattle Fire Department only vaccinated 75 people.[315] The lower numbers at the second event appeared to prompt the cancellation of the next event co-sponsored by the Seattle Fire Department for this very important population. People with disabilities did not understand why this event that they pre-registered for was cancelled and received the news of cancellation with a very negative perception of their place in the community.

Coordination/Collaboration

Vaccine-related teams expressed a combination of strengths and areas for improvement related to internal response and cross-team coordination. Multiple teams noted strong collaboration and communication between vaccine teams, robust information sharing with the PICC, and effective partnerships with operational coordination and policy teams.[316] Within the teams themselves, some noted effective internal communication, clarity of vision and strategy, consistent workflows, a positive team culture, staff flexibility, and open communication as foundational pieces of their success.[317] Most PHSKC COVID-19 AAR survey respondents generally agreed they had the information necessary to perform in their COVID-19 response roles. They also agreed or strongly agreed the information was shared in a timely manner and with enough frequency.

[312] COVID-19 PHSKC External Partner Townhalls (2022)
[313] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[314] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[315] COVID-19 PHSKC External Partner Townhalls (2022)
[316] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[317] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Alternatively, some individuals noted a lack of internal communication, transparency, and integration across the vaccine programs. Specifically, the Government Affairs Team was recognized as needing to be integrated into vaccine planning and operations earlier to support engagement of elected officials. There was also a noted lack of clarity about responsibilities between the vaccine teams which led to inefficiencies in operations. A lack of consistent messaging across the response regarding vaccination activities confused partners and the public and lines of communication between operational teams and departments were unclear.[318]

An additional group that was seen as important to involve early in the vaccination campaign development was pediatric healthcare partners. Pediatric providers have a high level of experience providing vaccines and could have provided that expertise early in the planning for COVID-19 vaccination efforts.[319] A broader approach to distributing vaccines throughout healthcare entities was also seen by health partners as a missed opportunity. Much of the allocation of vaccines went to hospitals in large quantities and could have instead been distributed to an array of healthcare providers who could have disseminated them more quickly.[320]

PHSKC Internal Operations

Key infrastructure and administrative functions, such as finance, contracting, human resources, and workforce mobilization, were critical to the full range of PHSKC response operations. These included estimating incident cost, ensuring accurate expense documentation, communicating time and effort reporting to responders, as well as executing and managing a range of new contracts. Internal Operations of PHSKC includes activities that most closely align with CDC PHEP capabilities 3 – Emergency Operations Coordination and 15- Volunteer Management. The appropriate execution of these two capabilities was critical to the success of the response. Human resource and workforce mobilization tasks included using existing and new processes to recruit, hire, mobilize, and train responders to achieve operational activities. The appropriate management of personnel and financial resources ensured that operations continued efficiently and effectively despite the length of the response.

Strengths

Teamwork

Despite the incredible demands created by the pandemic and the disruption of routine working environments, cooperation between different divisions within PHSKC facilitated information sharing and strengthened the COVID-19 response.[321] The broad perspective expressed in feedback was that teams and departments typically worked well together and strengthened relationships throughout response activities.[322] The PHSKC survey results also showed that 65% of the 414 respondents felt flexibility and teamwork was a strength of the

[318] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[319] COVID-19 PHSKC External Partner Townhalls (2022)
[320] COVID-19 PHSKC External Partner Townhalls (2022)
[321] Marx, C. (2021), COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[322] Marx, C. (2021)

response. Collaboration and coordination were also mentioned by at least 35% of that survey population as a strength.[323] It was noted in particular that support was provided through staff activations, coordination of some aspects of the response, and information sharing.[324] Regular huddles of response teams with other departments, such as Human Resources, to provide updates was a key strategy for staying ahead of response needs and challenges.[325]

The benefit of teams coming together from across PHSKC was the creation of multidisciplinary teams. For example, vaccination and testing initiatives for people experiencing homelessness and the creation of facility ventilation guidance were two situations where multidisciplinary teams were assembled with successful results.[326] For the response efforts to support people experiencing homelessness, PHSKC incorporated a toxicologist, public health nursing, behavioral and mental health, health environmental investigator epidemiologists, community health workers, and a staff physician. Each of the disciplines brought their own experience, guides, and checklists to help the team.[327] This effort merged Field Assessment Support and Technical Assistance (FAST) and Strike teams to form the Homeless HEART.[328] For the ventilation guidance, crafted before other similar guidance was available, the team included clinical, epidemiological, and health environmental investigator review. The team recognized it was indoor transmission of COVID-19, not just droplets. This allowed them to focus on airborne virus mitigation through ventilation.

Teams primarily focused on ensuring equity specifically noted that leadership support, team composition, culture, and norms were all critical to their success.[329] Teams were often noted as diverse in terms of background and knowledge. Additionally, teams' culture was positive and respectful, and group agreements helped guide behavior and norms.[330]

[323] COVID-19 PHSKC Staff Surveys (2022)
[324] Marx, C. (2021)
[325] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[326] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[327] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[328] PHSKC. Summary of King County COVID-19 Homeless Response Health Care for the Homeless Network (HCHN) Governance Council Meeting. June 15, 2020. https://kingcounty.gov/depts/health/locations/homeless-health/healthcare-for-the-homeless/~/media/depts/health/homeless-health/healthcare-for-the-homeless/documents/2020-june/covid-19-homeless-response.ashx
[329] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[330] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Innovation/Success: Multidisciplinary Teams Address the Needs of Homeless Shelters

PHSKC established a national standard for response to cluster outbreaks in homeless shelters which was recognized by the Centers for Disease Control and Prevention (CDC) as a best practice to limit the impacts of disease on shelter clients and staff. PHSKC deployed rapid multidisciplinary response teams to homeless shelters with a suspected case or cases of COVID-19. The team assessed the extent of the impact of COVID-19 and connected the organization with resources and support services such as environmental assessments, COVID-19 education, COVID-19 screening and testing services, personal protective equipment, and referrals to I&Q facilities.*

*"Rapid Response In Homeless Shelters can Help Prevent Spread of COVID-19; How to Protect Older Adults at Home; Latest on Antibody Testing." Public Health Insider, Public Health- Seattle & King County, https://publichealthinsider.com/2020/04/22/rapid-response-in-homeless-shelters-can-help-prevent-spread-of-covid-19-how-to-protect-older-adults-at-home-latest-on-antibody-testing/.

Systems or Infrastructure

An incident response requires extensive management of financial and administrative components for long-term success and cost-recovery. To meet this challenge, the HMAC Finance and Administration Section and later teams within PHSKC departments established structures, processes, and communication channels as a foundation for successful collaboration. Early in the response, the HMAC Finance and Administration Section conducted daily huddles to track to-dos and maintain situational awareness across the team.[331] This was supported by having dedicated communication channels to push information out to responders, such as the IAP Special Message section, and a centralized place to receive inquiries such as the shared Finance inbox.[332]

A key task of the Finance and Administration team was interpreting federal and other guidance about the use of coronavirus funding. The team went to great lengths to maintain compliance, educate program managers, and keep meticulous records for future audits and reimbursement. A number of revenue streams supported COVID-19 activities, each with their own timeline, processes and restrictions and Finance managers advised department leadership and response team leads on the use of each. To provide structure to the enormous task of tracking expenditures and documentation, HMAC Finance & Administration developed a single spreadsheet to map out budgeting for each response program, utilized an extensive document management system in place prior to COVID-19, and relied on their experience with LEAN worksheets to document response procedures to standardize processes. These foundational processes, along with the team's ICS trainings, helped form the foundation and guide the team's work through the pandemic.[333]

The Facilities Management Division as well as the Contracts, Real Estate, and Procurement Section were also noted as extremely important and successful teams within the PHSKC COVID-19 response. In one interview, it

[331] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[332] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[333] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

was noted that the teams were “working miracles” to secure PPE for staff.[334] They also helped secure other scares resources such as swabs and tubes when mass testing was being established.

Standardization of Processes

One area uniquely captured by the PHSKC COVID-19 AAR Survey was that most of the over 400 respondents felt they understood their roles and had the skills and training to complete their work. Many respondents acknowledged a stressful learning phase as the county adapted to the rapid pace required for the response, but they felt the team supported each other to solve problems.[335] Approximately 90% of respondents felt they understood their roles and had the skills required in the last three months which is a laudable accomplishment with a high level of reported staff turnover during this two year period.[336] This internal statistic demonstrated the county's commitment to defining roles and ensuring their teams had the skills or training required to serve the residents of the county. Continuous training was also supported by some divisions (e.g., Community Health Services) which implemented specific training strategies to help with teambuilding, competencies, safety, etc.

Areas for Improvement

Team or Staffing Capacity

The COVID-19 pandemic overwhelmed public health, medical, and response systems across the world. As such, it is not surprising that workload and staff capacity was a consistent topic across most feedback received for this report.[337] A widely held sentiment across team-level facilitated discussions was that staff were overwhelmed with the workload and the response demands dramatically outpaced teams’ resources.[338] This issue was most pronounced at the start of the response as PHSKC Human Resource processes were adapting to the pace and style of response-focused recruiting, The PHSKC survey also supported this finding, when asked about staffing, more than 50% of respondents were nueturalneutral, disagreed or strongly disagreed that they had the necessary staffing. This was an area of continous improvement for PHSKC. Some respondents expressed they all were "working beyond capacity" and people could not be hired fast enough.[339]

Many employees, particularly earlier in the response, worked 80–100-hour work weeks often going months without a day off. Aside from taking time away from work, many felt they could not reduce their workload, take needed breaks, or address their physical, emotional, or mental health. Workers across classifications expressed they felt they were not adequately compensated for the exponential increase in work.[340] This challenge was compounded for some staff by the fact that many were ineligible for overtime pay and were unable to use additional compensation in the form of paid vacation time due to response demands. Staff recognized and appreciated that leaders often encouraged teams to work less and practice self-care, but many

[334] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[335] PHSKC Internal COVID-19 AAR Survey, March 2022.
[336] PHSKC Internal COVID-19 AAR Survey, March 2022.
[337] Marx, C. (2021)
[338] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team ‘Hotwashes’. (2020-2021)
[339] COVID-19 PHSKC Staff Surveys (2022)
[340] Marx, C. (2021)

felt it was simply not feasible due to no reduction in workloads or adequate staffing to meet the need. Many staff noted that structural changes to reduce workload, cross-training to allow for better coverage, and incorporating rotating off of HMAC work more frequently would have been more beneficial for their physical and mental health than individual self-care.

Teams also experienced challenges managing work in their home departments and varied expectations around "split work." While many employees were activated to support the COVID-19 response, teams in their home departments often had to shoulder additional workloads in their absence.[341] Employees outside of the response noted it was difficult to meet the additional workload, especially as people activated in the response may take weeks to reply to inquiries, if they replied at all.[342] Resistance to deployment of staff rose in some departments which created the need to recruit for positions that may have been able to be filled through staff activation.[343] Some employees, trying to meet these needs and support their home teams, attempted to juggle both their "day to day" and response positions. This understaffing reduced capacity in routine public health services and increased stress among both response and departmental teams.[344]

"there's a core group of people who, who have great knowledge and expertise, then they get overwhelmed and, by the time you try to bring help on it may be later than ideal."

-Leadership/Management Interviewee

Hiring and Onboarding Concerns

Onboarding Processes

Part of the reason for limited staffing capacity was that many teams noted initial recruiting, hiring, and onboarding processes were unable to operate at the speed and flexibility required to scale operations for the response.[345] While significant efforts were made to rapidly hire and onboard new employees, response teams noted they often did not have adequate time or resources to properly train and engage new employees.[346] Some new team members did not know who their supervisor was after onboarding.[347] When asked in the PHSKC COVID-19 AAR Survey about key challenges during the response, the top three areas were staff capacity, onboarding, and unclear processes.[348] Onboarding was one area mentioned several times in the

[341] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[342] Marx, C. (2021)
[343] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[344] Marx, C. (2021)
[345] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[346] Marx, C. (2021)
[347] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[348] COVID-19 PHSKC Staff Surveys (2022)

survey comments. Respondents felt it could have been more organized and was often neglected at the team level as well because their attention was required by the response.[349]

> *Onboarding is an essential part of bringing new staff into Public Health. Things like obtaining an ID badge, gaining computer access, and learning about standard Public Health benefits and processes continue to need to be standardized and easier to access (for both supervisors and newly onboarded team members). When staffing is stretched thin, training and onboarding of new staff members also burdens the supervisory staff, who work heroically to ensure that their team is well trained.*
>
> *- Survey Respondent*

Teams that were overwhelmed with urgent response activities were often unable to find time to adequately train new members. New team members often had to adapt to a chaotic response environment with limited onboarding and training support. Since many of the new hires were engaged in temporary positions, job security was a constant concern. This created uncertainty and stress for both the new employees and the teams they were assigned to support making it difficult to plan and forecast.[350] Furthermore, some staff expressed concern that since new hires were in temporary positions, the added diversity they brought to the workforce would be lost at the end of their employment with the county.

Volunteers

Volunteers filled a variety of needs during the COVID-19 response. The volunteer pool expanded and contracted depending on outside factors like volunteer policies of area employers or the availability of vaccine. Some volunteers such as PHRC and volunteers lent by philanthropic or academic organizations, were not seen as effectively integrated into the response.[351] Factors included supervisors' lack of time to train and supervise volunteers, the suitability of sensitive/complex roles for volunteers, responder safety, and challenges integrating volunteers who rotate daily depending on their availability. Programs who more successfully integrated volunteers designed roles without significant safety risks, able to be staffed by different people each day, which did not require in-depth expertise, and featured a well-planned onboarding process and supervision.

Early in the pandemic, badging and credentialing were an issue. Credentialing systems were backed up as medical license status and similar credentials were being queried all across the country. A national shortage of badging materials prevented HMAC from issuing badges to volunteers at the start of an assignment.[352] This hindered easy identification of responders and prevented them from accessing buildings and spaces such as

[349] COVID-19 PHSKC Staff Surveys (2022)
[350] Marx, C. (2021)

[352] COVID-19 PHSKC Key Informant Interviews. (2020-2021)

the EOC. The situation resolved later in the response as individuals became more familiar with the badging process, the massive number of credential checks diminished, and supply chain challenges eased.

Some volunteer assignments proved difficult to tailor to volunteer needs and preferences. Certain roles required medical credentials, a continued commitment by a single person, or proficiency working with populations Public Health serves such as people living unhoused. Volunteers demonstrated tremendous motivation and commitment in their assignments with Public Health, but still felt the department could have done more to enhance the volunteer experience. Specific concerns raised by volunteers included requiring an ongoing commitment to certain roles; minimal advanced notice provided for some assignments; some programs' preference to limit assignments to PHSKC employees only, and insufficient training.

PHRC volunteers who responded to a survey on their experiences shared mixed opinions on their experiences, while also crediting with PHSKC with making space for and supporting volunteers as it coordinated the regional COVID-19 response.

Equity

Although there was a noted success of increased workforce diversity through new hires during the response, several operational and equity related teams raised concerns regarding workforce representation. First, staff expressed concern that since new hires were in temporary positions, the added diversity they brought to the team could be lost at the end of their employment with the county.[353] Secondly, while it was widely noted that outside support was appreciated, some felt groups that were engaged did not reflect the broader PHSKC community.

Workforce members recruited via staffing agencies were less diverse than those hired by PHSKC according to several teams.[354] Additionally, teams felt the contracted incident management teams (IMT) comprised of public safety staff established a "…a command structure out of touch with Public Health's values, equity goals, and cultural norms."[355] A consistent message was that PHSKC's workforce should "reflect the communities served" and that equity in hiring practices should be formally adopted.[356]

> *"[g]iven public health's focus on racism as a public health crisis, it's especially important to retain contact tracing's diverse staff as part of PHSKC's workforce." – Hotwash Participant*

PHRC and other volunteer groups were also noted as being less diverse than PHSKC employee teams. Although incorporating volunteers into the public health response was important to alleviate staffing issues and build capacity for various response functions, PHRC did not fully represent the communities it served. According to the PHRC Engagement Survey, the PHRC's largest demographic was straight white women over

[353] Marx, C. (2021)
[354] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[355] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[356] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

65 years of age, many of whom have graduate education and/or clinical licensure.[357] New volunteers who joined during 2020 and 2021 to respond to COVID-19 tended to be younger and of more diverse backgrounds. However, even this group of new volunteers was not reflective of communities in Seattle and King County.

Table 7: King County Compared to PHRC Self-Reported Demographics

Race/Ethnicity	King County	PHRC (survey respondents)
American Indian or Alaskan Native	1.0%	0.6%
Asian	19.7%	14.5%
Black or African American	7.0%	2.6%
Hispanic or Latino/Latina/Latinx	9.9%	3.7%
Native Hawaiian/Pacific Islander	0.8%	0.4%
North African Middle Eastern	No Data	0.4%
White (Not Hispanic or Latino)	58.1%	78%
Two or more races	5.2%	1.0%-2.8%

Unpredictable Funding

Disaster response funding is frequently uncertain in both its amount and duration; this has been especially true during the COVID-19 pandemic. This uncertainty presents a spectrum of challenges including difficulty in forecasting operational timelines, available staffing, time to scale up/down, and clarity over duration of mission. This uncertainty also impacted responder well-being. Since funding sources were uncertain, it was difficult for finance teams to establish the appropriate level of granularity for response expenditures. One example was for COVID-19 vaccination, hiring and procuring resources was hampered in the summer of 2020 due to funding uncertainty. Additionally, FEMA funding occurs at a transactional level which is incompatible with how PHSKC typically approaches funding and creates additional review work for already overloaded finance team.

Environmental health teams also noted challenges around funding for their activities in addition to unique considerations for resourcing EHS operations. The EHS Safe Start team noted that SSTAR funding was too cumbersome for both the EHS team and those seeking assistance due to documentation requirements.[358] Internal funding was also a challenge as the team noted that cost recovery requirements under BOH 2.06.008 and BOH Resolution 08-07 limited the ability for EHS to rapidly mobilize teams and that an emergency fund for staff engagement may be required for future incidents.[359] In regard to resources, the EHS Ventilation & Indoor

[357] PHRC Engagement Survey
[358] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[359] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Air Quality Program noted that due to cost recovery requirements, EHS was unable to procure monitoring equipment outside of established programs, and obtaining specialized environmental staff required was extremely challenging due to funding only being able to be used for short-term and temporary hires.[360] These limitations without funding alternatives produced delays and inefficiencies in response efforts.

