



COVID-19 Vaccine Action Command and Coordination System (VACCS) Center



Final Report: Blueprint for Public-Private Partnering

October 2021



 Downtown Seattle, WA

VACCS Center Final Report

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Table of Contents

| | |
|---|----|
| Executive Summary and Top Successes..... | 2 |
| Key Ingredients for Success..... | 5 |
| History..... | 7 |
| Mission, Roles, and Structure..... | 8 |
| Staffing - The Team..... | 10 |
| Reporting Responsibilities..... | 11 |
| Meetings: Recurring VACCS Center, VACCS Director, and Workstreams meetings/cadence..... | 12 |
| Projects, Deliverables, Outcomes, and Lessons Learned..... | 14 |
| I. Technology and Data Workstream Projects..... | 14 |
| II. Communication Workstream Projects..... | 17 |
| III. Business Process Workstream Projects..... | 21 |
| IV. Supply Logistics and Deployment Workstream Projects..... | 22 |
| V. Situational Awareness Workstream Projects..... | 26 |
| VACCS Center Playbook for a Public-Private Partnership..... | 26 |
| APPENDICES..... | 27 |
| A. VACCS Center COVID-19 Partnerships..... | 28 |
| B. VACCS Center Guiding Principles..... | 33 |
| C. VACCS Center Partner List..... | 35 |
| D. VACCS Center Playbook for Startup of a Public-Private Partnership..... | 36 |

Executive Summary and Top Successes¹

Recognized as a national leader and model,² the Department of Health (DOH) Vaccine Action Command and Coordination System (VACCS) Center was formed in late January 2021 by Governor Jay Inslee in response to the COVID-19 pandemic. The VACCS Center created public-private partnerships leveraging the talent and resources of the private sector in support of the state in achieving the initial goal of administration of 45,000 COVID-19 vaccine doses a day in the safest, fastest, most equitable and efficient manner.³ This goal was exceeded by late February 2021, once vaccine supply to the state increased.

Governor Inslee requested that the Washington DOH, led by Secretary Dr. Umair A. Shah and his team, oversee and operationalize the work of the VACCS Center. The DOH hired Dan Laster as the VACCS Center Director to lead its efforts in January. Over time the Center was supported by more than 50 partners from across Washington including leading companies, small and medium businesses, unions, business associations, non-profits, foundations, community groups, non-governmental partners, and volunteer groups.⁴

These partnerships created solutions that addressed the needs and challenges in the Washington vaccine ecosystem to deliver COVID-19 vaccines as effectively, efficiently, and equitably as possible, and to provide a positive patient experience to all Washingtonians. The extraordinary success of vaccinations throughout Washington working across sectors embodies the collective and innovative spirit of the state. **The success couldn't have been achieved by either the public or private sector working alone. It was our concerted efforts to save the lives of our fellow Washingtonians that motivated everyone working together—a true partnership across all sectors.**

“The COVID-19 global pandemic is one of the most significant challenges in memory calling for an unprecedented humanitarian response. The Governor, Secretary of Health, Director of the VACCS Center, and Challenge Seattle private/non-profit sector CEOs along with the broader business community and the teams of each came together forming a unique public-private partnership to answer that call. We are proud of the leadership and teamwork that resulted in an efficient and effective mass vaccination program dedicated to successfully saving the lives of our fellow Washingtonians.

- Chris Gregoire, CEO, Challenge Seattle & former Governor, WA State

”

¹VACCS Center was one part of the Washington State's incredible effort to vaccinate its population. Overall results of the vaccine efforts (over 73% of population 12 and up received at least one dose by Aug. 31) reflect the tireless work and sacrifices of DOH staff, LHJ staff, front line health workers, and hundreds of thousands of people mobilized across multiple sectors working for the greater good to save lives and in the proud tradition of collective action of Washington State. While we are proud of the achievements working together, we also want to honor and remember the many lives lost during the pandemic and the loss of family members, friends, and colleagues.

²Duke Margolis Center for Health Policy Report: [Building Public-Private Partnerships to Support Efficient and Equitable COVID-19 Vaccine Distribution, Access, and Uptake \(duke.edu\)](#) (April 12, 2021).

³Washington's private sector engaged immediately in responding to the COVID-19 pandemic early in 2020, prior to the formation of the VACCS Center. Early in the pandemic response, Gov. Inslee appointed Vice Admiral (ret.) Raquel "Rocky" Bono, Director to manage those efforts which involved health care system partnerships.

⁴See VACCS Center Partner List, Appendix C.

Top Successes

Vaccine Locator Tool⁵



Vaccinate WA: Find COVID-19 Vaccine Appointments Near You

In six weeks, a dream public-private technology team⁶ conceived and launched the Vaccine Locator Tool on March 18, 2021. The user-friendly tool reflects the Center’s “Equity by Design” principle: launched in 30 languages with six accessibility settings. The team worked with providers to add accessibility features on provider sites. More than 2.5 million unique visitors have used the site, with a 70% click-through rate to vaccine provider scheduling sites.

⁵In January 2021, there was no easy way to learn of vaccine availability in the state. Washingtonians were spending hours—sometimes days—searching websites and calling numerous providers to discover who had vaccine availability. The digitally savvy, with time and resources, were unfairly advantaged in getting vaccinated. For this reason, the initial top priority of the Center was to solve the absence of a simple-to-use tool to surface vaccine availability to book an appointment with a provider, coupled with enhancing the DOH Call Center to aid those without ready access to the internet.

⁶Team included: DOH Health Technology Solutions (IT), DOH WA Health, Starbucks, Microsoft, Prota Ventures, Expedia, COVIDWA (a group of software engineer volunteers who built a tool called COVIDWA.com to surface vaccine appointments in early February 2021), Costco, City of Seattle, Challenge Seattle, and EPIC and PrepMod (scheduling software vendors).