Information Technology

While support from King County Information Technology (KCIT) colleagues was noted and appreciated, challenges around information technology (IT) support and interoperability arose during the response. As teams onboarded members to PHSKC, they often experienced delays in accessing core systems, such as email and payroll, that created bottlenecks to engaging new staff.[361] This was particularly a challenge for response teams with clinical hires, such as Nursing Professional Services, that required credentialing and privileging work.[362] At times, work had to be halted for extended periods due to difficulty in getting support for IT issues.[363] Furthermore, many of the recruiting and onboarding systems did not easily interface with other groups making it difficult to coordinate hiring and onboarding for staff.[364] In regards to contracting, teams that utilized technology related vendors noted there was a lack of a comprehensive vendor selection process and that some compliance contracts were resolved after the fact causing delays in work.[365]

Massive department and IT resources were also dedicated to building and launching Microsoft's Vaccine Management System (MVM) within two weeks. However, once it was established, existing systems could not scale to match this new system.

Mixed Findings

Hiring and Onboarding Concerns

To meet the staffing needs created by the COVID-19 response, hiring into PHSKC positions had to dramatically scale up in both speed and capacity. Early in the incident, this function was unable to meet the needs of response teams. PHSKC staff noted that the workforce hiring process was cumbersome and took too long.[366] In addition to being overwhelmed, the Human Resources system was not built to hire as large of cohorts as the pandemic needed.[367] It often took 2-3 months from a job being posted to an employee starting in that position. In some cases, the applicant would have found another position before the process could be finished. HR noted that it would take approximately six weeks for the recruitment process to be done efficiently.[368] In their observation, some of the delay was on the individual being recruited. The proportion of

[360] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[361] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[362] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[363] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[364] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[365] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[366] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[367] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[368] COVID-19 PHSKC Key Informant Interviews. (2020-2021)

the qualified workforce already working in COVID-19 related roles and candidates' desire to provide longer notice to current employers impacted the speed with which candidates accepted and onboarded.

Recruiting for response roles, particularly nurses, became more difficult as the pandemic wore on. Many potential applicants were already employed, the labor market was tightening, people were burned out, and PHSKC was often limited to offering less-attractive short-term positions for many roles. The complexities of COVID-19 funding necessitated the department creating most new positions as Term Limited Temporary (TLTs) of varying length. Overall, hiring supervisors noted short-term roles received fewer applicants. Positions which could not be hired for were sometimes filled with contract workers from staffing agencies.

There was a belief that if HR had significantly increased their capacity by adding staff and implementing procedural changes earlier, the hiring process could have been improved. Greater emphasis on communication with managers and supervisors about t employment types, optimum scenarios for each employment type, and how to initiate a recruitment would have eased some pain points. Many in COVID-19 management roles were not previously managers or supervisors with King County and awareness of HR process and policies varied. Midway through the response, Command Staff implemented a process to more formally assign priority levels to open recruitments, helping assure the most critical roles were filled first. Strategies like using a single job posting to hire multiple similar positions also helped.

Existing department and county human resource policies were not developed with anticipation of a massive surge in demand for HR services. Although HR was overall successful in flexibly adapting policies in a rapidly changing environment, challenges with specificity, Interpretation, and awareness still existed. One PHSKC staff member felt they did not have enough HR policies to reference when making decisions about staffing and noted they received push back from HR about decisions they made without knowing the procedure.[369] Example policies cited as challenges were employee classifications and performance evaluations, discipline, and the credentialing and demobilization processes. Additionally, the creation of generic job descriptions for roles like Public Health Nurse, Investigator, and Program Manager that could be updated annually were identified as a way to reducing time spent creating job postings.[370] HR had templates available but non-HR staff hiring for their sections spent extra time updating and reviewing the job descriptions. The job descriptions could then be turned into a job posting.

Temporary staffing agencies were used however there were concerns voiced related to equity. Contract workers did not have access to many of the responder support services offered to KC employees, like Balanced You or career placement services. The wages of contract workers were not consistent with those paid by the county for the same body of work - some higher, some lower. For example, nurses hired by King County to work in the contact center were paid below the market competitive rate and the PICC struggled to hire nurses. The contact center eventually had to turn to nursing agencies to fill staffing gaps. Temporary staffing agencies also had fewer workers available as the response wore on.

[369] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[370] COVID-19 PHSKC Key Informant Interviews. (2020-2021)

Over time, the ability to meet the staffing challenge became a strength as "new employees were brought on faster and in greater numbers than had ever been done before."[371] The speed and scale at which new employees were brought on went from a major issue to something that was celebrated as a success by many PHSKC teams and provided critical aid to understaffed teams.[372] Labor unions were valued partners as systems adapted to a rapidly changing workforce. Key strategies that improved staffing included a higher degree of flexibility in hiring, expanded agreements with schools around use of students, mobilization of the PHRC, engaging contractors to meet surge staffing needs, cross divisional mobilization of PHSKC staff, and integration of Human Resources team members into staff forecasting conversations. [373] Eventually tools that assisted managers and supervisors were created and shared, such as guidance on how to successfully engage staffing agencies to assist with recruitment and onboarding.[374] Onboarding processes were streamlined through changes and standardized processes, such as shifted Public Health's New Employee Orientation to a virtual self-paced training.

PHSKC staff also noted their overall workforce diversified during the COVID-19 response due to a combination of intentional hiring practices and the sheer number of recruitments required. Participants felt the workforce now was more varied in terms of race and ethnicity, along with professional and educational backgrounds.[375]

Unclear Processes: Workforce Mobilization

The Workforce Mobilization Plan to recruit, deploy, support, and demobilize responders during an emergency was outdated and not necessarily helpful. Response plans are drafted as guiding frameworks designed to be adapted to the specifics of a particular emergency response. For example, much of the prior documentation around workforce mobilization did not detail how to mobilize staff.[376] A PHSKC staff member noted that the plan provided a structure to start with, but the scale and complexity of the event forced the plan to evolve.[377] A staff member who filled an HR role noted that the plan would describe what should be done but provided little guidance as to how it would be accomplished.[378] Plan attachments referenced outdated systems no longer in use and there were not templates available for standard tasks. Two specific areas that needed building out were onboarding and credentialing.

Early on, some workforce mobilization was decentralized with teams managing some of their own recruiting and onboarding processes, but soon everything was centralized into the Workforce Mobilization unit. Mobilization initially relied upon manual, slow processes to deploy employees. Basic systems did not exist, such as a way for HMAC Finance & Administration to view staffing needs and personnel costs of for budget and cost tracking purposes. The workforce team underwent a laborious process to create an excel-based real-time list of responders available for deployment (along with start and end dates, classifications, credentials,

[371] Marx, C. (2021)
[372] Marx, C. (2021), COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[373] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[374] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[375] Marx, C. (2021); COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[376] Marx, C. (2021)
[377] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[378] COVID-19 PHSKC Key Informant Interviews. (2020-2021)

and prior training.).[379] Additionally, several policy and administrative concerns had to be resolved which amplified backlogs for the team. Job classification requirements, equity and parity issues across newly created positions, FEMA reimbursement requirements, and appropriate exceptions to Human Resource policies are examples of issues PHSKC had to address to mobilize the workforce.[380] The impact of an emergency declaration on personnel management was for the most part undefined at the onset of the response. The response would have also benefitted from more and earlier coordination with DCHS and DHR around HR practices.

However, as the response progressed, many of the initial challenges were resolved. Systems used in the pandemic and provided an opportunity to be formalized into processes, systems, and plans for future preparedness. Less successful systems create learnings for future improvements. PHSKC created new processes to mobilize staff.[381] Also, later in the response, teams began implementing technological tools and systems that supported the deployment of PHSKC staff to response operations.

Responder Safety and Health

PHSKC conducted a range of activities in support of physical health and mental wellbeing of its staff and volunteer responders, largely led by the Safety Officer and Employee Health teams. PHSKC, with support from King County's Employee Assistance Program and Balanced You programs, implemented several initiatives to monitor responder well-being and provide support, and encouraged response teams to focus on individual well-being in the face of the high stress environment of the pandemic. PHSKC efforts throughout the duration of the response met CDC PHEP capability 14 - Responder Safety and Health in challenging conditions. PHSKC's safety leads also supported physical health of employees at PHSKC COVID-19 field sites by conducting general safety hazard checks, offering safety trainings, providing consultation on safety issues, and responding to concerns that arose during concurrent events such as demonstrations and inclement weather.

[379] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[380] Marx, C. (2021)
[381] Marx, C. (2021)

Strengths

Safety and Wellbeing

Emotional and Psychological Wellness

In the face of significant professional and personal challenges created by the pandemic, PHSKC staff were buoyed by both responder wellbeing initiatives and peer support. Across the response, a nearly unilateral feeling was expressed that the staffs' "…biggest source of support during the response was their peers and coworkers."[382] Teams achieved this through different ways depending on their team structure and assignments. Some utilized regular check-ins, mindfulness practices, and virtual social engagements to bolster their teams.[383] For others, it was a profound willingness to be flexible and support one another through challenging assignments and environments.[384]

Innovation/Success: PHSKC Recognizes Staff, Partners, and Volunteers

To recognize the important work of PHSKC and its partners, a photo gallery was created to memorialize and honor the work of individuals who supported the COVID-19 response. PHSKC thanked all those who responded stating, "Whether you worked long hours behind the scenes or braved the front lines at testing sites and in the community, your perseverance, compassion and efforts to protect and improve the health and well-being of all people in King County did not go unnoticed. This tribute is for you."*

"One Year of the Pandemic: Recognizing our Staff Partners and Volunteers." Public Health Insider, Public Health- Seattle & King County, https://publichealthinsider.com/2021/01/26/one-year-of-the-pandemic-recognizing-our-staff-partners-and-volunteers/. 26 January 2021.

In addition to peer support, responder wellbeing initiatives were appreciated by many of the groups involved in the response. Incident safety teams maintained a strong focus on responder wellbeing throughout the response and developed partnerships, such as Employee Assistance Program and Community Wellbeing, to provide resources to responders.[385] Aside from providing information and routine check-ins, these programs involved on-site counseling services, meals and therapy dog visits when staff were onsite, online support meetings, wellbeing surveys, and other services as teams transitioned to remote working environments.[386] While not entirely mitigating the challenges presented by the pandemic, teams noted that resources focused on coping with stress and burnout were helpful to their teams.[387] Effective teamwork, coordination, and team composition

[382] Marx, C. (2021)
[383] Marx, C. (2021)
[384] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[385] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[386] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[387] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

of the incident safety team were noted as key components that facilitated success of safety and wellbeing initiatives.[388]

Image 6: Photos of PHSKC response efforts.

Physical Safety

There was an increase in security efforts to protect PHSKC staff since PICC and field staff regularly faced verbal abuse and threatening situations during the response. The safety team built a strong presence at field sites to conduct general safety hazard checks, offer safety trainings, and provide consultation on safety issues. PHSKC also responded to concerns that arose during concurrent events such as demonstrations and inclement weather. Alerts were issued and daily virtual huddles were held to have field operational leads check in and receive updates on any potential safety concerns. At the main PHSCK offices, FMD security escorts, onsite parking, badged building access was provided to offer protection to staff. There was also a focus on training staff on de-escalation strategies to manage threatening situations.

[388] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

Areas for Improvement

Lack of Standard Processes

The HMAC safety team experienced challenges completing their mission. For instance, with an overly broad initial scope of work, Safety Officers had to juggle responsibilities from non-response roles and had limited administrative support, which made it difficult to accomplish their mission.[389] The team also experienced challenges maintaining situational awareness of other response teams' roles and operations because they were not included in the planning stages for sites and operations.[390] Occasionally the Safety Officer identified was consulted too late in planning to Implement safer practices before the activity began; this was the case with I&Q .[391]

A lack of a standardized orientation to HMAC Safety for new responders may have contributed to limited engagement and made it challenging for the safety team to integrate across response teams. With limited bandwidth and an incredible number of response operations happening simultaneously, the HMAC Safety team was unable to conduct safety checks across many of the sites where response operations were occurring.[392]

Additionally, the safety team lacked key resources to conduct their work including a consistent responder tracking system and a centralized file management approach for safety documents. Yet in spite of all this, the team was still able to build effective cross-team communication and collaboration during the response, becoming a trusted source for guidance among response teams.[393]

Safety or Wellbeing Concerns

While PHSKC implemented a wide array of responder wellbeing initiatives and teams practiced extensive peer support, the severe mental and physical health impacts of the pandemic response on PHSKC staff were found across nearly all teams. Insufficient resources to achieve assignments and an inability to take time for self-care was a consistent concern.[394] Teams and individuals felt unable to take advantage of wellbeing resources or to get "space" from the pandemic due to the incredible workloads facing them.[395] Most teams noted this impacted their physical and mental health and personal relationships. Staff also noted navigating difficult decisions, public criticism at local and national levels, angry or frustrated clients, challenges of facing long-term structural inequities, personal impacts from the pandemic, and the challenging nature of disaster response work as significantly detrimental to their wellbeing.[396] Many PHSKC staff members stated that a focus on making structural changes, such as establishing response priorities, cross-training staff members so people were able to cover for others going on break, hiring staff more quickly, and allowing responders to

[389] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[390] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[391] COVID-19 PHSKC Key Informant Interviews. (2020-2021)
[392] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[393] COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[394] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[395] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)
[396] Marx, C. (2021); COVID-19 PHSKC Facilitated Discussions/ Team 'Hotwashes'. (2020-2021)

rotate out of the response more frequently, would have been more helpful than a focus on individual self-care.

RECOMMENDATIONS

Synthesis and analysis of the data collected through the after-action process resulted in 43 high level recommendations grouped across seven cross-cutting themes. These were identified to help prepare PHSKC for future emergencies by building on learnings from successes and challenges experienced through the COVID-19 pandemic response. Efforts to address these items are highly encouraged and are aligned with a culture of quality improvement but require significant time and resources to accomplish fully. Competing priorities, including emerging incidents, and limited staffing and resources may necessitate prioritization and recalibration of these recommendations.

RELATIONSHIP BUILDING

- Capitalize on the collaboration and relationships built with community partners during the COVID-19 response and continue to convene regularly with these organizations to foster a deeper partnership with Public Health - Seattle & King County (PHSKC) and sustain built relationships.
- Develop process to link philanthropic organizations and businesses with community-based organizations (CBOs), faith-based organizations (FBOs), healthcare, and other partners. When funding is made available that community partners could use for disaster response activities, take steps to share the information and link partners with funding opportunities.
- Formalize relationships forged during COVID-19. Embrace these relationships and develop a program to ensure the valued partnerships are maintained and strengthened. Consider:
  - Establishing a formal process where stakeholders and partners are officially recognized
  - Inviting stakeholders and partners to become involved in emergency planning meetings
  - Encouraging the participation of these groups in training and exercises
  - Seeking their counsel in areas where they possess a unique knowledge of the issue, problem, or question.
  - Continuing to pay community members, stakeholders, and partners for their work with PHSKC.
  - When appropriate, formalizing relationships with agreements, charters, or memorandums of understanding (MOUs).

STANDARDIZATION OF PROCESSES

- Evaluate innovations that worked during COVID-19 to determine if/how they could be documented for use in the future, including during an infectious disease response. Incorporate revised standard operating procedures into relevant response plans for programmatic areas (e.g., vaccination, testing, contact tracing, public information), as well as departmental coordination of incident management functions (e.g., centralized financial systems).
- Establish dedicated Logistics Unit to cover inventory tracking, shipping, and handling needs, and establish clear process prior to initiating distribution.
- Clearly define decision-making capacity for each role and who needs to sign off on various types of decisions and document in relevant standard operating procedures (SOPs), job descriptions, and staffing plans.
- Develop and document a policy that outlines clear expectations around existing PHSKC staff participating in emergency responses to Division leadership.

- Formalize incident command system (ICS) refresher training and just-in-time training for all personnel participating in response operations or who may be called upon to contribute.
- Explore using systems other than WebEOC to capture resource requests from non-traditional emergency management partners.

Hiring and Onboarding

- Develop and document standardized classifications in advance by selecting basic bodies of response work and documenting potential appropriate classifications.
- Develop job responsibilities and roles needed for human resources (HR) as part of the workforce mobilization team. This may include identifying a trigger for assigning HR staff or outlining necessary subject matter expertise needed around employment types.
- During responses, continue to offer HR a platform to reinforce the expectation that response teams should involve HR in their staffing conversations early and often. Ensure that HR is included in the agenda and standard attendees for relevant meetings.
- Document the protocol and lessons learned from working with staffing agencies during the response.
- Prioritize activities targeted at improving the ability of Public Health Reserve Corps (PHRC) to attract and retain diverse volunteers. Efforts should strive to significantly improve the diversity of newly recruited PHRC members and active participation of Black, Indigenous, People of Color (BIPOC) volunteers.
- Update or create policies which address maintaining or increasing diversity of PHSKC staff. Develop deliberate policies engaging diversity and equity issues from the lessons learned in the response. For example, prioritize activities targeted at improving the ability of PHSKC to attract and retain diverse applicants and hires.

Team or Staffing Capacity

- Develop and document a staffing model including number of staff needed during surges.
- Hire and cross-train additional program staff to enable the use of vacation without fearing their absence will create more workload and stress for colleagues on their team.
- Identify reliable funding for public health to effectively respond to public health emergencies.
- Identify bridge funding between infusions of federal and state emergency response money to avoid disruptions in response activities and prevent staff layoffs and rehires.
- During steady state, maintain open continuous recruitments for rosters of surge staff on standby until deployment during an emergency.

Safety or Wellbeing Concerns

- Consult with Employee Assistance Program (EAP), Balanced You, Safety Officer, and other relevant groups to develop and document plans to ensure targeted access to culturally competent mental health/well-being resources for responders.
- Develop and document plans to allocate time and space for training and professional development so that staff feel supported in their role and can maintain a balanced workload between ongoing and response duties during longer responses.

- Create plans that focus on making structural changes, such as establishing response priorities, cross-training staff members so people are able to cover for others going on break, hiring staff more quickly, and allowing responders to rotate out of the response more frequently, in order to allow staff to take advantage of individual self-care needs.
- Explore making safety and wellbeing resources available to all responders, not just those who are King County employees.

EQUITY

- Work with emergency response leadership to hold more conversations about white supremacy and white dominance in the workplace.
- Continue collaborative work on disability equity/accessibility. Integrate and institutionalize successful practices from COVID-19 response into public health services and future emergency responses.
- Consult with leadership from the Equity and Community Partnerships team to designate one group (e.g., Equity Response Team) of internal staff as the official body for conducting initial equity reviews of proposed policies and programs.
- Develop and document a clear, consistent process for conducting initial equity reviews of proposed policies and programs. Delineate the procedures for doing an initial, internal-only equity review vs. a secondary review that involves feedback from external stakeholders.
- Hire more career service equity positions and build equity work into job descriptions. Add accountability for racial justice and equity goals into job descriptions and performance evaluations.
- Advocate for the adoption of common service delivery and accessibility standards across PHSKC programs to accommodate diverse communities. The standards should be met day-to-day as well as during disasters. This may include training for staff to review accessibility and health literacy standards of written materials (plain language, considerations for images, etc.), maintaining documented Americans with Disabilities Act (ADA) accessibility best practices for programs/services, or creating protocols and training for incorporating ADA standards into operations.
- Ensure all plans for continued work with CBOs, community navigators, and other community leaders include compensation.
- Invest time for each public health program to better align with the values established by the declaration of Racism as a Public Health Crisis. The declaration identifies a shared vision for equity to strengthen engagement of all staff in the department's equity and anti-racist agenda, unify efforts, and better center community needs.
- Address pay disparities between Special Duty Assignments and incoming higher negotiated amounts for Temporary Limited Term which created structural inequity among new hires.

COORDINATION/COLLABORATION

- Review structures to promote greater internal, cross-team coordination to help various response teams stay aligned with changing guidance and awareness of activities being led by other teams. Identify ways to support common operating picture to increase collaboration in efforts. Continue broad information sharing between internal teams by disseminating relevant materials and developing plans on a knowledge management driven shared portal.

- Perform an in-depth equity analysis of the burden and administrative barriers county business processes present to critical (small) partners like navigators, translators, and presenters. Work with Equity Response Team to review analysis and prioritize barriers for removal.
- Establish a quarterly or annual meeting to bring equity teams from key partner organizations together to connect and share best practices.
- Establish and maintain regular systems to continue relationships and planning in advance of an emergency with partners (e.g., municipalities and state agencies, businesses, healthcare systems and laboratories) that supported and/or would have a key role in collaborating during future response operations, such as testing, vaccination, or emergency medical services. This could include regular communications, meetings, contributions to emergency planning, and opportunities to train or practice response plans together.
- Recommend teams such as CBOs task force, FBOs task force should have a consistent seat at the table early on in response planning. Ensure avenues of participation for community partners who may not have the capacity to engage via comment periods, sharing of meeting content, and accessibility to meetings via means other than in-person.
- Seek ways to include direct community participation in ICS structures for smaller, less complex, or shorter duration events, to center community voices and empower the community to allocate response resources. Document these enhancements in the Emergency Services Function (ESF) #8 plan.
- Consider adopting a formal shadowing/mentoring process for departments seeking to launch community-led projects in the future to learn from PHSKC divisions that successfully engaged the community during COVID-19. For example, community-driven models for decision-making and ways to engage the community in programmatic design and implementation.
- Model with community members our willingness to engage in uncomfortable conversations. While being aware of our “county hat” and our shared humanity, make space to talk about barriers impacting our communities. This could include training or guidance for staff on active listening, conflict mediation, or receiving critical feedback during community meetings.
- Continue to support and further incorporate language access capabilities facilitating broader coordination and collaboration.
- Support purchasing and support of auxiliary devices for people accessing county services. Auxiliary devices are often labeled as supports for people with disabilities such as people who are deaf or hard of hearing but are useful to many community members.

CONCLUSION

The COVID-19 pandemic is an unprecedented public health emergency, testing health systems at all levels of government. To add to the already complex nature of the COVID-19 response, local governments across the country simultaneously responded to civil unrest, extreme weather, and catastrophic fires throughout 2020, further straining the already overwhelmed response infrastructure and complicating the COVID-19 response. With this complex disaster landscape, PHSKC acknowledged the importance of critically evaluating their disaster response to date and identified corrective actions to improve response efforts going forward, continuing this process as the COVID-19 response endures.

This AAR details the strengths and areas for improvement exhibited during PHSKC's response to COVID-19 in the operational period of assessment from January 2020 – January 2022. All recommendations identified during the creation of this report are synthesized into a COVID-19 Improvement Plan, which provides a roadmap for PHSKC to guide efforts to improve their response to future communicable disease outbreaks and other public health emergencies.

APPENDICES

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HMAC IAP 113

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Marx Capstone Final

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PHSKC COVID-19 Intra Action Quad Chart_SSTAR

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The list below is reflective of the agencies who participated in an after-action review interview, facilitated discussion/hotwash, or a town hall event. Many thanks to the incredible PHSKC staff, King County departments, volunteers, community organizations, trusted leaders, healthcare organizations, and public and private sector response partners that provided insights and feedback into the after-action review process. We are grateful for all that you have done to support PHSKC's COVID-19 response and for sharing your reflections and expertise.

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Amigos de Seattle
Atlas Genomics
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Central Area Senior Center
Church of Mary Magdalene at Mary's Place

Evangelical Lutheran Church in America
EvergreenHealth
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HealthierHere
HealthPoint
Hopelink
India Association of Western Washington
International Community Health Services
Kaiser Permanente
King County Promotores Network
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Neighborcare Health
Northwest Healthcare Response Network
Public Health Reserve Corps
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Shoreline Fire
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PHSKC COVID-19 AAR ONLINE STAFF SURVEY SUMMARY

PHSKC COVID-19 AAR Online Survey Overview

A total of 414 respondents completed the Public Health Seattle - King County (PHSKC) COVID-19 After-Action Report Survey that collected data regarding the response between January 2020 - March 2022. The respondents were PHSKC personnel from an array of teams with a variety of response roles. With the range of respondent experiences, and the numerous questions asked about PHSKC COVID-19 response, there were many valuable takeaways.

Survey Respondent Characteristics

All respondents (N=414) completed at least the first four questions of the survey providing their general characteristics and overall perception of PHSKC's response efforts. The following bar chart shows the distribution of respondents based on the work area with which they were primarily affiliated. The most common primary work areas were Public Information Contact Center (PICC), Community Health Services (not otherwise listed), Disease Investigations, and Contact Tracing. Those who chose "other" as their primary work area listed roles that included Child Care Taskforce, Public Health Clinics, EPIC, etc.

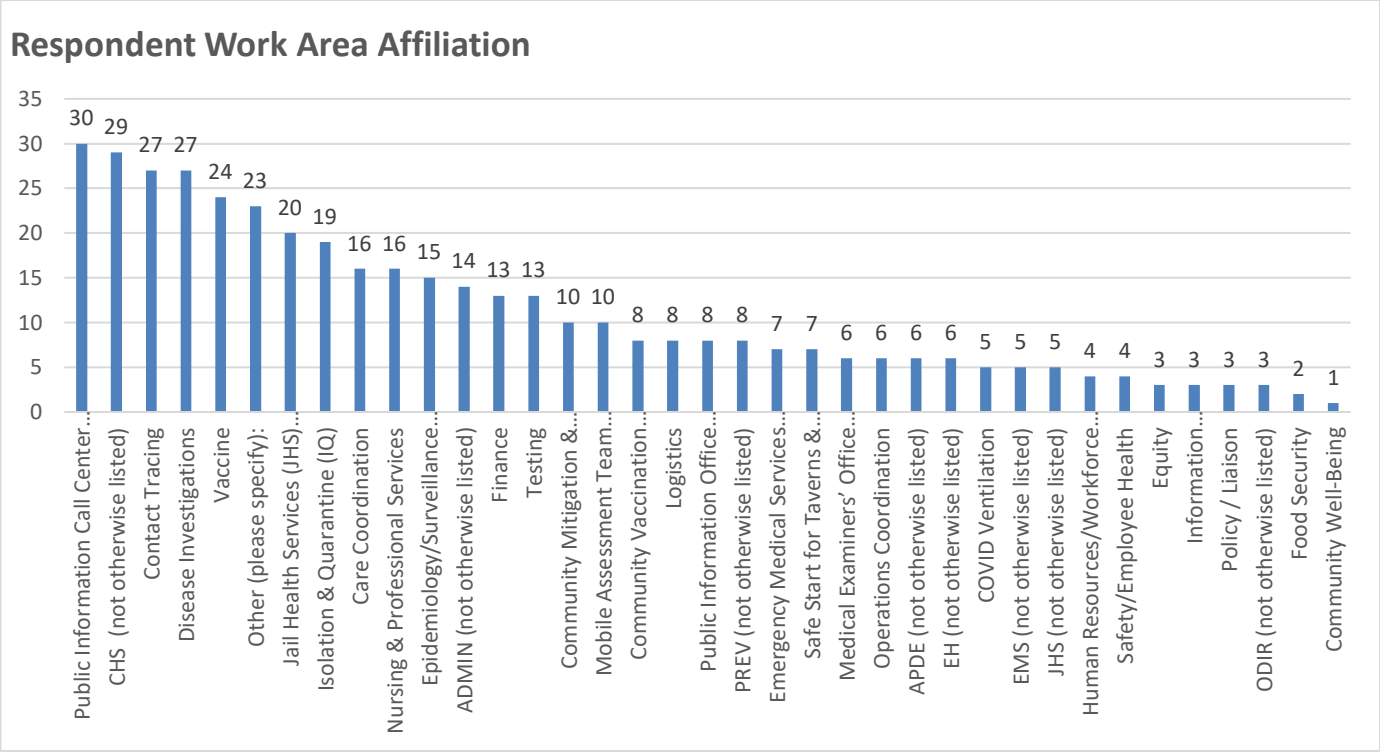

Chart 1: Respondent Work Area Affiliation

Out of the 414 respondents, the majority of those were a team member (71%) and not directly in charge of any specific work area. Those who indicated they held a leadership position included team leads (14%), division leads (5%) and department leadership (3%). There was a significant amount (7%) that did not identify with any of those roles. Some of the personnel that answered "other" for their role in the COVID-19 response felt they filled multiple roles or were leads but not in a supervisory capacity.

Staffing COVID-19 Response Roles

There were several comments throughout the survey as to staffing levels, rates of hiring, and overall turnover. Respondents were asked to list the first day of the month and year that they started in their COVID-19 team/work areas. The chart below depicts the number of personnel dedicated to reducing the effects of COVID-19, by their start date. Very early in the pandemic, many survey respondents joined PHSKC's response efforts. By February 2020, at least 55 of the staff responding to the survey were working in their COVID-19 teams/work areas and 88 survey respondents joined these efforts in the month of March 2020 alone. The number of PHSKC staff respondents starting their roles tapers off after April and May 2020. However, there is a steady number noting they joined the effort throughout 2020 and 2021. Some respondents even began their PHSKC COVID-19 role as late as March 2022.

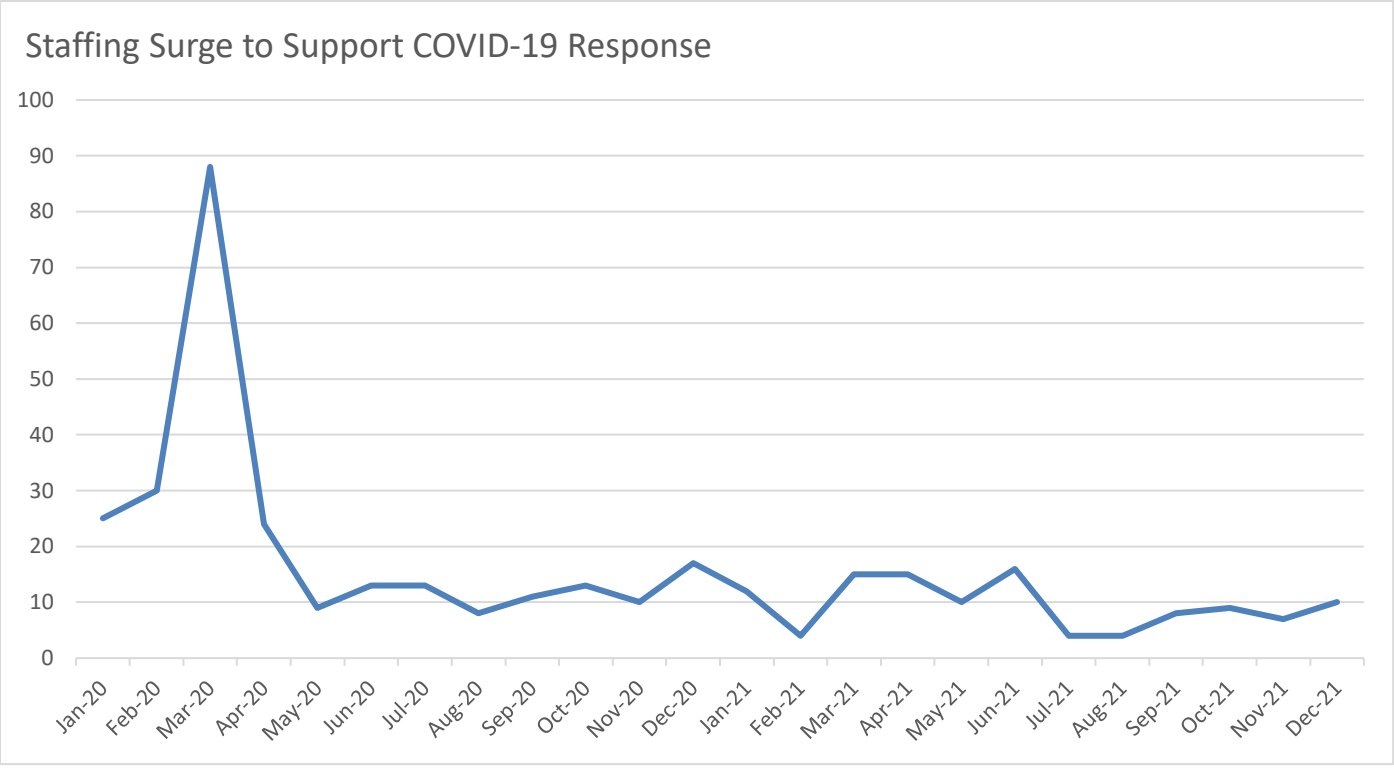

Chart 2: Start Date to Support COVID-19 Response

PERCEPTIONS OF PHSKC RESPONSE

Overall Rating

Respondents overwhelmingly approved of PHSKC's response to COVID-19 with 78% rating the response good or excellent. There were few respondents that believed the response was poor or fair (10%). Of the respondents who were members of leadership or led their team/area, 84% felt the PHSKC response overall was good or excellent. Only 5% of leadership perceived the response as poor or fair. For those who contributed to a team, 77% rated the response as good or excellent while 12% scored PHSKC as poor or fair. Overall, most respondents indicated that they approved of the PHSKC response.

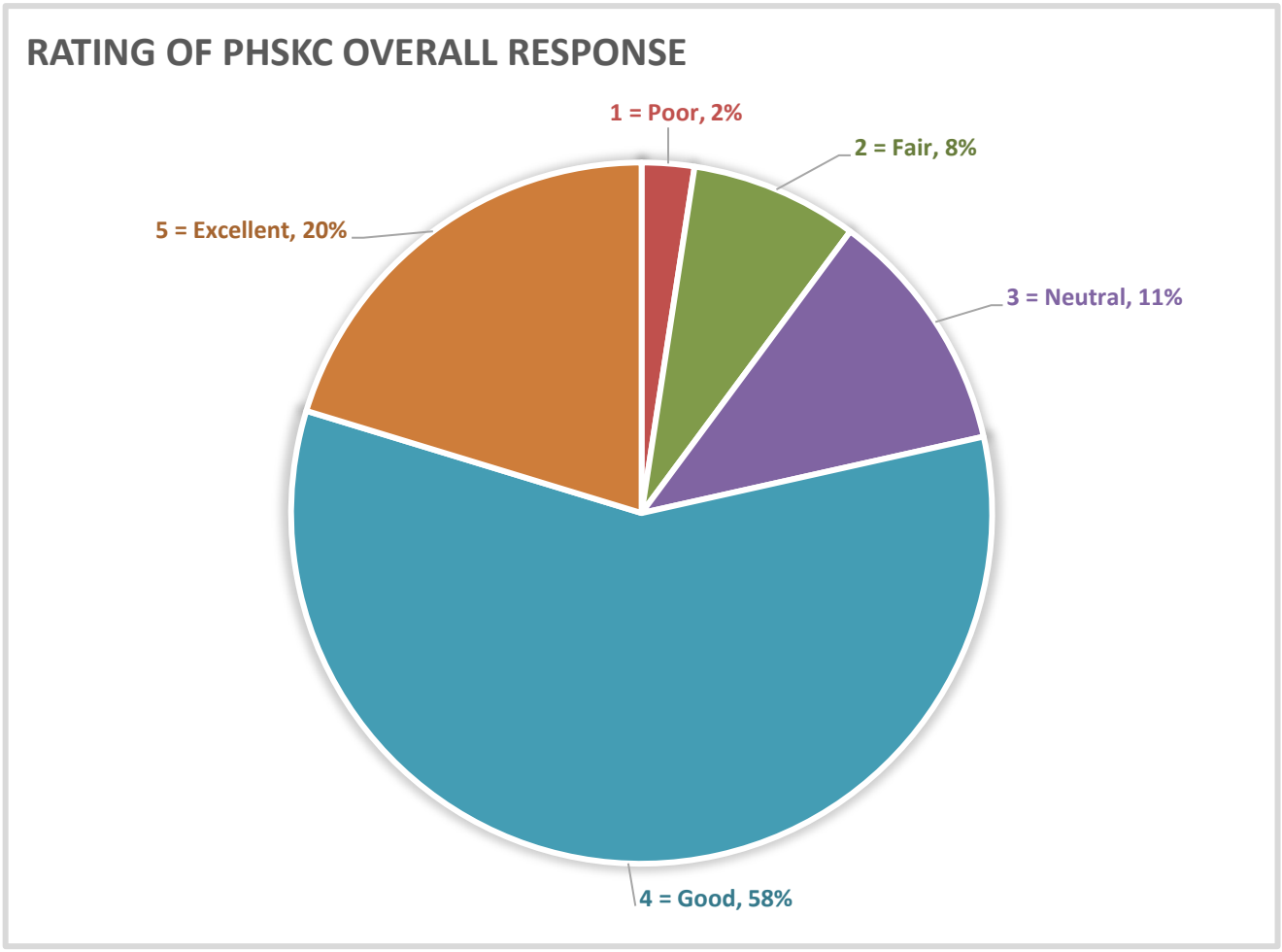

Chart 3: Rating of PHSKC COVID-19 Response Overall

First Three Months and the Last Three Months of Response Operations

The next series of charts graphically depicts a comparison of PHSKC team thoughts on major stress areas of responding to the pandemic. All respondents were asked to think through their roles, skills, training, staffing, resources, information, and coordination capabilities during the first three months of the response. They were then asked to examine those same areas in the last three months to see If there were noticeable changes. The graphs demonstrate with transparency if/to what extent the perspectives of staff towards programs and processes changed over time.