Enhanced capacity of WA State COVID-19 Assistance Call Center⁷

In March 2021, our 2-1-1 Call Center vendor, DOH, and Amazon⁸ collaborated seamlessly to add the power of Amazon Connect—chatbot, web bot and live agents—to the Washington State COVID-19 Assistance Call Center. This was deployed in two weeks from original conception of plan. The extraordinary result: the partnership fielded more than 500,000 calls and helped more than 50,000 Washingtonians⁹ receive individualized attention to get vaccine appointments. The 2-1-1 Call Center was particularly helpful for seniors and other Washingtonians who had challenges accessing vaccines through the internet. The Wall Street Journal highlighted the innovation of tapping the cloud and technology to support the vaccine rollout: [Big Tech Uses Cloud to Facilitate COVID-19 Vaccine Sign-ups - WSJ](#) (April 20, 2021).

Supply allocation process improved with technology¹⁰

Microsoft partnered with DOH staff to improve the weekly supply allocation process among vaccine providers across the state. This included developing new vaccine-ordering tools for the 39 local health jurisdictions (LHJs) to aid DOH in deciding on allocations and placing weekly orders with the federal government for all the providers.

Business process innovations for efficiency and patient experience at vaccination sites¹¹

Starbucks analyzed and made recommendations to improve the efficiency and patient experience at the four state-run mass-vaccination sites. For example, efficiency was improved by 30% at the Clark County (Vancouver, WA) site based upon modeling.¹² Numerous other private-sector partners (e.g., Amazon, Boeing, Kaiser Permanente, Microsoft, Providence/Swedish, and Schweitzer Engineering Laboratories [SEL]) engaged in both modeling and continuous process improvement to enable mass-vaccination sites across Washington to be amazingly efficient (typically no more than 30 minutes from arrival to departure). The partnership also resulted in Challenge Seattle—an alliance of CEOs from 21 of the region's largest employers—publishing [Vaccine Playbook for Public-Private Partnerships \(filesusr.com\)](#).

Supply Logistics Advisory Group

An advisory team comprised of experts from the Bill & Melinda Gates Foundation, Kaiser Permanente, and Starbucks met weekly with DOH staff to provide insights, address emerging challenges, and make recommendations on continuous improvement to supply logistics and strategies to achieve efficient and equitable uptake of the vaccines.

Free Transportation Solutions

We formed partnerships with mass-transit authorities (Sound Transit, Pierce Transit, Valley Transit, and Spokane Transit), ridesharing services (Uber and Lyft), and our 2-1-1 call center colleagues to provide free transportation to vaccination sites to remove transportation barriers for Washingtonians.

⁷ The week the VACCS Center was launched, the 2-1-1 Call Center was completely overwhelmed by a massive demand for information—with more than 4,500 Washingtonians getting voicemail by 1:30 p.m. one day in mid-January. The initial request from DOH to the VACCS Center was additional call agents. The Center translated this need into a much larger opportunity by framing a problem statement and then turning to the private sector for a solution. Amazon responded to the need with their Amazon Connect Technology, along with additional live agents to field calls.

⁸ Amazon also made available the services of Aspen Technology Group Inc. (TGI). Aspen participated fully in the deployment and fully supported the 2-1-1 Call Center and the project 24/7.

⁹ As of August 31, 2021.

¹⁰ In January, the team within DOH responsible for weekly supply allocation decisions and ordering from the federal government worked extraordinarily long hours (every Tuesday-Friday until completion) to make the most equitable allocation decisions. This was a complex manual process and it was a high priority for DOH to streamline it.

¹¹ Washington sites were recognized as best in class. The CDC sent an engineering team to study a sampling of mass-vaccination sites across Washington and in other states. After the Washington tour, the CDC lead noted that the sites (including the Lumen site in Seattle) were as efficient as any in the U.S.

¹² This private-sector review also affirmed when sites were organized for optimal efficiency.

Key Ingredients for Success

- Clear goal and concrete objectives.¹³
- Unequivocal ground rule of volunteer/pro bono participation of private partners.
- All partners approached participation with humility and no egos.
- Strong principles of operation¹⁴ to build trust¹⁵ and strong relationships within and across sectors.
- Consistent, coordinated, and frequent communication with and among partners.¹⁶
- Alignment of interests of the private and public sector (which led to a unified and coordinated public and private sector effort).
- Leadership and sponsorship at senior levels of government (including the governor and secretary of health) and among private-sector partners.¹⁷
- Center structure with workstreams.
- Emphasis on listening to the needs of the communities and of the various players in the vaccine ecosystem.¹⁸
- Strong relationship management across the public and private sectors.¹⁹
- Extraordinary project management across the Center workstreams and projects.²⁰
- An “Equity by Design” approach to all efforts.
- Clear DOH decision-making authority and empowerment of workstream leads.
- Teams functioned like skunkworks (mode of operating was independent and clear) to enable nimbleness and fast delivery.



“At Costco, we know that teamwork and a focus on excellent customer service are keys to success. The Governor’s VACCS Center at the Department of Health was all about teamwork dedicated to efficiently delivering lifesaving vaccines to the people of Washington. With 4.4M vaccinated and counting, Costco was proud to be part of this team.”

- Craig Jelinek, President & CEO, Costco



¹³ If an activity did not affect vaccine supply, demand, logistics, or patient experience, the VACCS Center did not engage because it was out of scope.

¹⁴ See VACCS Center Guiding Principles, Appendix B.

¹⁵ A lesson learned was the need to overcome lack of trust within DOH. The VACCS Center’s philosophy of “do no harm” to DOH activities helped establish trust. However, early orientation meetings with DOH explaining the purpose and structure of the VACCS Center would have helped develop trust, especially given the crisis mode under which DOH was operating and a predisposition of concern of distraction from engagement with the private sector. Such orientation did occur with the private sector through presentations to Challenge Seattle and Washington Roundtable, and through engagement with individual DOH teams, the Center built trust.

¹⁶ See Meetings section below.

¹⁷ At times it was challenging to ensure coordinated management of private sector input. The director played a key role in addressing issues raised by the private sector and managing expectations about what should be actionable.