Staff Roles, Skills, and Training

Many of the staff survey respondents felt confident about understanding their primary response roles even early in the pandemic and believed they had the appropriate skills and training to complete their work. In the first three months, 78% of respondents agreed or strongly agreed that they understood their role. One respondent expressed an escalation of stress and responsibility in their role as local cases evolved but took their concerns to leadership and found support and productive solutions.[397] Other respondents agreed that PHSKC went through a "learning phase" but felt the team supported each other to solve problems.[398] Many spoke of the first three months as overwhelming until more personnel were hired and processes evolved. When rating the last three months of the period of time the survey was evaluating (January - March 2022), 87% of respondents understood their roles. Overall, this demonstrated that there was clarity around what response roles entailed and the responsibilities people were expected to fill.

[397] PHSKC COVID-19 AAR Survey Respondent Question 5
[398] PHSKC COVID-19 AAR Survey Respondent Question 5

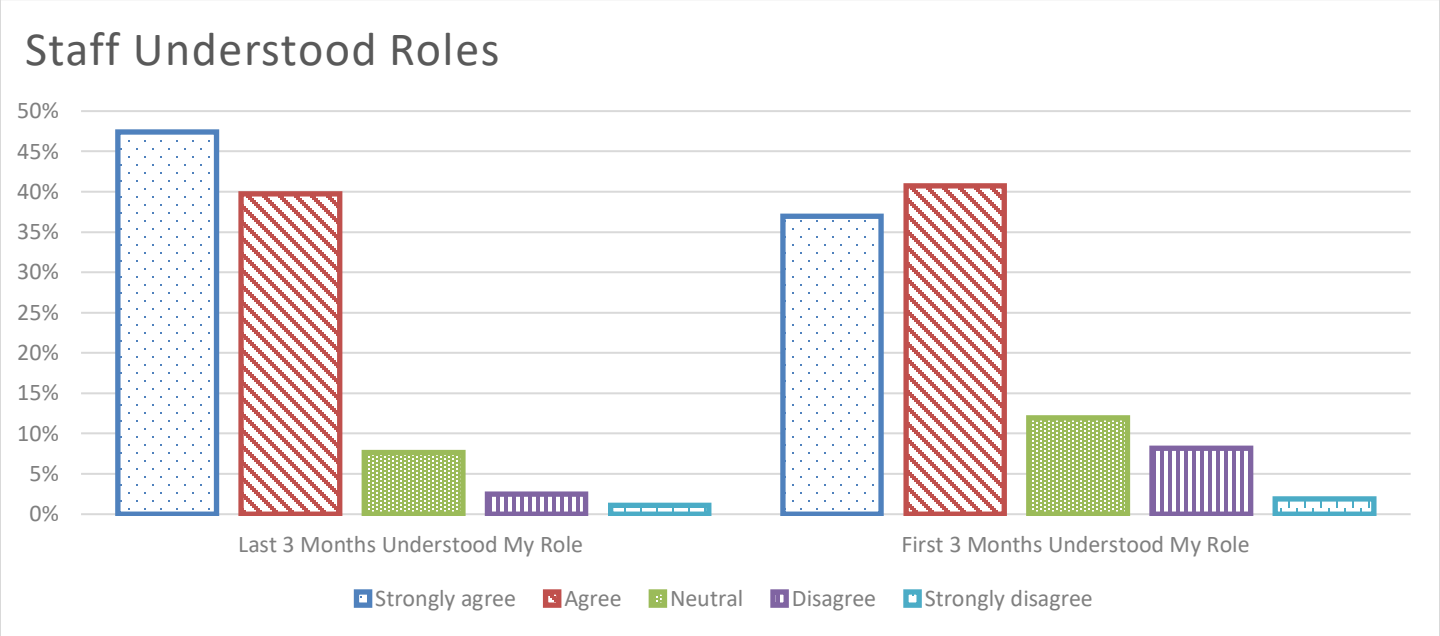

Chart 4: Staff Understood Roles

"I felt lacking in understanding or training related to my role, and this feeling seemed shared by most in the response. Fortunately, there was an almost unanimous comradery and solidarity to support each other, cross-train, explain processes and response-related ways of doing things, give grace and understanding, and be committed to creatively finding a way to accomplish the work. Where we were lacking in formal training and structure, we more than made up in smart, savvy staff."[399]

Thinking back to the first three months of the response, 86% of respondents felt they had the necessary skills which did not change substantially compared to the last three months. However, having adequate training scored lower in the first three months with only 56% agreeing or strongly agreeing. Some respondents noted they were hired to fill one role but it was quickly rebranded to another or they created the training for others as they learned their job duties.[400] There was a marked improvement in the last three months around training with 67% of respondents agreeing or strongly agreeing that they had the training required to complete their work. Continued improvement in understanding of roles and acquisition of skills is a laudable accomplishment with a high level of reported staff turnover during this two year period. However, with 30%+ of respondents regardless of timeframe either neutral or disagreeing they had adequate training for their response role there are still opportunities to improve in this area going forward.

[399] PHSKC COVID-19 AAR Survey Respondent Question 5
[400] PHSKC COVID-19 AAR Survey Respondent Question 5

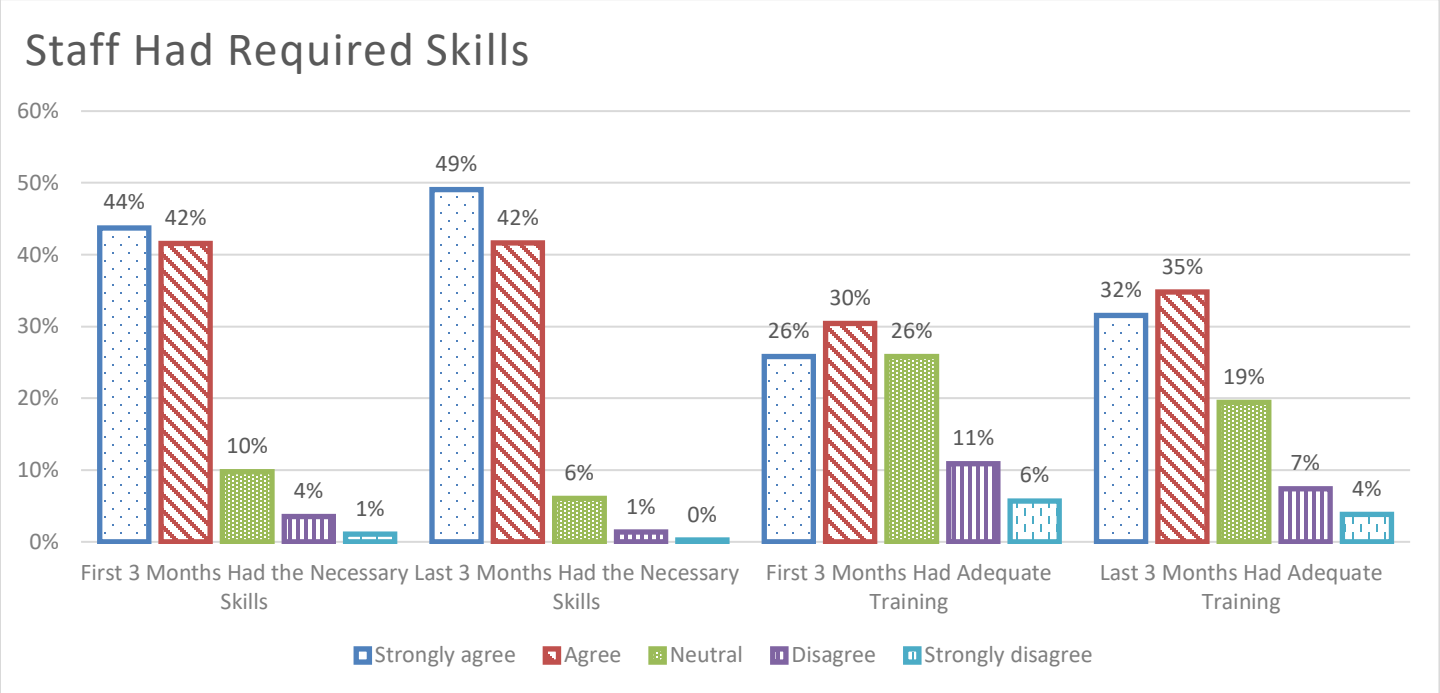

Chart 5: Staff Had Required Skills and Training

Staffing and Resources

Over half of respondents were neutral, disagreed, or strongly disagreed that they had adequate staffing during the pandemic. Compared to the others statements being evaluated by respondents, “I feel my team/work area was adequately staffed to perform our function in Public Health’s COVID-19 response” was the only one to have more than 50% of respondents neutral or disagreeing with it.

Although agreement on adequate staffing increased in the last three months to 48%, this was only a slight improvement (3% increase). Some respondents expressed they all were "working beyond capacity" and people could not be hired fast enough.[401] There were consistent remarks by survey respondents regarding some response areas being underresourced as far as personnel and some salaried employees filling with long hours or work weeks to meet the needs of the response.[402]

[401] PHSKC COVID-19 AAR Survey Respondent Question 6
[402] PHSKC COVID-19 AAR Survey Respondent Question 6

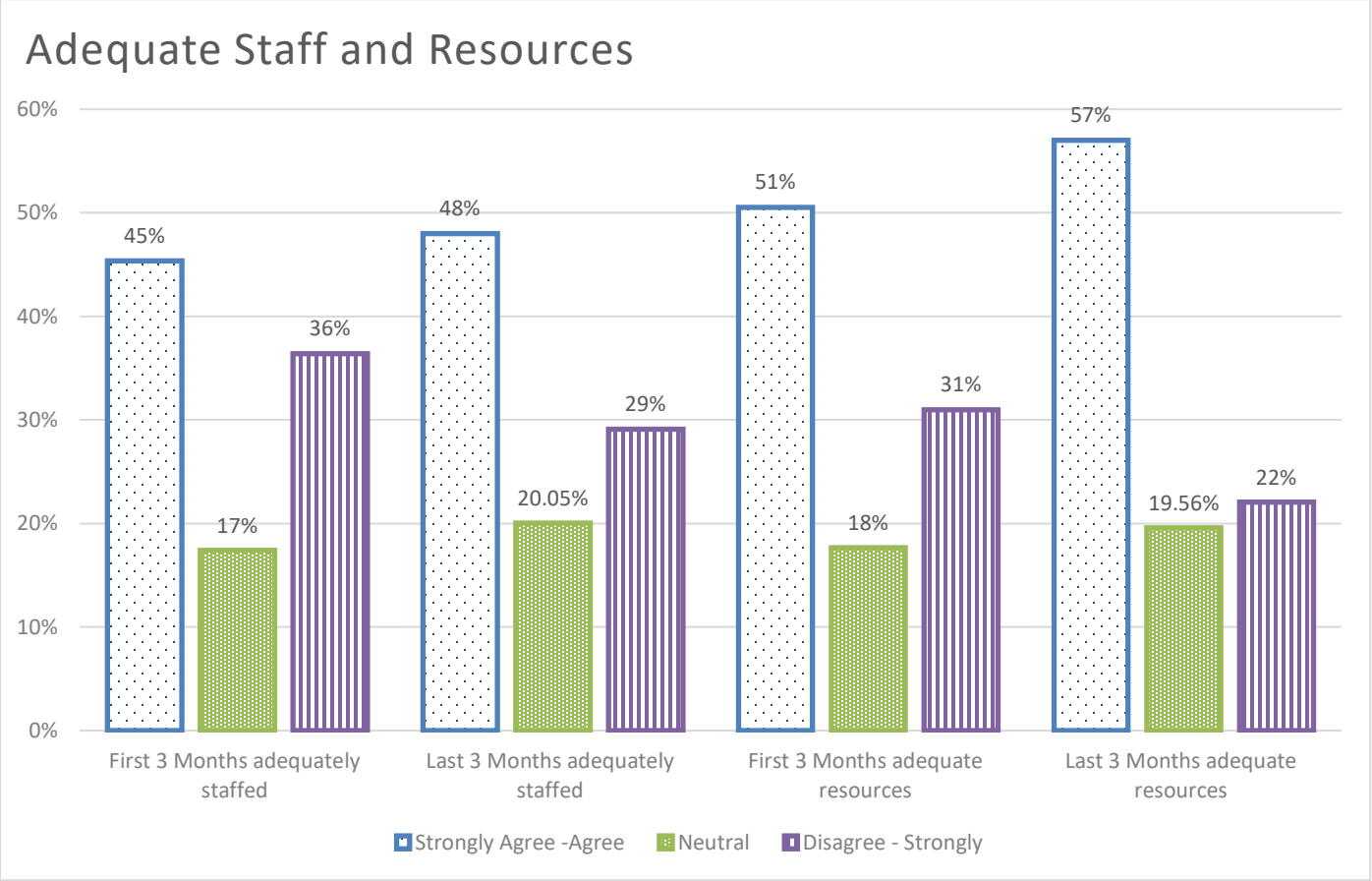

Chart 6: Adequate Staff and Resources

Slightly more than half of respondents (51%) felt there were adequate resources in the first three months. This improved slightly for the last three months, with the total number of staff that agreed to some extent or were neutral over adequate resources increasing. However, it is still notable that 42% of respondents were neutral or disagreed to some extent that they had enough resources to perform their function in the response.

When asked what resources, trainings, or information would have helped the respondent and/or their team/work area, over 200 people provided open-ended feedback. There were a range of suggestions including additional staffing, more training on response roles, improved communication and coordination between teams in the field as well as those between departments, administrative and human resources support, etc. Some of the most frequent types of suggestions are listed below along with examples from open ended responses.

- COVID-19 Safety: Staying self-informed of CDC guidance; sharing medical and non-medical knowledge
- Communication: Better communication and coordination among teams; need for continuous liaison
- Emergency Prep/Management: Frequent emergency preparedness training; staff accountability

- Information Management: Improved centralized data systems, information sharing, public reporting
- Onboarding: Uniform training for all new hires; gap in knowledge among early hires in the pandemic
- Resource availability: Inequities in PPE and testing kit supply and distribution; training on risk reduction
- Staff Care: Implement rotations and breaks; combat burnout; encourage self-care
- Staffing: Increase staffing to manage surge; recruited diverse backgrounds; inadequate HR resources

Internal Information

There was not a drastic change in respondents thoughts on having relevant information available and the frequency in which it was shared. Most respondents generally agreed they had the information necessary to perform in their COVID-19 response roles. They also agreed or strongly agreed the information was shared in a timely manner and with enough frequency. Some respondents felt the information mangement could have been more organized in first three months of their assigned role as they had challenges knowing where to go for information.[403] The location of information, who to contact for certain data, and an Information Library were suggestions for areas of improvement by respondents.[404]

[403] PHSKC COVID-19 AAR Survey Respondent Question 5
[404] PHSKC COVID-19 AAR Survey Respondent Question 7

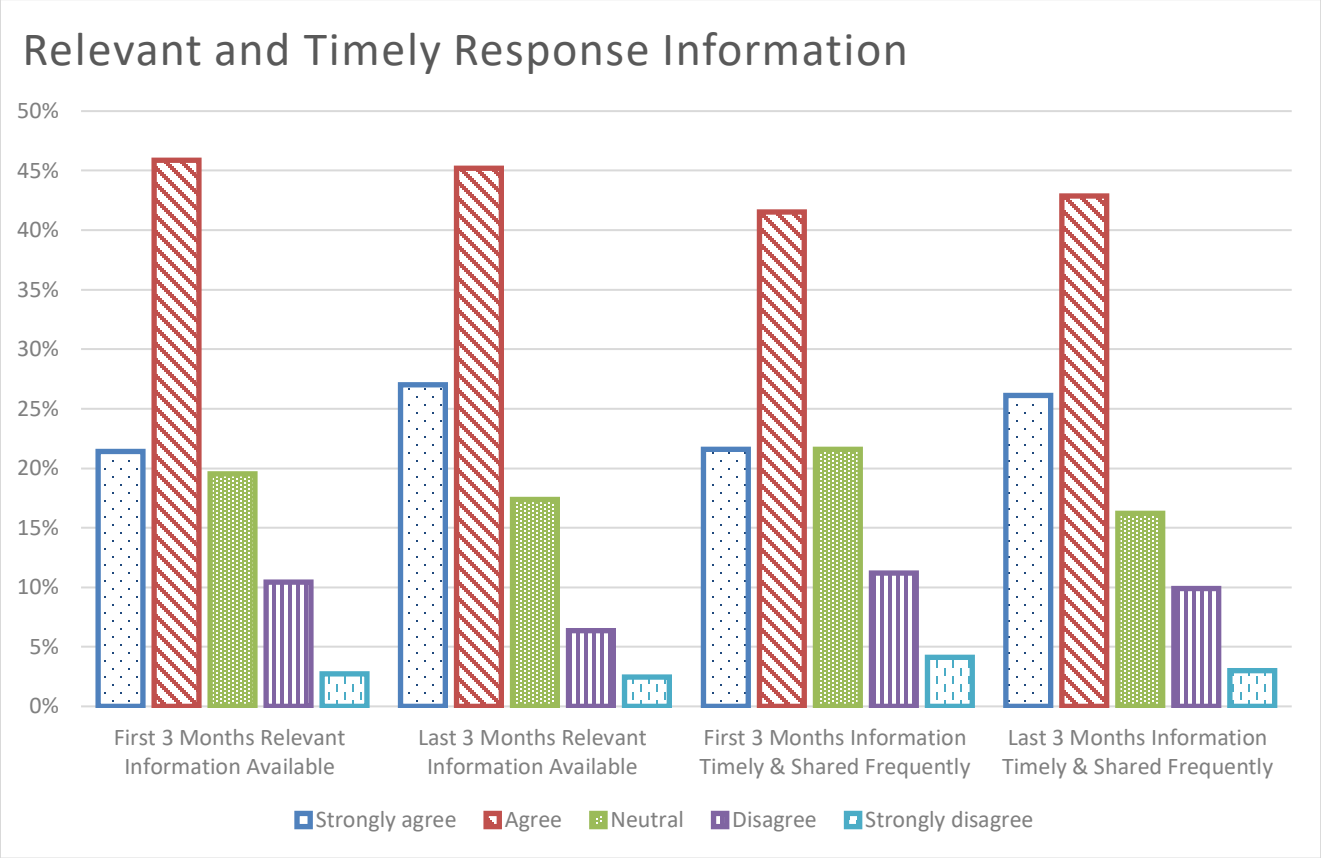

Chart 7: Relevant & Timely COVID-19 Response Information

Coordination and Known Points of Contact

The improvement in coordination and knowing who to contact on specific issues within PHSKC is depicted in the charts below. Perceived coordination between teams improved from the first three months (43% agreed or strongly agreed) to the last three months (54% agreed or strongly agreed). Although this was a slight increase, it showed improvements in coordination between other teams and work areas in Public Health's COVID-19 response. Similarly, there was an increase in the amount of people who indicated they knew who to contact if they had any issues as part of Public Health's COVID-19 response. It went from 64% agreeing in the first three months to 74% agreeing to some extent in the last three months.

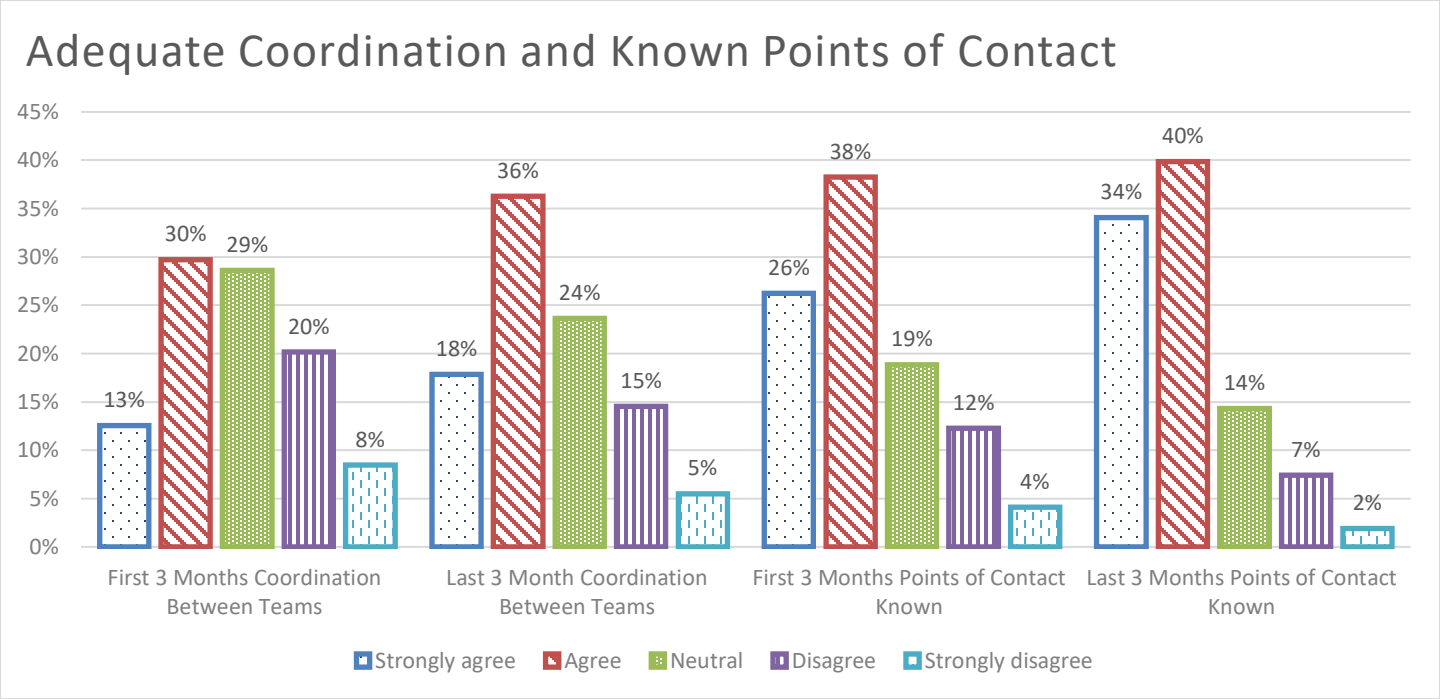

Chart 8: Adequate Coordination and Known Points of Contact

"The coordination between teams has greatly improved and I have been able to learn different resources and people to connect me to resources now."[405]

[405] PHSKC COVID-19 AAR Survey Respondent Question 6

Key Strengths (From Survey)

Respondents were asked to identify up to three key strengths of their teams and work areas in relation to the PHSKC response and recovery efforts from a list of options. Please note that since each respondent could choose up to three options totals will be more than 100%. Respondents overwhelmingly chose the organization's flexibility/adaptability and teamwork with approximately 65% of respondents choosing those two areas. Equity considerations and collaboration also scored highly with 36% and 35% respectively. These strengths were echoed in the comments provided by many as to the pride they felt in the overall PHSKC response to COVID-19 and its commitment to the communities they serve.[406]

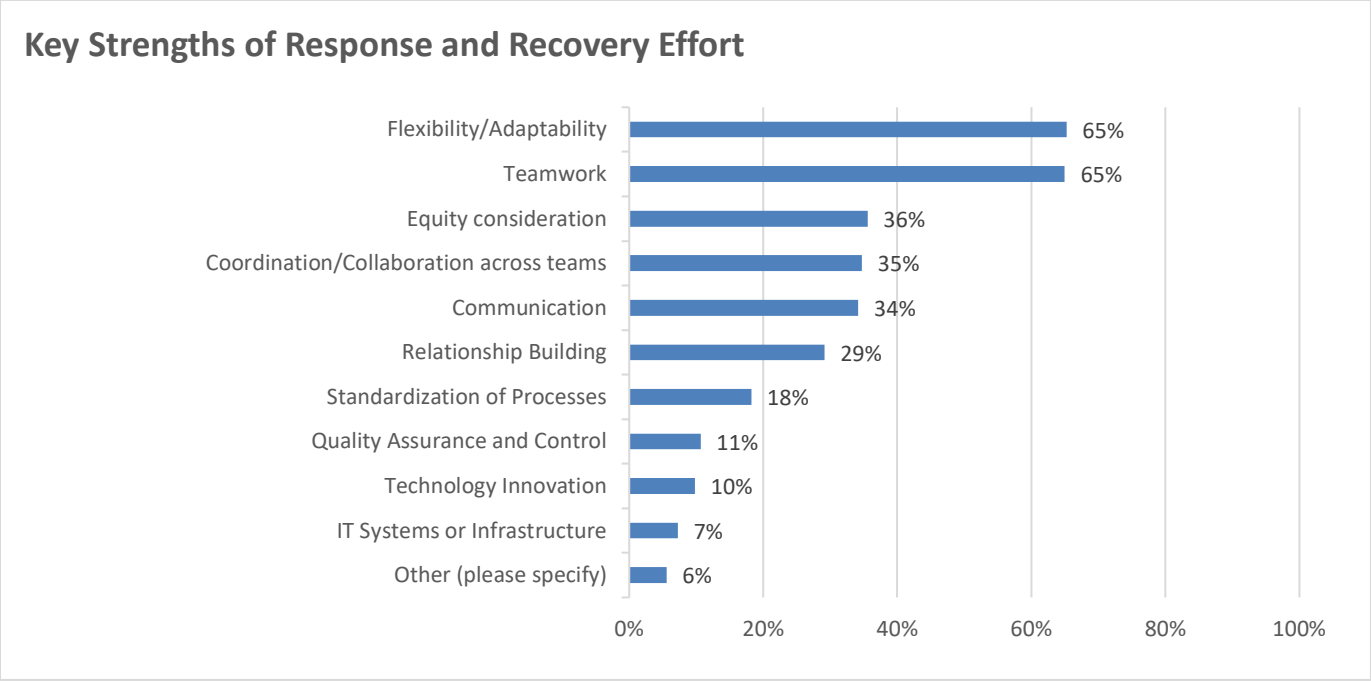

Chart 9: Key Strengths of Response and Recovery Effort

"This was truly an unprecedented experience and considering the circumstances, I felt public health did an amazing job. Despite many challenges and frustrating aspects, I was blown away by the brilliance and perseverance of my team members and others working on the response. It has been an honor supporting this work at public health."[407]

[406] PHSKC COVID-19 AAR Survey Respondent Question 13
[407] PHSKC COVID-19 AAR Survey Respondent Question 13

Respondents also offered through open-ended questions best practices, protocols, or systems that their team has in place to build long-term resilience and/or use in a future response. Regular communication with teams and trainings created during the pandemic were frequent topics. The following are some of the common types of best practices along with examples related to the types of information.

- Community Outreach and Coordination: Including community members; relationships that have been built; Community Mitigation and Recovery; Teamwork
- Equity: Equity Response Team's flowchart; language access team; care coordination team; community navigators
- PICC: Nurses in PICC; expand the PICC to cover general public health concerns; phone line provides public health information
- Resources: Expenditure back up repository; automating information retrieval
- Training: Cross training; standardizing training; training check lists; mentorship relationships
- Team and Self Care: Had grace with each other; leads were willing to help; daily opportunities to connect and relax as a team
- Work Schedule Flexibility: Flexible hours; Telecommuting

Key Challenges (From Survey)

Respondents were asked to identify up to three challenging areas that their teams endured in relation to the PHSKC response and recovery efforts from a list of options. Please note that since each respondent could choose up to three options totals will be more than 100%. The key areas noted were staff and team capacity (57%), hiring and onboarding (36%), and unclear processes (36%). Although team coordination and collaboration was a strength, it was also noted as an area for improvement as 29% of respondents chose this area as a challenge. Staffing and onboarding was mentioned numerous times in the open-ended comments as an area for improvement with an understanding that their HR department was hiring as quickly as possible.[408] Onboarding was an area that several survey respondents felt could have been more organized and was neglected in the effort to put time and attention into the response.[409]

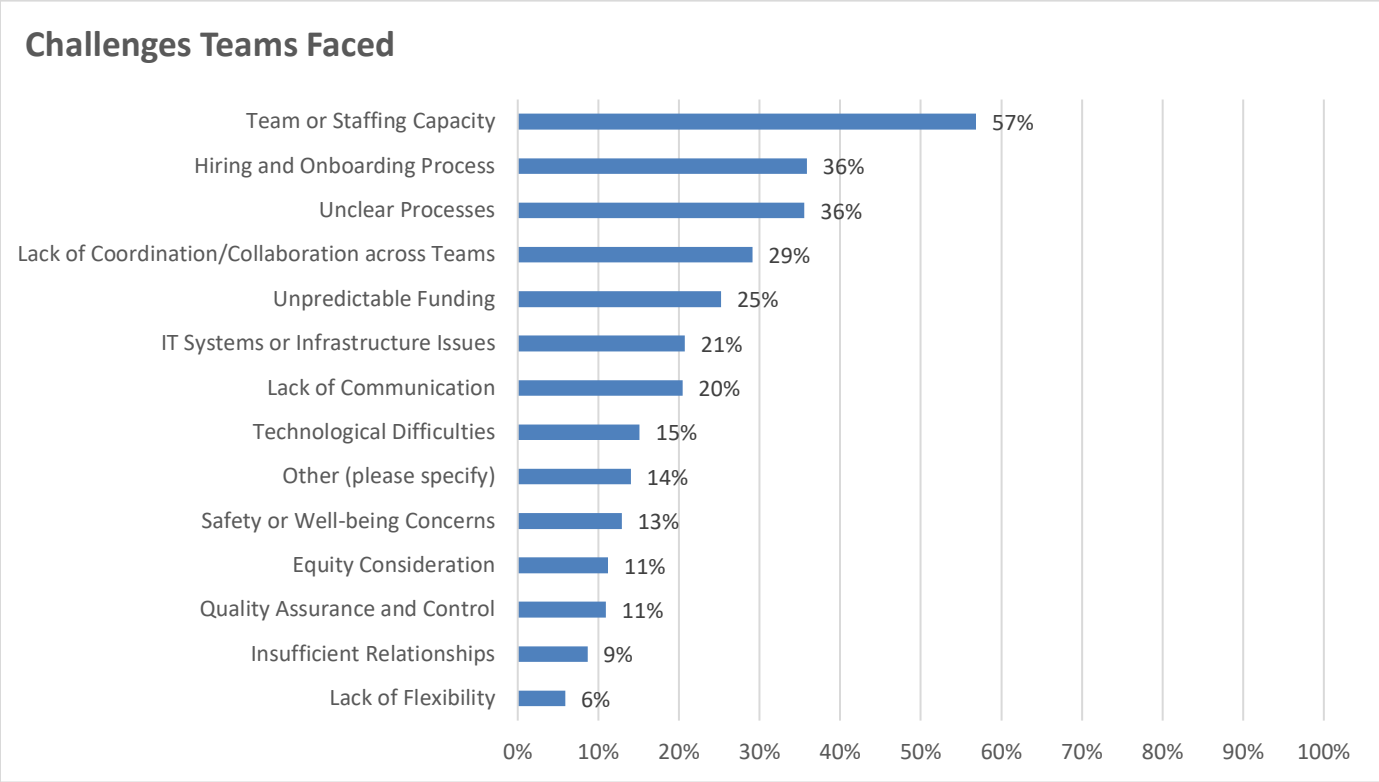

Chart 10: Challenges Teams Faced

[408] PHSKC COVID-19 AAR Survey Respondent Question 7
[409] PHSKC COVID-19 AAR Survey Respondent Question 7

Recommendations (From Survey)

Survey respondents were provided a space to provide their recommendations for future actions to address areas for improvement. Over 200 respondents offered their opinions. Answers were related to topics ranging from improving internal communication and collaboration, supporting staff onboarding, improving employee wellness, maintaining equity and fairness, and continuing partnerships with community organizations. Open ended suggestions included the following, organized by similar types of recommendations.

- Collaboration: Compensate trusted community partners; Keep talking to our community partners
- Communication: Clarify the infection control/prevention needs; put out information while acknowledging it's the "best we know for now"; consistent messaging
- Disaster Planning: Preparedness plans that proactively address equity; systemic review of response focused on equitable access and distribution of resources
- Equity: Clear processes; plan to reach the most marginalized populations with an abundance of resources
- HMAC and Incident Response: Clearly identify roles and responsibilities across sections; stable funding of key roles and improvements to the HMAC system
- Hiring Staff: Career service positions; streamlining the interview processes; adding emergency staff to the recall pool
- Staff Retention: Adding paid time off for those working on the response; financial compensation; flexible schedules; health insurance for all staff
- Training: Emergency response training in every employee's onboarding; Regular trainings to increase comfort; training on ICS

GRAPHICS AND INCIDENT STATISTICS

PHSKC COVID-19 DASHBOARD SUMMARY

As COVID-19 tracking data was collected for King County, it was stored and reported on the Dashboard. This summary report was displayed on the Public Health - Seattle & King County website (https://kingcounty.gov/depts/health/covid-19/data/summary-dashboard.aspx). The following screenshots provide cumulative case information, hospital admissions, inpatient rates, and vaccination rates as of May 27, 2022.[410]

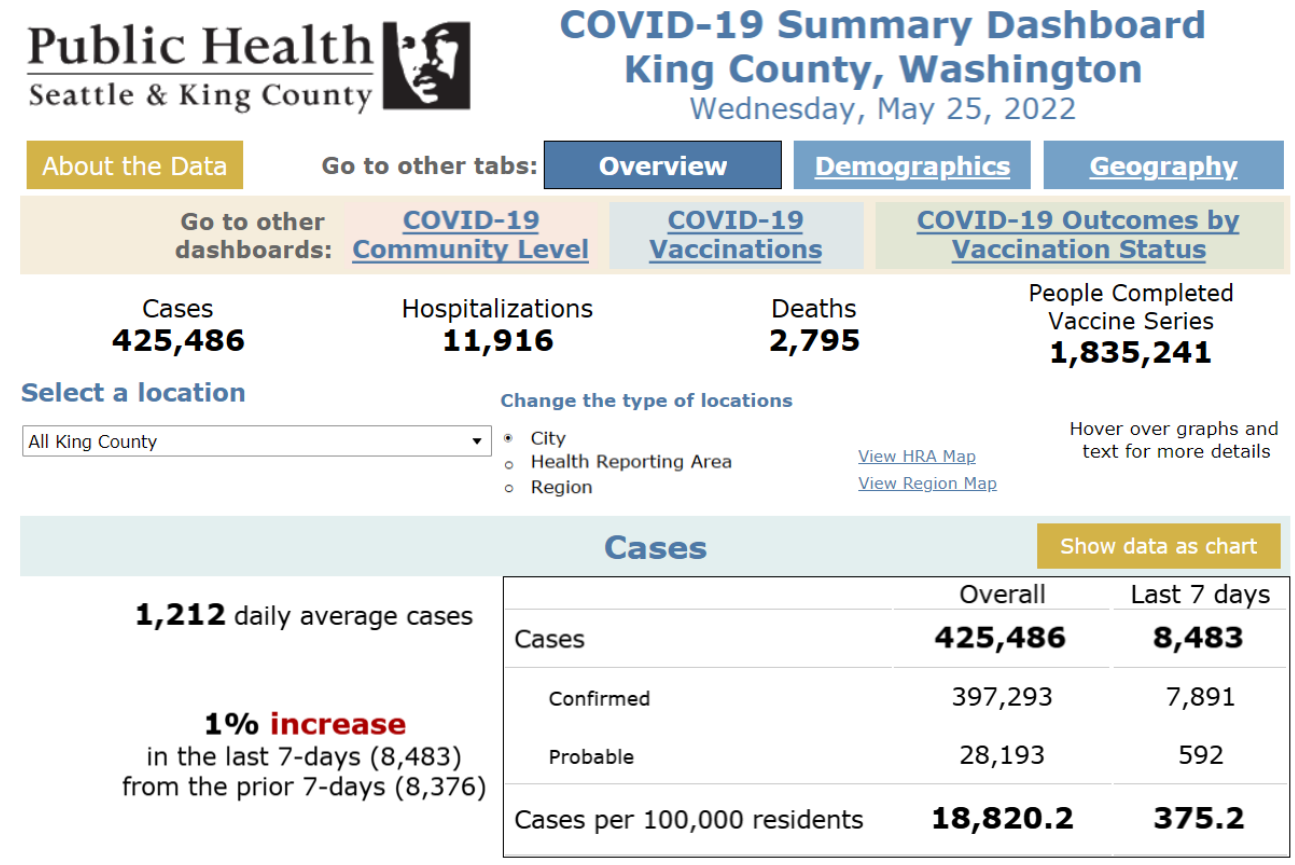

Image 7: King County COVID-19 Activity and Cases

[410] Public Health Seattle & King County. COVID-19 Summary Dashboard. Accessed May 27, 2022. https://kingcounty.gov/depts/health/covid-19/data/summary-dashboard.aspx