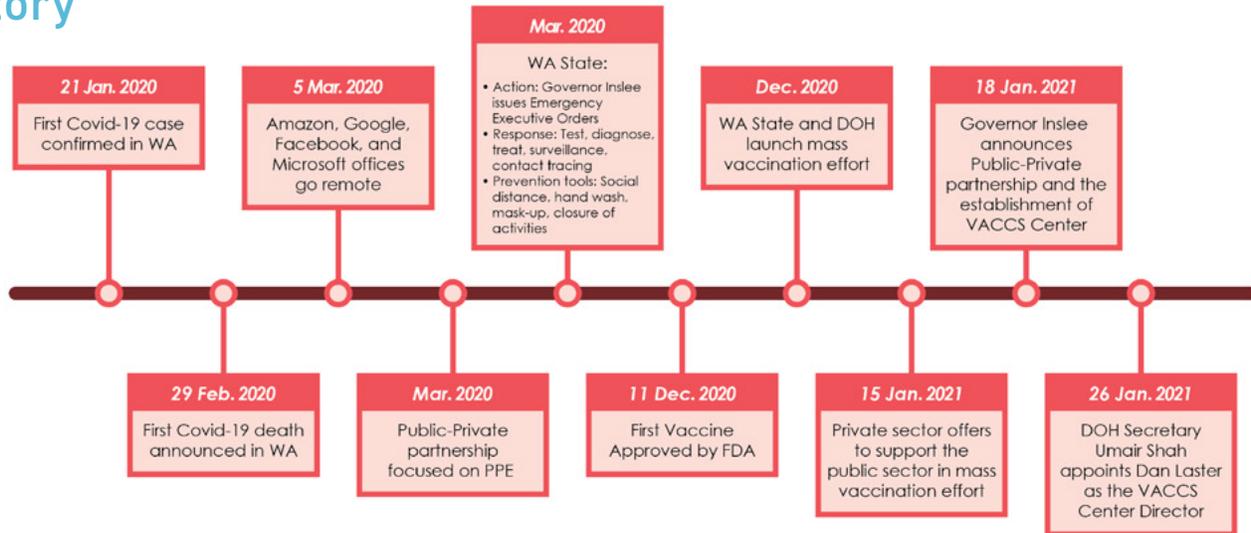
¹⁸ The DOH Collaborative ([Collaborative :: Washington State Department of Health](#)) has focused on listening to communities from an equity perspective.

¹⁹ The Director of the Center had decades of experience working in the private sector and in global health, including product development partnerships. A critical aspect of the role was building trust and respect across the public and private sectors and recognizing the unique perspectives and experiences that each possess.

²⁰ The Senior Project Manager of the Center had decades of experience, including technology sector product development.



History



During the pre-vaccine phase of the pandemic, the private sector in Washington demonstrated extraordinary leadership in immediately moving to remote work in early March 2020 and taking other steps as formal government action and executive orders were being put in place.²¹ In addition, the private sector partnered extensively with the Governor’s Office, Department of Health, and the local health jurisdictions. Early in the pandemic response, Gov. Inslee appointed Vice Admiral (ret.) Raquel “Rocky” Bono, Director to manage those efforts which involved health care system partnerships.

On Jan. 18, 2021²², the governor announced formation of the VACCS Center with the express objective of establishing a public-private partnership to achieve robust vaccination efforts in the state of Washington.²³ The following week, Dan Laster was appointed Director of the VACCS Center by the Washington State Department of Health Secretary Dr. Shah.²⁴ The VACCS Center:

- Initially held daily (changed over time) 7:00a.m. VACCS Command Center meetings for situational awareness and sharing among the public and private-sector partners.
- Identified critical priorities.
- Created VACCS Center structure, roles, and operating principles.
- Formed workstreams quickly.
- Leveraged integral and integrated touchpoints and activities alongside DOH leadership and staff to ensure coordinated efforts.

The VACCS Center operated from late January through end of July 2021 (a full 6 months of operation). Projects developed by Center partnerships were either completed or transferred to DOH. In addition, relationships developed during the life of the Center transitioned to permanent DOH leadership to ensure ongoing information sharing and partnering, including on overall public health issues beyond the COVID-19 vaccine mass-vaccination effort. DOH is planning ongoing meetings to replace the 7 a.m. VACCS Center calls to ensure ongoing information sharing across sectors and to continue partnerships as needed and appropriate.

²¹ Saving a city: How Seattle’s corporate giants banded together to flatten the curve (Fortune April 17, 2020) [Coronavirus in Seattle: How Amazon, Microsoft, Starbucks, Nordstrom, Costco worked together to flatten COVID-19 curve | Fortune](#).

²² On Friday, January 15, 2021, the governor reached out to private sector leaders to discuss how the public and private sector could work together to meet the enormous challenge of vaccinating the entire state of Washington as quickly as possible. That conversation was the catalyst for the creation of the VACCS Center.

²³ [Inslee announces state plan for widespread vaccine distribution and administration | by WA Governor’s Office | Washington State Governor’s Office | Medium](#).

²⁴ [Department of Health welcomes new leader of public-private vaccine effort > Washington State Department of Health](#).

Mission, Roles, and Structure

The mission of the VACCS Center, expressly recognizing that all private partnerships were on a volunteer, pro-bono basis, was outlined at the outset.

Mission of the COVID-19 VACCS Center:

■ **Mass Immunization Goal:**
Achieve Herd Immunity²⁵

■ **WA Immediate Goal:**
45k Per Day Minimum

The Washington Covid-19 Vaccine Action Command and Coordination System (VACCS) Center has been established to support comprehensive access to mass vaccinations across the state of Washington in the safest, fastest, most equitable and efficient means possible. Through Public-Private partnerships **the Center supports the Department of Health** by innovating and delivering solutions that address this critical need for and with our community. **All Public-Private partnership efforts are strictly on a volunteer basis**, compliant with Washington State and Department of Health guidelines and will serve under the direction of Washington State and Department of Health.

Role of VACCS Director:

■ **Goal: Vaccination with Safety, Speed, Equity, and Efficiency.**

- 1) Help public sector surface needs and challenges
- 2) Identify private sector resources and expertise
- 3) Translate between public and private sectors
- 4) Match public sector needs with private sector capabilities
- 5) Develop work streams with public and private sector leads
- 6) Facilitate problem solving to reach pragmatic, innovative solutions

²⁵“Herd immunity” is currently referenced as “community immunity.”

The VACCS Center structure was “fit for purpose”:



Wenatchee, WA: Aerial shot of mass vaccination site at Town Toyota Center



DOH Staff at the "Washington Ready" flag raising event

Staffing - The Team



The structure of the VACCS Center was informed by “fit for purpose” principles.

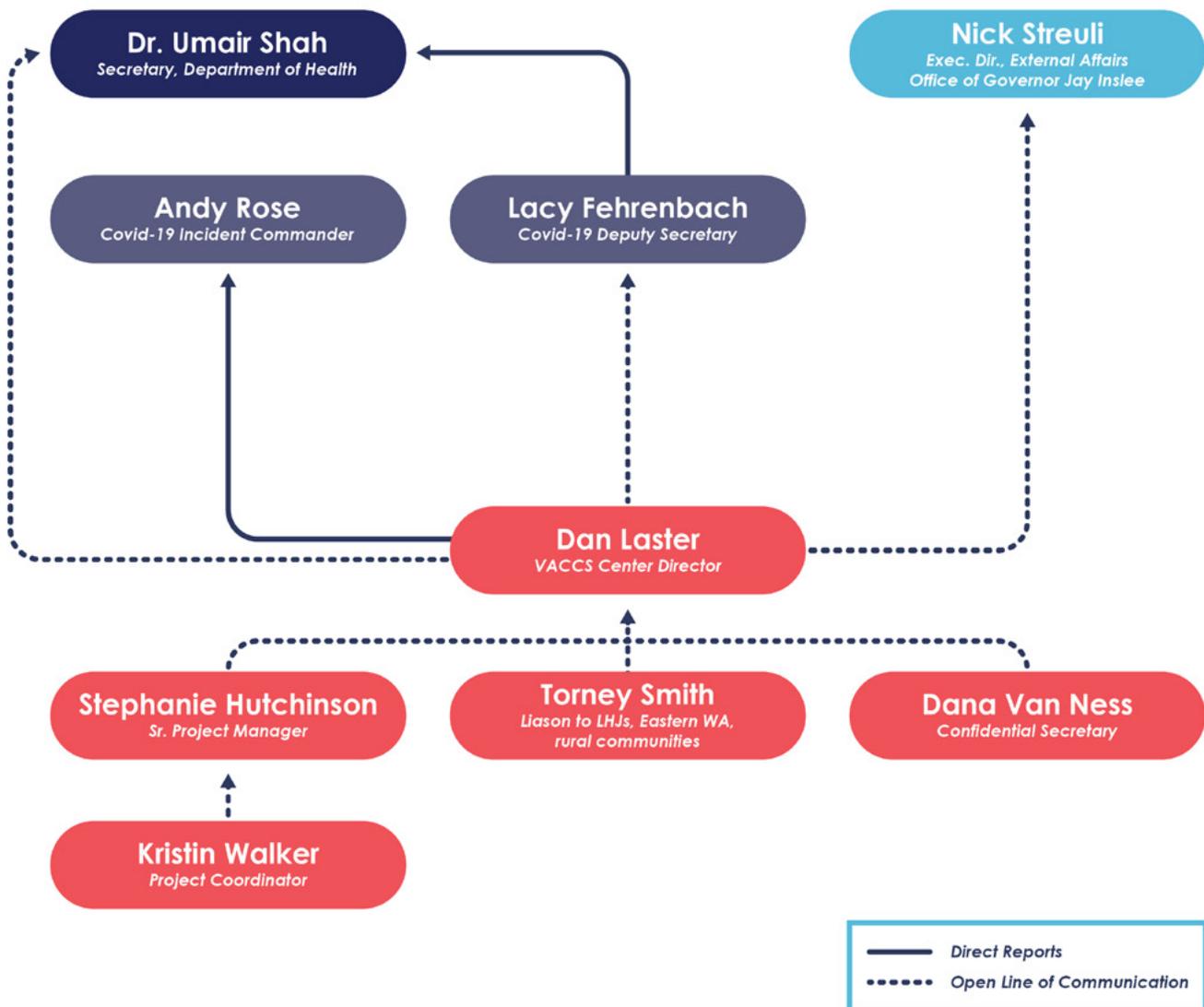
In addition to the director, DOH assigned a senior project manager and deputy secretary of strategic partnerships.²⁶ A retired senior local health jurisdiction (LHJ) leader was enlisted to support the VACCS Center. That person played a critical role as a liaison to the LHJs in understanding and eliciting their needs, particularly those in Eastern Washington and in rural communities. A confidential secretary supported the director and provided special projects support for the Center. Two months into operation, a project coordinator was added to support the senior project manager (who had an inordinate workload).

A Kaiser Permanente-loaned executive also provided support and insights, both at time of formation and thereafter, participating in several Center workstreams.²⁷

²⁶ “The deputy secretary of strategic partnerships had conflicting work responsibilities and so could not function in a deputy director capacity as originally anticipated. This led the director, partnering extensively with the senior project manager, to manage all private-sector relations. Depending upon the scope and scale of operations of a future public-private partnership center, we recommend having a person operate in a deputy director capacity to help manage the Center and partner relations to ensure effective workload balancing.

²⁷ The loaned executive played a great utility player role to assist as needed, especially in the early “storming and norming” phases of the Center. One example of value-add was arranging for a meeting with Kaiser Permanente’s COVID-19 Command Center leader to gain practical insights for leading a crisis command center.