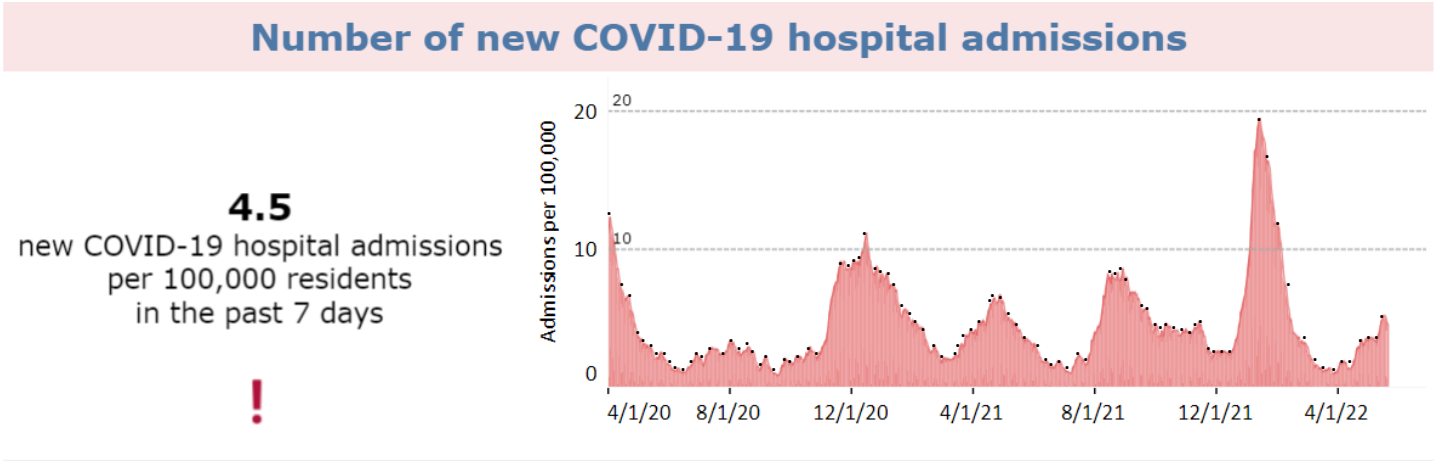

Image 9: Seattle & King County COVID-19 Hospitalization Rates

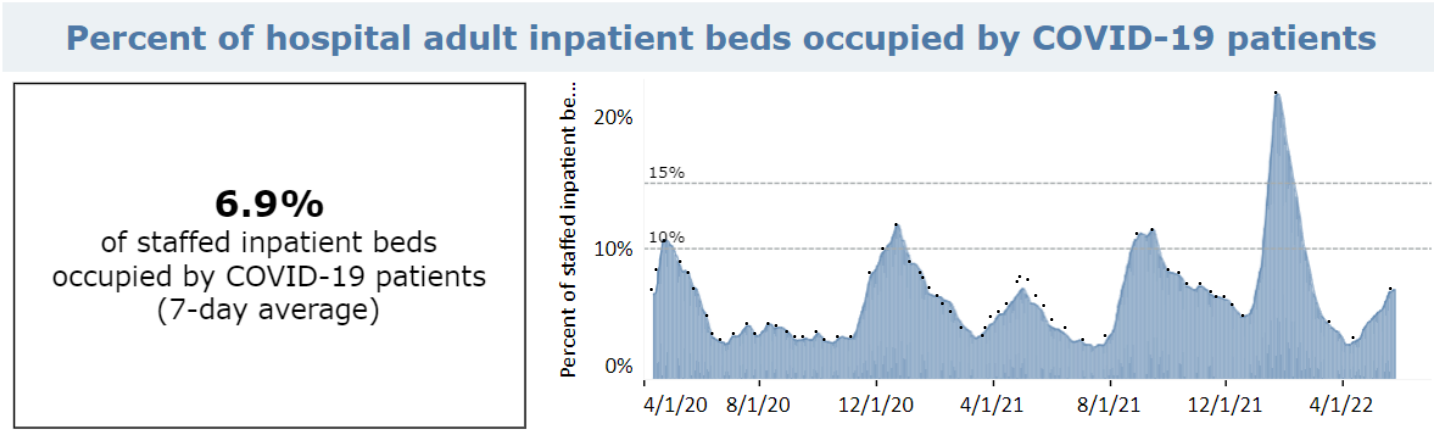

Image 8: Seattle & King County COVID-19 Inpatient bed Usage

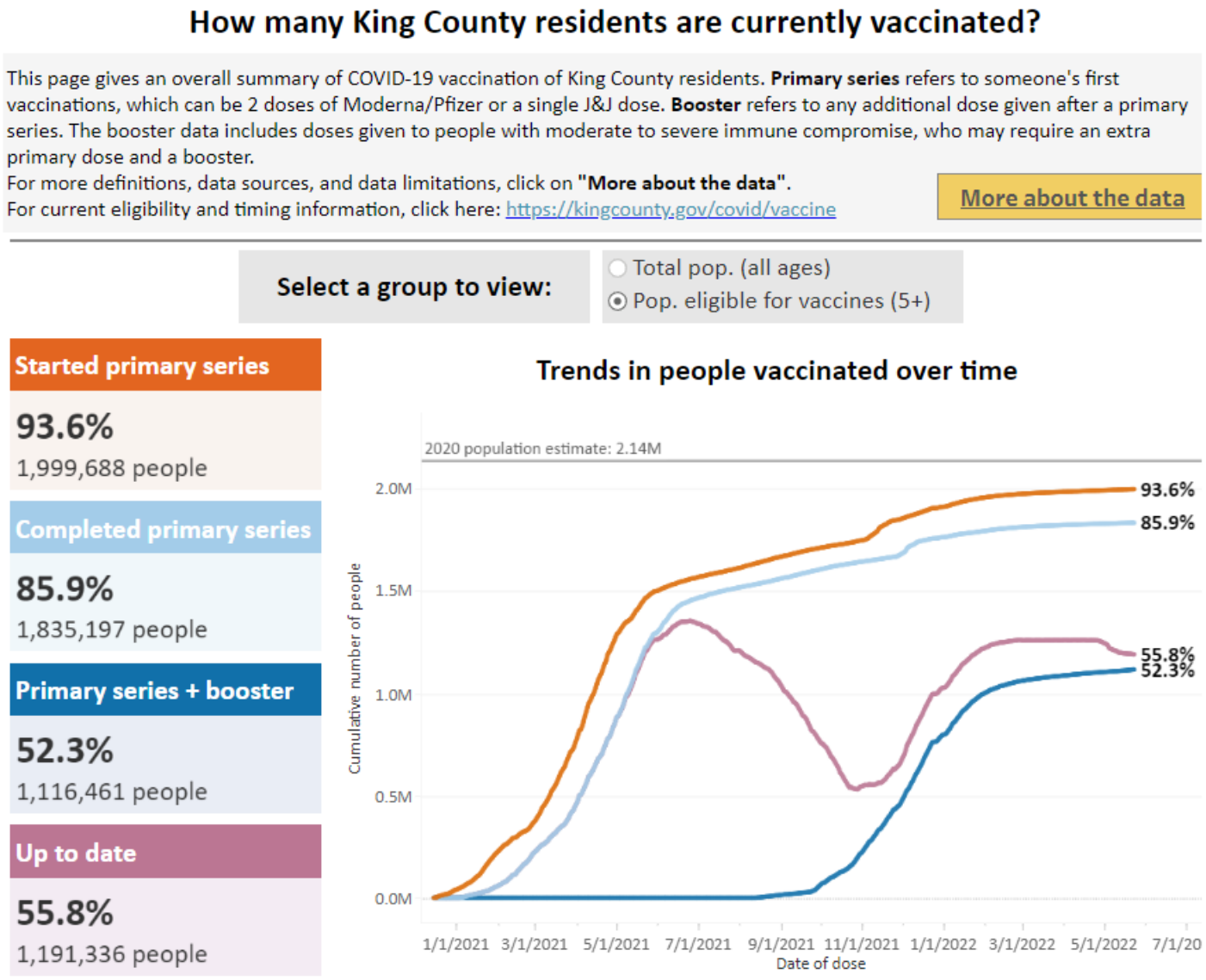

Image 10: Seattle & King County COVID-19 Vaccination Rates

NATIONAL COVID-19 PANDEMIC INCIDENT SUMMARY

Overview

In December 2019, health officials in Wuhan, a metropolitan city in the Hubei Province of the People's Republic of China, identified cases of an unknown viral pneumonia.[411] Symptoms manifested most commonly in the upper respiratory system and included fever, dry cough, and trouble breathing. As cases began to cluster, the World Health Organization (WHO) launched an investigation which confirmed the existence of a novel coronavirus now known as SARS-CoV-2. The virus causes a disease now known by the global community as COVID-19 (**Co**rona**vi**rus **D**isease – 20**19**). As China instituted public health measures to contain the virus, officials found evidence of communal spread in surrounding countries. On January 30, 2020, the WHO declared a Public Health Emergency of International Concern. Countries implemented travel restrictions, stay-at-home orders, and controlled screenings for the virus. By February 4, 2020, the U.S. would also declare a Public Health Emergency.[412] And, by March 11, 2020, the WHO would declare COVID-19 a pandemic; this would be preceded by the U.S. declaring COVID-19 a national emergency on March 13, 2020.

As of January 31, 2022, which is the considered the end of the operational period being recorded in this report, there were 394,108,167 confirmed cases of COVID-19 worldwide, with the highest numbers of confirmed cases in the United States, India, and Brazil.[413] COVID-19 presents several key challenges for responders across sectors, including an extended incubation period between infection and the development of symptoms, and asymptomatic carriers that may present no symptoms at all. The extended incubation period of the virus and lack of initial testing capability contributed to initial spread of the disease. By the fall of 2020, U.S. pharmaceutical companies and medical researchers were conducting clinical trials for potential COVID-19 vaccines. In December 2020, the U.S. Food and Drug Administration issued emergency use authorization for two COVID-19 vaccines (Pfizer-BioNTech and Moderna).[414]

Leaders in public health, public service, public safety, education, and other sectors continue to implement multidisciplinary approaches and ongoing collaborative strategies to address the virus. They often sacrifice their own health and safety to ensure the well-being of the public during the ongoing global pandemic.

[411] World Health Organization. *Timeline of WHO's Response to COVID-19.* Accessed July 30 2020. https://www.who.int/news-room/detail/29-06-2020-covidtimeline
[412] Federal Register. *Determination of Public Health Emergency*. Accessed June 15 2022. https://www.federalregister.gov/documents/2020/02/07/2020-02496/determination-of-public-health-emergency
[413] World Health Organization. *WHO Coronavirus (COVID-19) Dashboard.* Accessed June 15 2022. https://covid19.who.int/
[414] U.S. Food and Drug Administration. COVID-19 Vaccines. https://www.fda.gov/emergency-preparedness-and-response/coronavirus-disease-2019-covid-19/covid-19-vaccines

Initial Challenges in the United States

As of January 31, 2022, there were a total of 75,921,493 confirmed cases of COVID-19 in the United States. Of those cases, 900,931 deaths have occurred.[415] While at the time of writing (May 2022), transmission rates have decreased, the number of vaccinated and/or boosted adults continues to rise, and public health officials are generally beginning to consolidate COVID-19 response and recovery operations within steady-state operations to account for a new normal, there were many initial challenges when responding to COVID-19.

Initial challenges to responding to COVID-19 in the U.S. as a whole were synonymous with the initial challenges to responding to COVID-19 in Washington and PHSKC. As indicated in the State and Local Overview section of the report, the first U.S. COVID-19 case was confirmed in Washington on January 21, 2020 and the outbreak in the Life Care LTCF marked what was one of the first possible instances of U.S. community spread on February 28, 2020.[416]

Physical distancing was identified as one of the most effective tools to reduce the spread of COVID-19. Without public health interventions, the virus can spread easily and sustainably between people. Research points to the virus spreading primarily through respiratory droplets when an infected person coughs, sneezes, or talks. These droplets can reach up to 6 feet and aerosolized viral particles can remain suspended in the air for long periods of time, spreading the infection. People may also be infected with the virus but may not display any symptoms. These "asymptomatic carriers," without knowing they have the disease, may spread COVID-19 when in close contact with other people. [417] The White House initially introduced an effort to stop the spread in 15 days through a nationwide recommendation to implement social distancing.[418]

The nationwide recommendation of social distancing was not equivalent to mandatory public lockdowns or curfews, however. As such, many states, including Washington, as well as local jurisdictions implemented stricter stay-at-home orders focused on educating the public on physical distancing to reduce both the overall number of infections and the number of cases occurring at once. This concept, known as "flattening the epidemic curve," helped prevent hospitals from becoming overwhelmed.

Hospitals and healthcare facilities continue to serve on the frontlines of this global pandemic. Their employees work tirelessly during this unprecedented public health crisis to serve their communities, all while potentially exposing themselves to an invisible enemy. Their only protection against exposure is access to a supply of PPE, which includes face masks, face shields, medical gowns, and other protective gear. The increased demand for resources including PPE, ventilators, antiseptics, and cleaning supplies, by the healthcare system, first responders, and the general public, caused a worldwide shortage of supplies during initial response to COVID-19. This impact was especially felt in the United States. The PPE supplies in the Strategic National Stockpile

[415] World Health Organization. *WHO Coronavirus (COVID-19) Dashboard.* Accessed June 15 2022. https://covid19.who.int/
[416] Centers for Disease Control. *CDC Announces Additional COVID-19 Presumptive Positive Cases*. Accessed June 15 2022. https://www.cdc.gov/media/releases/2020/s0228-additional-COVID-19-cases.html
[417] Centers for Disease Control. *How to Protect Yourself and Others.* Accessed August 7 2021. https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention-H.pdf
[418] White House. *15 Days to Slow the Spread*. Accessed June 15 2022. https://trumpwhitehouse.archives.gov/articles/15-days-slow-spread/

were approximately 90% depleted by April 2020, after distributing equipment to state and local governments.[419] The United States experienced a shortage of ventilators in hospitals hardest hit by the disease in the early months of response. FEMA led the federal response for PPE requests, distributing N95 respirators, surgical masks, face shields, surgical gowns, and gloves to 53 states and territories. Additionally, the President of the United States used the Defense Production Act to boost the acquisition of N95 masks and the production of ventilators. Companies such as Ford Motor Company and General Motors also pivoted from their regular activities to manufacture critically needed resources including face shields and ventilators.[420]

State and local health departments also expanded efforts to increase contact tracing of COVID-19 cases. Contract tracing, a public health strategy to identify and isolate people exposed to an infection, is used to contain the spread of infectious disease. Internationally, countries such as China and South Korea were among the first to be impacted by the virus and benefitted from ramping up contact tracing efforts to contain its spread. In the United States, state governments dedicated significant amounts of staff and resources toward expanding contact tracing efforts, including partnerships with university centers and local health departments.

The United States also experienced challenges when expanding testing for COVID-19. The initial test the CDC provided to state and local health departments did not work correctly, forcing the CDC to send out new tests. State governors across the country reported a shortage of availability for COVID-19 test kits and the reagents needed for those kits to work. Through May of 2020, demand for COVID-19 tests would still far outpace the supply due to shortages of reagents, swabs, and various collection devices impacting test manufacturers and the U.S. getting a 'slow start' to COVID-19 testing due to only diagnostic test makers being initially allowed to develop COVID-19 tests (a policy that would later expand).[421] This lapse in testing early on in the pandemic enabled exponential growth of cases.

Many states experienced a resurgence of COVID-19 cases in the early summer months of 2020. While some states were able to make significant progress to bring down their case numbers from the summer surge, others continued to see high numbers of daily new cases into the fall of 2020. This presented an ongoing dilemma for economic relief initiatives. Public leaders were tasked with finding balance between economic recovery efforts and the social distancing strategies that reduce the risk of increasing COVID-19 spread. As the fall of 2020 continued, public health officials braced for the arrival of the COVID-19 vaccine, which would mark a pivotal shift in COVID-19 response and recovery activities.

Continued Response in the United States - Vaccination

Prior to the outbreak of the global pandemic, there was already ongoing research conducted on other coronaviruses, which allowed scientists all over the world to work together and develop a vaccine within the

[419] Department of Health and Human Services. Public Health Emergency. Accessed August 5, 2020. https://www.phe.gov/emergency/events/COVID19/SNS/Pages/FAQ.aspx#sns-depleted

[420] Ford Motor Company. Personal Protection Equipment Product Information. http://corporate.ford.com/social-impact/coronavirus/ppe.html

General Motors. General Motors Commitment. https://www.gm.com/our-stories/commitment/face-masks-covid-production.html

[421] Modern Healthcare. *COVID-19 Testing Problems Started Early, U.S. Still Playing from Behind*. Accessed June 15, 2022. https://www.modernhealthcare.com/technology/covid-19-testing-problems-started-early-us-still-playing-behind

span of a year.[422] To reach the point at which vaccinations could be safely distributed in the U.S., the vaccines needed to undergo three phases of clinical trials that followed rigorous guidelines set by the Food and Drug Administration (FDA). The vaccine studies were rapidly completed due to many individuals volunteering to participate as well as the partnerships between Operation Warp Speed (OWS) and other organizations, such as the CDC.

One of the most significant cornerstones in the United States' response to COVID-19 was the development, authorization, and deployment of COVID-19 vaccines. The clinical trial data released in November of 2020 showed that Pfizer's and Moderna's COVID-19 vaccines were 95% and 94.5% effective at preventing COVID-19 disease, respectively.[423] Following the release of the clinical trial data in November of 2020, the Advisory Committee on Immunization Practices (ACIP) issued interim recommendations in early December to federal, state, and local jurisdictions advising them that demand would exceed COVID-19 vaccine supply during the initial vaccination rollout, and therefore healthcare personnel and residents of long-term care facilities should be offered the vaccine in the initial Phase 1a of vaccination.[424] While not binding, most states generally followed this guidance for the recommendations that they provided relating to Phase 1a of vaccination.

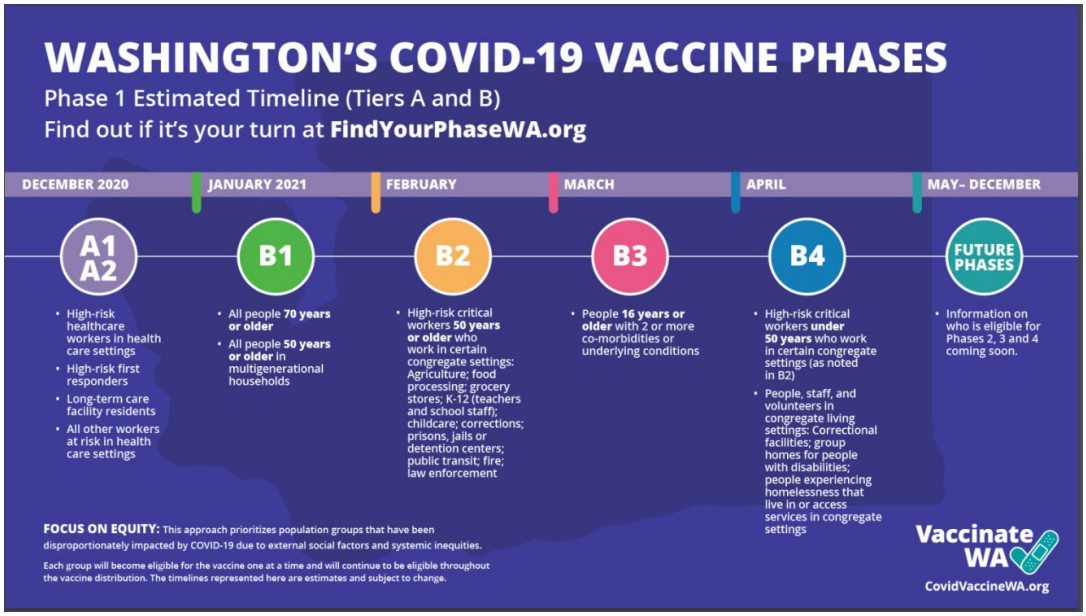

Image 11: Washington's COVID-19 Phases (https://doh.wa.gov/sites/default/files/legacy/Documents/1600/coronavirus//VaccinationPhasesInfographic.pdf)

[422] Medical News Today. *How did we develop a COVID-19 vaccine so quickly?*. Accessed June 17, 2021. https://www.medicalnewstoday.com/articles/how-did-we-develop-a-covid-19-vaccine-so-quickly
[423] Pfizer, *Pfizer and BioNTech Conclude Phase 3 Study of COVID-19 Vaccine Candidate, Meeting All Primary Efficacy Endpoints*. https://www.pfizer.com/news/press-release/press-release-detail/pfizer-and-biontech-conclude-phase-3-study-covid-19-vaccine.
[424] Moderna, *Moderna's COVID-19 Vaccine Candidate Meets its Primary Efficacy Endpoint in the First Interim Analysis of the Phase 3 Cove Study*. https://investors.modernatx.com/news/news-details/2020/Modernas-COVID-19-Vaccine-Candidate-Meets-its-Primary-Efficacy-Endpoint-in-the-First-Interim-Analysis-of-the-Phase-3-COVE-Study-11-16-2020/default.aspx./.