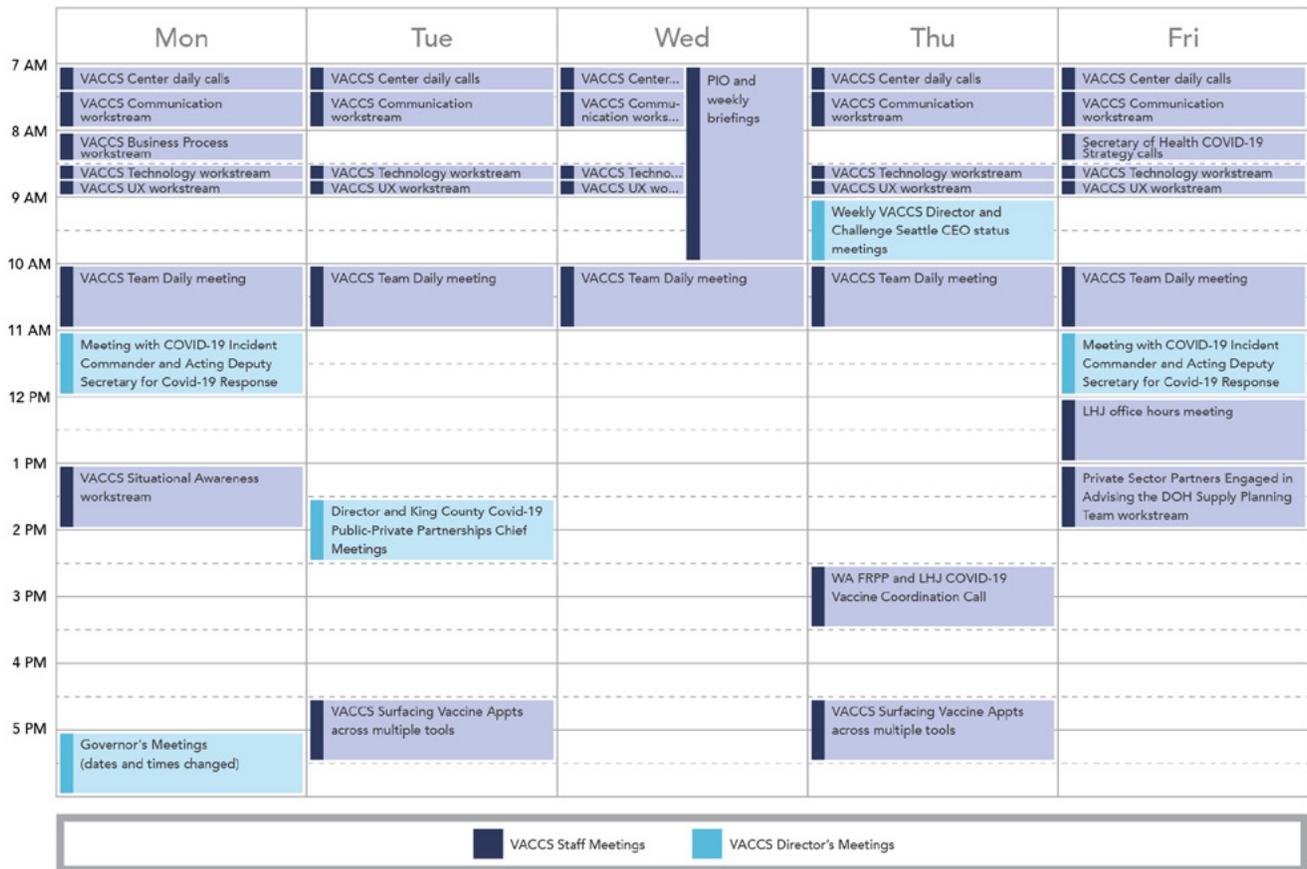
Reporting Responsibilities



Once created by Governor Inslee and operationalized by DOH Secretary Shah and his team, the VACCS Center became an integral part of DOH vaccine efforts for the course of six months. Due to the central role of the governor in creating the center and establishing key private-sector partner relationships, the director maintained close working relations with the governor’s executive director of external affairs. On a day-to-day basis, the center director was a direct-line report to the DOH COVID-19 incident commander, with additional “dotted-line” reporting to both DOH deputy secretary for COVID-19 response and the secretary of health.

- The director met twice weekly with the incident commander and deputy secretary of COVID-19 response for situational awareness and to ensure rapid access to resolve issues.
- For the first few weeks and then on an ad-hoc basis, the director communicated regularly with the secretary of health to ensure alignment on approach/philosophy and priorities.
- The director also on occasion engaged the secretary of health’s chief of staff for quick guidance to identify key leadership and staff within DOH to address specific needs.

Meetings: Recurring VACCS Center, VACCS Director, and Workstream meetings/cadence



1. Governor's Meetings²⁸

For the first month of operation, the governor convened a weekly meeting with the CEO of Challenge Seattle, the leaders of Costco, Kaiser Permanente, Microsoft, and Starbucks,²⁹ the secretary of health, and the acting deputy secretary of health for COVID-19 response at which the director reported out status and progress. Once the VACCS Center moved from “storming to norming” of operations, the meetings were held every other week. Meetings with the governor and the private-sector leaders were helpful in terms of overall direction of the VACCS Center due to senior leadership sponsorship of these pro bono efforts supporting vaccine distribution.

2. VACCS Center Meetings

For the first month and a half, the center convened “command center” meetings with DOH leaders and private-sector partners at 7:00 a.m., Monday through Friday. DOH secretary of health and many members of the DOH Executive Leadership team participated in these meetings. As the projects in the workstreams progressed and vaccine supply increased, the cadence was changed in March to 7:00 a.m., Monday, Wednesday, and Friday. Starting in May, the standing meetings were reduced to twice weekly, 7:00 a.m., Tuesday and Friday.

²⁸The governor and his team met and continues to meet with many stakeholders over the course of the pandemic.

²⁹These private sector leaders were representative of and worked with the rest of the business community to mobilize the private sector in support of the state and Department of Health.

3. Workstream and Project Meetings

These varied by workstream and projects within workstreams and were “fit for purpose.” Initially, the technology and data workstream met daily; the communications workstream met daily; the supply logistics and deployment workstream met weekly; business process met weekly. Given the short development cycle, the Vaccine Locator Tool project team met daily with specific sub-teams meeting three times a week. The call center project had daily team meetings until launch.

4. Director, Incident Commander, and Deputy Meetings

Throughout the VACCS Center’s existence, standing meetings took place twice weekly.

5. Director and King County COVID-19 Public-Private Partnerships Chief Meetings

Throughout the VACCS Center’s existence, there were weekly standing meetings. These ensured information sharing and coordination to avoid duplication of efforts and to identify which challenges should be addressed at the state level through the center as contrasted with the King County level.

6. Director and Challenge Seattle CEO Meetings

Throughout the VACCS Center’s existence, we held standing weekly meetings. These meetings enabled the director to stay apprised of business community concerns and to share ideas with the Challenge Seattle CEO as a sounding board and counsel, both in terms of priority setting and how to tap the most effective private-sector resources, and to collaborate most effectively with private-sector partners.

7. VACCS Center Staff³⁰ Meetings

Throughout the center’s existence, we held daily standing meetings. These meetings were critical for situational awareness and to move projects forward at an extremely fast pace.



 Yakima, WA: Scenes from the FEMA-funded COVID-19 Community Vaccination Site at State Fair Park. (Left) Second Gentleman of the United States, Doug Emhoff greets Jay Inslee, Washington State Governor, during their visit. (Right) A young boy waits with his father who received the vaccine.

³⁰ Director, senior project manager, liaison to LHJs, Eastern Washington, and rural communities, confidential secretary, and project coordinator.

VACCS Center Projects, Deliverables, Outcomes, and Lessons Learned³¹

I. Technology and Data Workstream Projects



Washington once again showed leadership through partnership, innovation and a relentless focus on data driven results to collectively do our best to save lives. Microsoft was proud to partner with the Governor, DOH and the VACCS Center, private sector leaders and our tech partners to bring our technology expertise and resources to the table to ensure timely and patient friendly vaccine delivery in our state.

- Brad Smith, President, Microsoft



A. Vaccine Locator Mobile/Web App

The app has a simple user interface (in 30 languages with six accessibility settings) to search within seconds by ZIP code for nearby vaccine appointment provider information.³² The team was comprised of staff from DOH Health Technology Solutions (IT), DOH WA Health, Starbucks, Microsoft, Prota Ventures, Expedia, COVIDWA (a group of software engineer volunteers who built COVIDWA.com to surface vaccine appointments in early February 2021), Costco, City of Seattle, Challenge Seattle, and EPIC and PrepMod (scheduling software vendors). The team developed and launched the Vaccine Locator Tool in six weeks from initial ideation and had instant success. Overall, the team was extraordinarily effective.

Outcome

- 84,000 searches in the first 24 hours post launch.
- 70% who initiated a search followed through to a provider scheduling website.
- To date, more than 2.5 million Washingtonians have used the tool.

Lessons Learned - Positive

- Laser focus on clear mission and project goals.
- Clear identification of minimal viable product.
- User centric, simplicity, and equity design focus.
- A flexible data architecture was important to the tool's success. The team designed a system that was able to accommodate whatever data providers could share, which reduced development burden on them and allowed the team to move faster (vs. mandating an API specification that they were required to match).
- Clear decision-making authority in DOH CIO as public-sector lead.
- An inspirational and empowered DOH CIO leader who had the respect and confidence of DOH leadership and the project team.

³¹ See also VACCS Center COVID-19 Partnership, Appendix A.

³² Although there was a federal vaccine locator website, it only contained allocation information, not appointment options. [Vaccines.gov - Find COVID-19 vaccine locations near you](https://www.vaccines.gov/Find-COVID-19-vaccine-locations-near-you)

- Clear co-leadership with Microsoft as private-sector lead (leadership without ego and great pragmatism to bring in varied perspectives, mindful of both DOH culture and building good team culture).
- Team culture with no egos, democratic style, and collaborative environment (overall, amazing esprit de corps among the team).
- The “Equity by Design” approach included early meetings with members of the disability community to inform design, including the six accessibility settings included at launch, and the work to encourage providers to surface information about provider site accessibility. In addition, the focus on equity led to launch in 30 languages.³³
- Private-sector team members had senior-level sponsorship within their organizations supporting their participation.
- Effective product manager who led the team using lean, laser-focus approach.
- Getting feedback from Vaccine Bookers (including as a beta tester), a volunteer group that assisted Washingtonians in securing vaccine appointments before launch of the tool, aided in design improvement for ease of use.
- Quick adoption of the tool was aided by press briefing on date of launch with the governor and VACCS Center director, followed by numerous media interviews with the director within 24 hours of launch.