The FDA issued an Emergency Use Authorization (EUA) for the Pfizer vaccine on December 11, 2020, the Moderna vaccine on December 18, 2020, and the Janssen vaccine on February 27, 2021.[425] By December 14, 2020, shortly after Pfizer's EUA, the first American outside of a clinical trial had received a COVID-19 vaccine.[426] Subsequently, on December 22, 2020,[427] additional phases of vaccination outlined by the ACIP including Phase 1b for frontline essential workers and individuals 75 years or older, and Phase 1c for individuals 65 to 74 years or older or those 16 to 64 years with high-risk conditions, and essential workers not in Phase 1b. States and counties across the country, however, took different approaches to vaccination based on the vaccination plans that they had developed.

Extensive challenges managing the vaccination tiers and the associated distribution of the vaccine emerged in Washington and throughout the country. As demand for the vaccine exceeded supply well into the spring of 2021 and guidance from both federal and state authorities was constantly changing, county health officials had to rapidly pivot and decide whether to adopt new recommendations or pursue their original vaccination plans. Subsequently, the public expressed frustration as not only were they also impacted by the changing guidance relating to vaccination tiers, but they also faced challenges registering for vaccines and getting appointments.[428] Washington specifically took a measured approach to expanding vaccine eligibility as the state sought to ensure that risk and equity remained at the forefront of its rollout and leaders publicly disagreed on the balance between equitable distribution and expanding eligibility.[429]

Amidst continued struggles with vaccination, individuals across the country continued to be infected with COVID-19. Though both daily case counts and hospitalizations generally declined from February 2021 to mid-July of 2021, health officials continued to balance testing operations, contact tracing, updating guidance relating to isolation, quarantine, and masking, communicating with healthcare facilities, schools, community-based organizations, and other partners, and vaccination. Vaccination efforts included both the actual act of coordinating and administering vaccinations as well as developing public messaging to communicate the importance of being vaccinated against COVID-19. Developing communications strategies and addressing access and hesitancy barriers to vaccination became a larger challenge once supply of the vaccine exceeded the demand for it in late April and early May of 2021. The EUA of the Pfizer vaccine that allowed it to be

[425] Food and Drug Administration, *FDA Takes Key Action in Fight Against COVID-19 By Issuing Emergency Use Authorization for First COVID-19 Vaccine*. https://www.fda.gov/news-events/press-announcements/fda-takes-key-action-fight-against-covid-19-issuing-emergency-use-authorization-first-covid-19.
[426] The Washington Post, *First Coronavirus Vaccine Shots Given Outside Trial in U.S.* https://www.washingtonpost.com/nation/2020/12/14/first-covid-vaccines-new-york/.
[427] Centers for Disease Control and Prevention, *The Advisory Committee on Immunization Practices' Updated Interim Recommendation for Allocation of COVID-19 Vaccine – United States 2020.* https://www.cdc.gov/mmwr/volumes/69/wr/mm695152e2.htm.
[428] AARP, *How to Navigate the Confusing COVID-19 Vaccine Rollout*. https://www.aarp.org/health/conditions-treatments/info-2021/vaccine-distribution.html
[429] Seattle Times. *Why Washington's Rollout of COVID-19 Vaccine Eligibility Has Been Slower Than in Some Other States*. https://www.seattletimes.com/seattle-news/health/why-washingtons-rollout-of-covid-vaccine-eligibility-has-been-slower-than-other-states/

administered for adolescents who are between 12 and 15 years old on May 10, 2021 did provide an additional boost and demand, and also contributed to rising vaccination rates across the United States.[430]

Though the development of vaccines and declining case counts, hospitalizations, and fatalities gave hope to a "return to normal," the Delta variant was declared a variant of concern by the CDC on June 16, 2021.[431] By August 3, 2021, it was estimated to account for approximately 93% of cases in the United States during the last two weeks of July.[432] The Delta variant brought challenges to healthcare and public health officials across the United States as it is highly transmissible and led to an overwhelming increase in hospitalizations in many states, particularly those with a high percentage of unvaccinated individuals. In response, the CDC updated its masking guidance, including for fully vaccinated individuals, on July 27, 2021 as breakthrough infections were emerging.[433] And though data at the time suggested that two doses of the COVID-19 vaccines were generally effective in preventing the Delta variant, the CDC authorized an additional COVID-19 vaccine dose for immunocompromised individuals on August 12, 2021.[434] As a result of expanding eligibility and studies finding a declining efficacy in vaccinations six months post-second dose, there continued to be changes to vaccination guidance with booster shots for those 65 years and older or those 18 years and older who have underlying medical conditions or are frontline workers then being authorized on October 21, 2021.[435]

The FDA also authorized the Pfizer vaccine for children between 5 and 11 years old on October 29, 2021 and later expanded booster eligibility to all individuals 18 years and older on in November 2021.[436] Additionally, in November 2021, pediatric COVID-19 vaccines, specifically the Pfizer vaccine, were recommended for children ages 5 to 11 years old. An increase in COVID-19 cases during the fourth wave of infection in the United States was fueled by the Delta variant and generally peaked in mid-September of 2021.

After declining daily COVID-19 case counts following the Delta variant's peak, public health officials would then be impacted by its greatest challenge yet, the Omicron variant. The Omicron variant, which was designated as a variant of concern by the World Health Organization (WHO) on November 26, 2021, brought unprecedented case numbers, hospitalizations, and deaths across the United States, particularly between December and February 2022. The Omicron variant multiplies around 70 times faster than the Delta variant

[430] Food and Drug Administration, *FDA Authorizes Pfizer-BioNTech COVID-19 Vaccine for Emergency Use in Adolescents in Another Important Action in Fight Against Pandemic*, https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-pfizer-biontech-covid-19-vaccine-emergency-use.
[431] WebMD, *Delta Variant from India a "Variant of Concern."* https://www.webmd.com/lung/news/20210616/delta-variant-of-concern
[432] Centers for Disease Control and Prevention, *COVID-19 Data Tracker*. https://covid.cdc.gov/covid-data-tracker/#variant-proportions
[433] CNN, *CDC Changes Mask Guidance in Response to Threat of Delta Variant of COVID-19*. https://www.cnn.com/2021/07/27/politics/cdc-mask-guidance/index.html.
[434] Food and Drug Administration, *FDA Authorizes Additional Doses for Certain Immunocompromised Individuals*. https://www.fda.gov/news-events/press-announcements/coronavirus-covid-19-update-fda-authorizes-additional-vaccine-dose-certain-immunocompromised.
[435] Centers for Disease Control, *CDC Expands Eligibility for COVID-19 Booster Shots*. https://www.cdc.gov/media/releases/2021/p1021-covid-booster.html.
[436] Food and Drug Administration, *FDA Authorizes Pfizer-BioNTech COVID-19 Vaccine for Emergency Use in Children 5 Through 11 Years of Age*. https://www.fda.gov/news-events/press-announcements/fda-authorizes-pfizer-biontech-covid-19-vaccine-emergency-use-children-5-through-11-years-age.

but has been found to be less severe in terms of symptoms. A peak of 807,897 new daily COVID-19 cases in the U.S. was recorded on January 22, 2022. The emergence of the Omicron variant caused public health officials to encounter many of the challenges they experienced during initial COVID-19 response in early 2020 as well as some experienced during the Delta variant, including COVID-19 testing demand that exceeded supply and an influx of hospitalizations. These challenges were only exacerbated by an exhausted public health workforce as well as a public that was resistant to ongoing restrictions. At time of writing (May 2022), the 7-day moving average of daily new cases was 84,778 and nearly 100% of the lineages of cases continue to be Omicron or its sub lineages (B.1.1.529, BA.1, BA.2, BA.3, BA.4, and BA.5), though new daily COVID-19 case counts have stabilized at a level far lower than the peak in mid-January.

Inequity in the Context of national COVID-19 response

The COVID-19 pandemic spotlighted and exacerbated health inequities that were already present in the U.S. As described throughout the report, PHSKC, its partners, and the broader State of Washington took steps to mitigate the impacts of COVID-19 on individuals and communities disproportionately impacted by COVID-19, as attributable to structural racism and social and economic vulnerabilities, to varying levels of success. On a broader scale, however, the COVID-19 response as well as COVID-19 outcomes paint a harsh picture of how health inequity contributed to significant racial and ethnic disparities in COVID-19 cases, hospitalizations, and deaths across the U.S.

Though this report covers an operational period ending January 31, 2022, data available at time of writing (June 2022) from the CDC[437] emphasizes stark differences between risks of COVID-19 infection, hospitalization, and death by race/ethnicity in the U.S. These trends have been evident since public health officials have been able to classify COVID-19 surveillance, hospitalization, and mortality data on race and ethnicity in spring 2020. Particularly, the American Indian or Alaska Native, Black, and Hispanic communities in the U.S. have experienced a disproportionate burden of COVID-19 cases, hospitalizations, and deaths as compared to White and Asian people. Data outlined in the table below has been adjusted for age to account for age distribution differing by racial or ethnic group.

[437] CDC. *Risk for COVID-19 Infection, Hospitalization, and Death By Race/Ethnicity*. Access June 15, 2022. https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html

Table 8: COVID-19 Rate Ratios by Ethnicity

COVID-19 Rate Ratios Compared to People who are White, Non-Hispanic	American Indian or Alaska Native	Asian	Black	Hispanic
Cases	1.6X	0.7X	1.1X	1.5X
Hospitalization	3.0X	0.8X	2.3X	2.2X
Death	2.1X	0.8X	1.7X	1.8X

While these numbers show quantifiable outcomes in terms of cases, hospitalization, and death across racial and ethnic groups, public health officials across the U.S. have identified both quantitative and qualitative factors that have contributed to this disparity. Social determinants of health and the impacts on these due to historical and institutionalized discrimination have all contributed to people of color being disproportionately impacted by COVID-19. For instance:

- Chronic Medical Conditions: Factors contributing to inadequate access to or unequal medical care for racial and ethnic minorities can be linked to these populations facing higher numbers of chronic medical comorbidities[438] which have been associated with poorer outcomes among those infected with COVID-19.

- Workplace factors: Racial and ethnic minorities disproportionately work in settings that are considered essential, such as factories, grocery stores, public transportation, and healthcare facilities. Particularly during initial COVID-19 response, this contributed to disproportions in exposure to the public as an 'essential worker.' For example, 16,233 workers in meat and poultry processing in the U.S. were infected with COVID-19 from April to May 2020, and 87% of the infected workers were racial and ethnic minorities.[439]

- Location and Residence: Racial and ethnic minorities have been found to be more likely to live in multi-generational homes[440] as well as in crowded cities.[441] Facing more crowded living conditions impacts COVID-19 prevention strategies such as isolation and quarantine and increases the chance of exposure particularly when living with an essential worker or frequently utilizing public transportation.

[438] American College of Cardiology. *Racial Disparities in Hypertension Prevalence and Management: A Crisis Control*? Accessed June 16, 2022. https://www.acc.org/latest-in-cardiology/articles/2020/04/06/08/53/racial-disparities-in-hypertension-prevalence-and-management
[439] CDC. *Increased Risk Factors for Exposure*. Accessed June 15, 2022. https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/racial-ethnic-disparities/increased-risk-exposure.html
[440] Pew Research. *A Record of 64 Million Americans Live in Multigenerational Households*. Accessed June 16, 2022. https://www.pewresearch.org/fact-tank/2018/04/05/a-record-64-million-americans-live-in-multigenerational-households/.
[441] Brookings. *2020 Census: Big Cities Grew and Became More Diverse*. Accessed June 16, 2022. https://www.brookings.edu/research/2020-census-big-cities-grew-and-became-more-diverse-especially-among-their-youth/.

- Incarceration: People living in incarceration experienced higher likelihoods of being exposed to COVID-19, lack of access to testing, vaccinations, and healthcare. Congregate living spaces and lack of quality care contributed to higher COVID-19 case rates and outbreaks of disease.

- Access to healthcare: Despite some progress being made from previous years, a February 2022 report by HHS demonstrates that disparities in the unsured rate and the affordability of healthcare between Black and White Americans persists.[442] A June 2020 report also showed higher unemployment rates for Black and Latino individuals than White and Asian individuals, a troubling trend considering that approximately half of the U.S. population receives employment-based health insurance .[443] The combination of these factors contributed to a scenario where racial and ethnic minority populations were more likely to initiate care later in the course of COVID-19 illness, correlating with poorer outcomes.[444]

- Barriers to Testing: In some of the largest segregated cities in the U.S. such as Chicago, New York City, Houston, and Los Angeles, neighborhoods that house a greater percentage of racial and ethnic minorities were found to have fewer COVID-19 testing sites.[445]

- Distrust of Healthcare Systems and Government: There is a long history of racism and mistreatment by medical professionals toward minorities that has manifested in both known instances such as the Tuskegee Syphilis Study[446] as well sentiment through polls that suggest inequitable health care treatment from health care providers.[447] This distrust initially fueled vaccine hesitancy[448] but disparities between vaccination rates or Black, Hispanic, and White people have since narrowed.[449]

The pandemic also spotlighted and exacerbated social and economic inequities that were already present in the U.S. A report from the Poor People's Campaign showed that people residing in poorer counties died from COVID-19 at a rate twice that of people living in richer counties, and that during the deadliest phases of the

[442] HHS. *New HHS Report Highlights 40 Percent Decline in Uninsured Rate Among Black Americans Since Implementation of the Affordable Care Act*. Accessed June 15, 2022. https://www.hhs.gov/about/news/2022/02/23/new-hhs-report-highlights-40-percent-decline-in-uninsured-rate-among-black-americans-since-implementation-affordable-care-act.html
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[444] Jama Network. *Racial and Ethnic Health Disparities Related to COVID-19*. Accessed June 16, 2022. https://jamanetwork.com/journals/jama/fullarticle/2775687
[445] American Journal of Public Health. *Racial/Ethnic Segregation and Access to COVID-19 Testing: Spatial Distribution of COVID-19 Testing Sites in the Four Largest Segregated Cities in the United States.* Accessed June 16, 2022. https://ajph.aphapublications.org/doi/10.2105/AJPH.2021.306558
[446] CDC. *The Tuskegee Timeline*. Accessed June 16, 2022. https://www.cdc.gov/tuskegee/timeline.htm
[447] Andscape. *New Poll Shows Black Americans Put Far Less Trust in Doctors and Hospitals Than White People*. Accessed June 16, 2022. https://andscape.com/features/new-poll-shows-black-americans-put-far-less-trust-in-doctors-and-hospitals-than-white-people/
[448] Stanford Medicine. *How Misinformation, Medical Mistrust Fuel Vaccine Hesitancy*. Accessed June 16, 2020. https://med.stanford.edu/news/all-news/2021/09/infodemic-covid-19.html
[449] KFF. *Latest Data on COVID-19 Vaccinations By Race/Ethnicity*. Accessed June 16, 2022. https://www.kff.org/coronavirus-covid-19/issue-brief/latest-data-on-covid-19-vaccinations-by-race-ethnicity/

pandemic, this disparity in death rate widened even more.450 Speaking to the intersectionality between racial identify and class, the report acknowledges that "if poverty were experienced equally by each racial group, it would be expected that poorest counties [that experienced disparities in COVID-19 death rates compared to wealthier counties] would be made up of approximately 10% of each racial group. However, these poorest counties are home to nearly 27% of all Indigenous people in the US, and 15% of all Black people, 13% of all Hispanic people, 9% of all white people, and 2% of all Asian people."

Another community disproportionately impacted by COVID-19 includes people with disabilities. Some challenges that people with disabilities have faced include lack of access to food deliveries, COVID-19 testing, and the internet, lack of accessible messaging (i.e., guidance in American Sign Language), postponement and cancellation of medical treatment and rehabilitation, unsafe conditions in health facilities and congregate living, closures of in-person learning limiting access to learning, etc.[451] Results of such challenges include but are not limited to adults with physical disabilities being overrepresented in terms of COVID-19-related hospitalizations, adults with existing mental health disorders experiencing substantial pandemic-related changes in eating and sleeping, loss of community mobility and participation for adults with autism spectrum disorder, and individuals who are deaf, hard of hearing, or Deaf-blind experiencing communications barriers, particularly if working remotely.[452] The impacts of COVID-19 on people with disabilities cannot be underscored, and the Biden Administration announced steps being undertaken to address the needs of individuals with disabilities in the face of COVID-19 impacts in February 2022. [453]

It is undeniable that the COVID-19 pandemic has highlighted health inequities across the U.S., amongst different racial and ethnic minorities, income levels, and abilities. And while the outcomes described above serve as a display of how these inequities can glaringly manifest in the context of a global pandemic, they have forced policy makers, health care officials, and public health officials across the U.S. to confront what have been longstanding disparities that are ultimately rooted in racism and discrimination. As such, we acknowledge a few steps that have been taken on a nationwide basis in an attempt to address health disparities:

- In April 2021, CDC recognized racism as a threat to the public's health and "noted it would lead in efforts to confront systems and policies that have resulted in the generational injustice that has given rise to racial and ethnic health inequities.[454]

[450]A Poor People's Campaign. *A Poor People's Pandemic Report: Mapping the Intersections of Poverty, Race, and COVID-19*. Accessed June 16, 2022. https://www.poorpeoplescampaign.org/wp-content/uploads/2022/04/ExecutiveSummary_7.pdf
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[452] Administration for Community Living. *COVID-19 Response.* Accessed June 16, 2022. https://acl.gov/sites/default/files/COVID19/ACL_Research_ImpactC19-PWD.pdf
[453] The White House. *Administration Announces New Actions to Address the Needs of People with Disabilities and Older Adults in Response to and Recovery from COVID-19.* Accessed June 16, 2022. https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/24/fact-sheet-administration-announces-new-actions-to-address-the-needs-of-people-with-disabilities-and-older-adults-in-response-to-and-recovery-from-covid-19/
[454] KFF. *Disparities in Health and Health Care: 5 Key Questions and Answers*. Accessed May 11, 2021. https://www.kff.org/racial-equity-and-health-policy/issue-brief/disparities-in-health-and-health-care-5-key-question-and-answers/

- In March 2021, the National Institute of Health (NIH) launched an effort called UNITE in order to address structural racism in biomedical research.[455]
- An Executive Order was issued in January 2021 to convene a COVID-19 Health Equity Task Force within HHS. [456]
- The American Rescue Plan Act reserved $10 billion in funds to trickle down to SLTT public health departments for the establishment of community vaccination centers and mobile vaccination units for populations hardest-hit and highest-risk for COVID-19.[457] This included investing in Community Health Centers specifically to expand COVID-19 testing, vaccination, and treatment access.