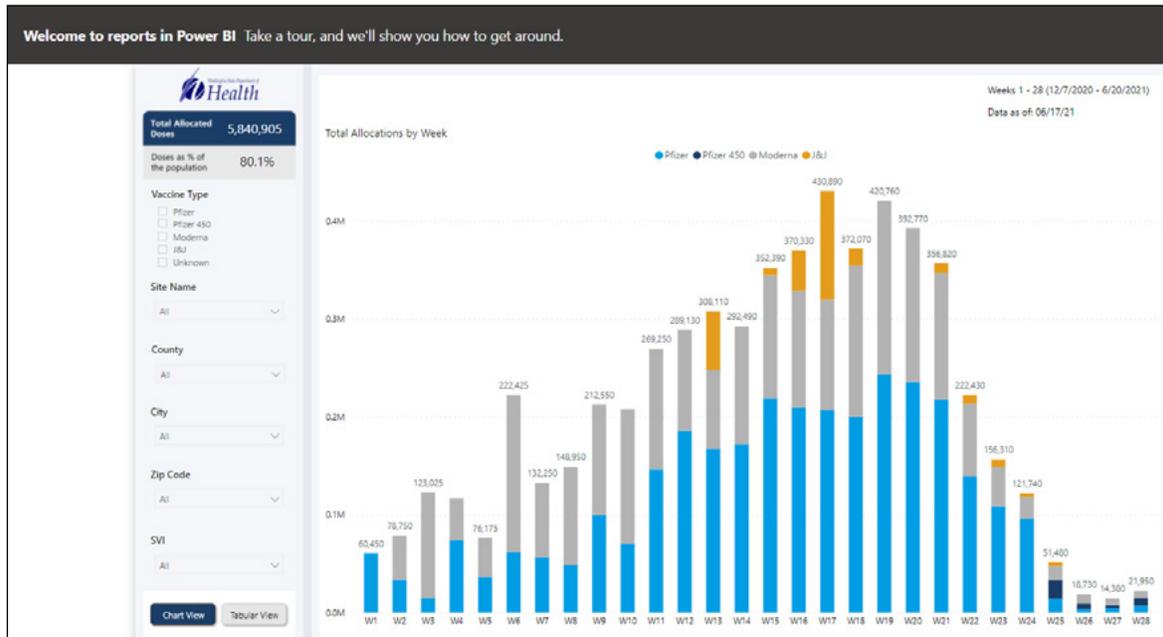
Lessons Learned - Challenges

- One goal was to establish electronic connections (APIs-application programming interfaces) to get real-time appointment information from pharmacies in the Federal Retail Pharmacy Program. Early success with Epic led the team to overestimate the speed of retail pharmacy API development, partially driven by organizational complexity and workload demands. Ultimately, the app could only go live by relying heavily on our COVIDWA partnership for most scheduling appointment data (COVIDWA created a very powerful tool that gathered provider site scheduling information regularly to have current data).
- Coordination with the volunteer group COVIDWA was not as smooth as it could have been at the outset; eventually that partnering worked well. There was an understandable tension given that success of the Vaccine Locator Tool effectively reduced the public’s use of the COVIDWA appointment location tool.



³³The equity innovations, including accessibility and language settings, are leading edge in the public sector and are being followed by others, including the federal government as it considers improvements to www.vaccines.gov and by DOH on its other sites.

B. Supply Allocation Improvements with Technology



Week 18 <-- key field

| | Moderna Booster | Moderna Prime | Pfizer Booster | Pfizer Prime | J&J Prime | TOTAL |
|---------------------------------|-----------------|---------------|----------------|----------------|---------------|----------------|
| Original Target | 72,400 | 75,700 | 100,620 | 102,960 | 12,900 | 364,580 |
| Weekend Orders | | | | | | - |
| Overdrafted from Prior Week | | | | | | - |
| Unused from Prior Week | 19,000 | 7,300 | | | | 26,300 |
| Borrowed btwn Prime and Booster | | 6,700 | | 585 | 4,500 | 11,785 |
| Final Target | 91,400 | 89,700 | 100,620 | 103,545 | 17,400 | 402,665 |
| Final vs. Original Target | 19,000 | 14,000 | - | 585 | 4,500 | 38,085 |
| Comment | | | | 1 | | |

| Facility Category | Moderna Booster | Moderna Prime | Pfizer Booster | Pfizer Prime | J&J Prime | Grand Total | % Breakdown | Target % | Facility Category | Breakdown with prime only |
|-------------------|-----------------|---------------|----------------|----------------|---------------|----------------|-------------|----------|-------------------|---------------------------|
| Tribes | 1,400 | 1,700 | - | 1,170 | 100 | 4,370 | 1% | 0.05 | Tribes | 1% |
| Hospital | 23,200 | 13,100 | 47,970 | 31,590 | 900 | 116,760 | 30% | 22-25% | Hospital | 23% |
| Pharmacy | 8,200 | 11,500 | 8,190 | 5,850 | 2,900 | 36,640 | 10% | 17-19% | Pharmacy | 10% |
| CHC-LHI-Provider | 47,600 | 47,100 | 18,720 | 54,990 | 12,800 | 181,210 | 47% | 17-18% | CHC/LHI/Provider | 58% |
| Mass Vax | 4,800 | 7,400 | 24,570 | 7,020 | 700 | 44,490 | 12% | 35-36% | Mass Vax | 8% |
| TOTAL | 85,200 | 80,800 | 99,450 | 100,620 | 17,400 | 383,470 | 100% | | | 100% |
| | 6,700 | 8,900 | 585 | 2,925 | - | 19,110 | | | | |

| Vaccine Type | Washington State Total Allocation Available from CDC | Total Requested | DoH Allocated |
|--------------------------------|--|-----------------|---------------|
| Pfizer Prime | 103,545 | - | - |
| Moderna Prime | 89,700 | 1,400 | 1,300 |
| Janssen Prime | 17,400 | 1,000 | 200 |
| Prime subtotal | 210,645 | 2,400 | 1,500 |
| Pfizer Booster | 100,620 | - | - |
| Moderna Booster | 91,400 | - | - |
| Booster subtotal | 192,020 | - | - |
| Total (Prime + Booster) | 402,665 | 2,400 | 1,500 |

| County Served | Total Doses Distributed | Total Prime Doses | Total Booster | Pro Rata % by General Pop | 1st+2nd Expected Doses | Actual % Allocation Total | Difference btwn Pro-rata % and Alloc % | Prime Expected Doses | Actual Prime % | Diff btwn Pro rata % and Alloc for Prime |
|---------------|-------------------------|-------------------|---------------|---------------------------|------------------------|---------------------------|--|----------------------|----------------|--|
| County | 59,775 | 39,125 | 20,650 | 1.00% | 49,945 | 1.20% | 0.20% | 30,694 | 1.28% | 0.28% |

| County Served | Total Doses Distributed | Total Prime Doses | Total Booster | Pro Rata % by General Pop | 1st+2nd Expected Doses | Actual % Allocation Total | Difference btwn Pro-rata % and Alloc % | Prime Expected Doses | Actual Prime % | Diff btwn Pro rata % and Alloc for Prime |
|---------------|-------------------------|-------------------|---------------|---------------------------|------------------------|---------------------------|--|----------------------|----------------|--|
| County | 1,500 | 1,500 | - | 1.00% | 3,476 | 0.43% | -0.57% | 1,720 | 0.88% | -0.13% |