In addition to actions taken at the federal level, some state, local, tribal, and territorial public health programs have found success working in partnerships with community-based organizations, private organizations, and health care providers to address inequities that have manifested during COVID-19 response and recovery. Actions taken have included steps such as using CARES Act funds to provide transportation, home-delivered food, medications, COVID-19 supplies, and financial relief, training community health workers, launching campaigns to address inequities through culturally appropriate exposure notifications and increased testing capacity, engaging historically marginalized communities in building vaccination plans, convening task forces on equity to support ongoing COVID-19 response, and more.[458] With equity not bearing a significant public role in federal COVID-19 response until January 2021, multiple state and local agencies can be applauded for developing innovative policies to address emerging needs and trends.

In sum, COVID-19 brings substantial lessons learned for health policy makers at multiple levels of government on how social determinants of health can profoundly contribute to inequities in infectious disease-related morbidity and mortality.

[455] NIH. *Ending Structural Racism*. Accessed June 16, 2022. https://www.nih.gov/ending-structural-racism/unite
[456] The White House. *Executive Order on Ensuring an Equitable Pandemic Response and Recovery*. Accessed June 16, 2022. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/21/executive-order-ensuring-an-equitable-pandemic-response-and-recovery/
[457] KFF. *What's In the American Rescue Plan for COVID-19 Vaccine and Other Public Health Efforts*. Accessed June 16, 2022. https://www.kff.org/policy-watch/whats-in-the-american-rescue-plan-for-covid-19-vaccine-and-other-public-health-efforts/
[458] Health Affairs. *Pandemic-Driven Health Policies To Address Social Needs and Health Equity.* Accessed June 16, 2022. https://www.healthaffairs.org/do/10.1377/hpb20220210.360906/

LOCAL AND STATE TIMELINE

Table 9: Local and State Timeline

JURISDICTIONAL LEVEL	DATE	MILESTONES
International and Federal	Dec. 2019 – Jan. 2020	CDC issues an official Health Advisory to state and local health departments and providers regarding international 'viral pneumonia' with first cases noted in Wuhan, People's Republic of China. First epidemiological alert issued on novel coronavirus with recommendations covering international travelers, infection prevention and control measures and laboratory testing.
Federal	1/21/20	CDC confirms first US COVID-19 case in the state of Washington.
Local	1/21/20	PHSKC activates the HMAC at Level 2 - Enhanced Operations (Partial HMAC Activation).
State	1/22/20	The State of Washington activates its SEOC.
Local	1/24/20	PHSKC elevates its HMAC to Level 1 - Full HMAC Activation.
Local	1/31/20	CDC funnels flights from China to select US airports including SeaTac and for enhanced screening of traveler's potential quarantine by local public health jurisdictions including PHSKC
State	1/26/20	CDC has the only lab in the country that can test samples and is overwhelmed. WA State PH lab develops capability and begins testing COVID-19 samples
Local	2/7/20	PHSKC launches new resources to help address stigma and discrimination that can be exacerbated during global outbreaks.
Local	2/27/20	First positive case of COVID-19 recorded in King County
Local	2/28/20	First COVID-19 case identified at Lifecare, Long Term Care Facility
Local	2/29/20	King County Emergency Operations Center (EOC) activated at Enhanced Level
State	2/29/20	Washington State declares COVID-19 State of Emergency.

JURISDICTIONAL LEVEL	DATE	MILESTONES
		Governor Inslee directs all state agencies to use resources necessary to prepare and respond to the crisis
Local	3/1/20	Proclamation of Emergency is signed in King County, enabling "extraordinary measures" to fight the COVID-19 outbreak including waiving procurement protocols, authorizing overtime for employees, and purchasing an area motel to isolate and quarantine patients.
Local	3/3/20	King County opens Novel Coronavirus Call Center, activated and staffed by PHSKC
Local	3/4/20	Large employers in area (Microsoft and Amazon) mandate telecommuting
Local	3/9/20	All area colleges move to online courses through September 2021
Local	3/11/20	State and Local Health Officer limits large gatherings to less than 250
State	3/16/20	Statewide proclamation limiting and Local Health Officer orders gatherings to less than 50 people; state and local prohibition of onsite consumption of food or beverages until phased reopening completed in May 2020
State	3/17/20	K-12 schools closed statewide for in person learning
Federal	3/18/20	Families First Coronavirus Response Act signed into law, provides paid sick leave, tax credits, and free COVID-19 testing; expands food assistance and unemployment benefits; and increases Medicaid funding.
State	3/18/20	Ratepayer Assistance and Preservation of Essential Services proclamation ensures that energy, electric, telecommunications, and water utilities cannot disconnect or refuse to reconnect services
State	3/18/20	Family Emergency Assistance Program/FEAP provides Disaster Cash Assistance through July 2020 and expands this order to include individuals without children
Local	3/19/20	First COVID-19 testing site opens for first responders in King County

JURISDICTIONAL LEVEL	DATE	MILESTONES
Local	3/20/20	Kent Isolation and Quarantine site opens
State	3/23/20	Governor Inslee announced a "Stay Home, Stay Healthy" order, implementing mandatory telecommuting for all employees who are not First Responders or Mission-Critical.
State	3/24/20	State proclamation that expands telehealth services, testing coverage to include provider visits for all respiratory illness and drive-up testing without copays
Local	3/25/20	King County launches Stand Together, Stay Apart campaign
Local	3/25/20	PHSKC launches public data dashboards with daily updates of local COVID-19 cases and deaths
State	3/25/20	Stay Home, Stay Healthy Order through 4 May 2020 bans all gatherings for social, spiritual, recreational activities and all businesses except essential.
Federal	3/27/20	Coronavirus Aid, Relief, and Economic Security Act (CARES, Act) signed into law, including one-time cash payments. Increased unemployment benefits, creation of the Paycheck Protection Program, additional funding for state and local governments.
Local	3/27/20	CDC issues COVID-19 prevention guidance in Morbidity and Mortality Weekly Report for Long Term Care (LTC) Facilities based off Public Health - Seattle & King County findings and transparency with their first LTC outbreak.
Local	3/27/20	Aurora Isolation and Quarantine site opens
Local	3/29/20	Issaquah Isolation and Quarantine site opens
Federal	3/30/20	Stay at home guidelines are extended by President Trump until April 30.
Local	4/1/20	PHSKC/HMAC Community Well-Being Group support begins to focus on behavior health impacts of the outbreak.
Local	4/2/20	King County announces plan to reduce capacity at shelters by moving nearly 400 people to hotel rooms

JURISDICTIONAL LEVEL	DATE	MILESTONES
Local	4/10/20	PHSKC starts releasing preliminary data of COVID-19 cases by race/ethnicity
Local	4/28/20	COVID-19 public education campaign videos have been released in 24 languages
Local	5/18/20	King County directive to wear face coverings while in public goes into effect
Local	6/2/20	Phase 1 Safe Start - Stay Healthy King County Reopening - allows limited operation of restaurants, retail and personal services
State	6/5/20	Statewide implementation of "Washington Listens," an emotional health support program to reach those most affected by the stress of the outbreak. $2.2 million designated for this program with a call center and 120 counselors or team leaders available for support. $2M grant also issued for support to those with substance abuse and mental health disorders
Federal	6/10/20	There are 2 million confirmed cases of COVID-19 in the US.
Local	6/10/20	New free testing sites open in south King County bringing the total number of free testing sites in south Seattle and south King County to 10, with 18 free testing sites overall in King County.
Local	6/11/20	King County declared racism a public health crisis, recognizing that racism is an underlying root cause of the disproportionate impacts of the COVID-19 pandemic on communities of color, and committing to implementing a racially equitable response to this crisis, centering on community.
Local	6/19/20	Phase 2 Safe Start - Stay Healthy King County Reopening - allows gatherings of 5 or fewer people and allows restaurants, retailers and other businesses to reopen.
State	6/26/20	Secretary of Health mandates face coverings through 3/11/2022 for all people above the age of 2 or with a medical condition that prohibits the use of the mask.
Local	7/3/20	Safe Start for Taverns and Restaurants (SSTAR) program

JURISDICTIONAL LEVEL	DATE	MILESTONES
		begins educational outreach and enforcement of Safe Start requirements for operating restaurants, bars, and taverns.
State	7/9/20	State expands eligibility of the Family Emergency Assistance Program through 6/30/2021
Federal	8/24/20	The CDC restricts its testing recommendations to only symptomatic individuals who have been exposed to the virus.
Local	8/31/20	Two new free drive-thru COVID-19 test sites announced in Renton and Auburn
Local	9/1/20	Individual Eviction and Rental Assistance granted through December 2020
Local	10/6/20	Tukwila testing site open
Local	10/13/20	Federal Way test site opens
State	11/16/20	State rolls back its phased reopening plan until 1/22/2021 to slow the spread of rapidly increasing COVID-19 cases, hospitalizations and deaths before health systems become overloaded
Local	11/20/20	Test site opens at Highline College to expand testing capacity in south King County as case numbers increase
Federal	12/2/20	CDC announces that those who have been exposed to someone with COVID-19 can quarantine for ten days without a COVID-19 test if they have no symptoms or seven days if they have no symptoms and a negative test result.
Local	12/10/20	Test site opens in Enumclaw to expand testing access in southeast King County
State	12/11/20	State issues first vaccine through tiered approach for high-risk health care workers; high risk first responders and long-term care facility residents
Local	12/15/20	Bellevue College test site opens, bringing the first free high-volume test site to King County's Eastside.

JURISDICTIONAL LEVEL	DATE	MILESTONES
Local	12/18/20	King County begins vaccinating high-risk workers in health care settings, patients and staff of long-term care facilities, and high risk first responders (EMTs, paramedics, and fire fighters)
Local	1/1/2021	In collaboration with PHSKC and dozens of local hospitals, many hundreds of EMS personnel staffed mass vaccination sites and mobile vaccination vehicles.
State	1/11/21	State declares "Healthy Washington - Roadmap to Recovery" that outlines recovery plan and metrics that will be monitored in each region to transition phases
Federal	1/21/21	The Biden administration publishes its national COVID-19 response strategy. It Includes a data-driven response to the pandemic and expanded access to care and treatment; policy directives on the domestic goal of 100 million vaccinations in 100 days and strengthening the global response;
State	1/28/21	State expands vaccine eligibility to all individuals 65 and older
Federal	1/30/21	Required mask mandate for travelers into, within, and out of the United States on airplanes, ships, ferries, trains, subways, buses, taxis, and ride shares.
Local	2/1/21	Two mass vaccination sites for COVID-19 opened in South King County
Local	3/2/21	500,000 vaccines administered in King County
State	3/2/21	State expands eligibility for vaccine to educator and care givers
Federal	3/11/21	American Rescue Plan Act signed into law. Among other actions, the law provides a boost to unemployment benefits through September; expands the child tax credit, rental payment assistance, and funds for COVID-19 vaccine distribution and testing; and directs money to state, local, and tribal governments and to schools.
Local	3/11/21	First cases of unique and highly transmissible COVID-19 variants (United Kingdom and South African variants)

JURISDICTIONAL LEVEL	DATE	MILESTONES
		detected in King County
Federal	3/18/21	White House declares COVID-19 outbreak a National Emergency
State	3/22/21	Governor Inslee announces that the state will enter phase 3 in a county-by-county evaluation process versus a regional decision. He lifts ban on in person spectators for professional and high school sports
Local	4/7/21	1 million vaccines administered in King County
Federal	4/15/21	The Pfizer-BioNTech COVID-19 vaccine is authorized for age 16+ and Moderna and J&J COVID-19 vaccines are authorized for age 18+.
Local	4/26/21	Public Health - Seattle & King County releases COVID-19 principles for equitable vaccine delivery
Federal	4/28/21	CDC releases assessment that states that "fully vaccinated adults 65 years and older were 94% less likely to be hospitalized with COVID-19 than people of the same age who were not vaccinated."
Local	5/13/21	Vaccines are available for ages 12+ in King County
Local	6/30/21	King County eases COVID-19 restrictions to prepare for reopening of Washington State (Vaccinated people have the option to go maskless indoors)
State	7/1/21	State proclaims through "Washington Ready" that face covering, movement and occupancy restrictions can be modified through 8/13/2021
Local	7/24/21	The delta variant accounts for 56% of positive cases sequenced in King County.
State	8/9/21	State requires Vaccine for employees in all higher education institutions, most childcare, early learning providers, K-12 educators, school staff, coaches, bus drivers, school volunteers and any others working in school facilities as a condition of employment. Effort is ongoing.
State	8/23/21	Statewide Mask Mandate expanded to include vaccinated

JURISDICTIONAL LEVEL	DATE	MILESTONES
		individuals in indoor settings through 3/11/2022
Local	9/8/21	COVID-19 -19 Case Investigation and Contact Tracing transitioned from PHSKC to Washington Department of Health
Local	9/16/21	Vaccination Verification Order ensuring that all patrons 12 years and older are required to have proof of vaccination to attend all indoor events with a capacity of 12 people or more and all outdoor events with 500 or more people
State	9/21/21	Pfizer booster eligibility expanded to those older than 65 years, younger adults with risk of severe COVID-19 or high risk of exposure - ongoing
State	10/18/21	Vaccine Requirement for all employee, on site contractors and volunteers at public and private K-12 schools, public and private 2–4-year institutions of higher learning and all early learning and childcare programs. Colleges and Universities are allowed to reopen upon compliance with Proclamation 21-14.1
State	10/22/21	Booster Eligibility expanded statewide to those 18+ who received J&J > 2 months ago, or Pfizer/Moderna > 6 months at a higher risk of severe COVID-19 or high risk of exposure
State	11/3/21-11/22/21	Eligibility for Pfizer Vaccine includes children 5-11; Booster Eligibility expanded statewide to those 18+ Pfizer/Moderna > 6 months ago
Local	12/4/21	Public Health – Seattle & King County confirmation of the first case of the Omicron variant of COVID-19 in King County
State	12/9/21	Booster Eligibility expanded statewide to those 16-17 who have received Pfizer/Moderna > 6 months ago
State	1/3/22 - 1/22/22	Booster Eligibility expanded statewide to those 12-15 who have received Pfizer/Moderna > 6 months ago; Booster Eligibility changed from 6 months to 5 months; Washington "Say Yes! COVID-19 Home Test" Program launched allowing residents to order 2 COVID-19 tests per

JURISDICTIONAL LEVEL	DATE	MILESTONES
		month
Local	3/1/22	King County Vaccination Verification Order ends
State	3/11/22	King County Mask Directive is lifted for all venues and gatherings

ACRONYMS

A&I	Analytics and Informatics
AAR	After Action Report
AC/RC	Alternate Care / Recovery Center
ACS	Alternate Care Site
ADA	Americans with Disabilities Act
ALF	Assisted Living Facilities
APDE	Assessment, Policy Development, and Evaluation
BIPOC	Black, Indigenous, People of Color
CBO	Community-Based Organization
CDC	Centers for Disease Control and Prevention
CHS	Community Health Services
CLIA	Clinical Laboratory Improvement Amendment
CMS	Centers for Medicare and Medicaid Services
COOP	Continuity of Operations Plans
COVID-19	Coronavirus Disease – 2019
CSB	Customer Service Bureau
DAJD	Adult and Juvenile Detention
DOH	Washington State Department of Health
DHHS	Department of Health & Human Services
DOC	Department Operations Center
EAP	Employee Assistance Program
EHD	Environmental Health Services
EMSA	Emergency Medical Services Authority
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
ERT	Equity Response Team
EUA	Emergency Use Authorization
ESF	Emergency Services Function
FAST	Field Assessment Support and Technical Assistance
FBO	Faith-Based Organization
FBOD	Finance and Business Operations Division
FDA	Food and Drug Administration
FEMA	Federal Emergency Management Agency
HAI	Hospital Associated Infection
HAR	Household Assistance Request
HCC	Healthcare Coalition
HEART	Homeless Health Emergency Action and Response Teams
HHS	U.S. Department of Health and Human Services
HMAC	Health and Medical Area Command
HPI	Healthy Places Index

HR	Human Resources
I&Q	Isolation and Quarantine
IAP	Incident Action Plans
ICS	Incident Command System
IT	Information Technology
JHS	Jail Health Services
JIS	Joint Information System
KCIT	King County Information Technology
LTCF	Long- Term Care Facility
MEO	Medical Examiner's Office
MHCC	Medical and Health Coordination Center
MHOAC	Medical Health Operational Area Coordinator
MOU/MOA	Memorandum of Understanding/Agreement
MYTEP	Multi-Year Training and Exercise Program
NIMS	National Incident Management System
OEM	Office of Emergency Management
OWS	Operation Warp Speed
PAPR	Powered Air Purifying Respirator
PARCAG	Pandemic and Racism Community Advisory Group
PHN	Public Health Nurse
PHSKC	Public Health - Seattle & King County
PHRC	Public Health Reserve Corps
PICC	Public Information Contact Center
PIO	Public Information Officer
PPE	Personal Protective Equipment
RR	Resource Request
SEOC	State Emergency Operations Center
SNF	Skilled Nursing Facilities
SOP	Standard Operating Procedure
SSTAR	Safe Start for Taverns and Restaurants
SWIQ	Stipend for Workers in Isolation and Quarantine
ULTF	Ultra-low Temperature Freezer
WASCLA	Washington State Coalition for Language Access
WDRS	Washington Disease Reporting System
WIC	Women, Infants, and Children