| County Served | Order Number | PIN | Facility Name | Facility Category | County | Requested Pfizer Prime | Requested Moderna Prime | Requested J&J Prime | Requested Pfizer Booster | Requested Moderna Booster | Requested J&J Booster | Total DOH Order Prime + Booster | Tribes Only | Transfers Only | Consonus Only | Total less Tribes, Transfers, Consonus | Prime less Tribes, Transfers, Consonus |
|---------------|--------------|-----|---------------|-------------------|--------|------------------------|-------------------------|---------------------|--------------------------|---------------------------|-----------------------|---------------------------------|-------------|----------------|---------------|--|--|
|---------------|--------------|-----|---------------|-------------------|--------|------------------------|-------------------------|---------------------|--------------------------|---------------------------|-----------------------|---------------------------------|-------------|----------------|---------------|--|--|

When the federal government rolled out its system for states to request vaccines on a weekly basis, DOH had an extremely manual system requiring massive labor over a two-day period every week. Employees relied on a complex workbook to make decisions for allocation of the scarce vaccine received by the state. The team partnered with Microsoft over several months to build a tool (with ongoing iterations) to meet the demands of making challenging allocation decisions among hundreds of approved COVID-19 vaccine providers across Washington.

Outcome

- Eventually DOH staff met and exceeded their goal of completing allocation by 5:00 p.m. on Thursday afternoons.
- Enhanced effectiveness of the allocation process by improving LHJ input into allocation decisions.

Lessons Learned - Positive

- The close working relationship between the Microsoft team and the DOH supply allocation team was critical to the development, iteration, and training of the team on a solution.
- Considering role and how best to engage the LHJs led to the development of a workbook for LHJs to complete, enabling the DOH team to more efficiently allocate weekly vaccine supply.
- Microsoft effectively pivoted from bringing in consultants to develop a new tool to recognizing that customized use and training of the existing Microsoft Excel workbench was the more pragmatic solution (moving from a “build” to “buy” approach). The Microsoft lead’s ability to reassess the best approach was critical to quick provision of an effective solution.

II. Communication Workstream Projects

A. State COVID-19 Assistance Call Center further empowered with Amazon Connect Technology

Multiple partners seamlessly partnered: 2-1-1 call center vendor, DOH, Amazon, and Amazon’s call center support partner Aspen. They had a clear goal of increasing capacity and ensuring equity for Washingtonians who were not digitally savvy or not connected to the web.

Outcome

- Processed more than 500,000 calls.
- Almost 52,000 vaccination appointments booked.
- The Wall Street Journal highlighted the innovation of tapping the cloud and technology to support the vaccine rollout: [Big Tech Uses Cloud to Facilitate COVID-19 Vaccine Sign-ups - WSJ](#) (April 20, 2021)
- Project was highlighted in the Amazon company annual report.

Lessons Learned - Positive

- Identified public sector lead in DOH with decision-making authority.
- Great collegiality of lead at 2-1-1 call center in embracing partnership with Amazon.
- Incredible respect by Amazon team of the extreme pressures and demands on the DOH and 2-1-1 call center teams.
- Heavy focus on ease of use and equity.
- Strong project management through VACCS Center.

- Daily all hands-on deck meetings (with full commitment of all team members) to stay on pace and launch in coordinated way with Vaccine Locator Tool.
- Team culture with no egos, democratic style, and collaborative environment (overall, amazing esprit de corps among the team).
- Passion to serve Washingtonians equitably.
- Resource capabilities of Amazon enabled creation and implementation of the 2-1-1 and Amazon DOH Daily Call Center Report³⁴ (includes: call categories, volume, and call handling times) which allows for greater situational awareness and data-driven decisions.

B. Private Sector Communications Support

At the outset, Challenge Seattle companies and Edelman, a global public relations firm, offered communications support to DOH. This took many forms, including advice on social media and other outreach. In addition, Washington's successful sports franchises (Seattle Kraken, Seattle Mariners, Seattle Seahawks, Seattle Sounders FC, Seattle Storm, OL Reign) partnered with DOH on communications and team-sponsored vaccination events.³⁵

Outcome

- Broader and more effective communication reach

Lessons Learned - Challenges

- Coordination among the private sector took more time than anticipated.
- For several reasons, DOH was not ready for communications partnering in the early phases of the vaccination effort. By the time the DOH team had a new communications leader, and it was time for messaging to encourage hesitant Washingtonians to get vaccinated, the broad offer of communications support had passed.

C. Director Participation in Weekly DOH Press Briefings

Once the VACCS Center projects were in development, the director joined the press briefings to inform the public about how the challenges the public was experiencing (e.g., frustration about lack of easy way to surface appointment availability) were going to be addressed by center solutions. This included: Vaccine Locator Tool, enhanced call center, site efficiency improvements, and transportation solutions.

D. Resource Guides for Community-Based Organizations and Employers for Vaccination Uptake

The VACCS Center recognized a need to provide brief guides compiling resources to community-based organizations (CBOs) and employers to get their communities and employees vaccinated. In March and April of 2021, the center published these brief guides.

Outcome

- Easy-to-reference guides for CBOs and employers.

Lessons Learned - Positive

- Compiling all resources in one place was helpful to end users (CBOs, employers).

Lessons Learned - Challenges

- Challenges in engaging with DOH equity team delayed the release of CBO guide.

³⁴This report continues to be created and used daily by DOH.

³⁵Most of the sports franchise partnerships were led by DOH outside of the VACCS Center.



Dr. Shah, Dan Laster, and other DOH staff on-set for the Recharge to Win event

E. "Recharge to Win" event

Several months into the VACCS Center, the team recognized that DOH staff, LHJ personnel, and private-sector volunteers who had been contributing to various center efforts were fatigued due to the demands of their jobs and supporting the vaccination effort. The center determined that staging an event could motivate public- and private-sector partners by recognizing the extraordinary achievements of the partnerships to inspire ongoing work and volunteer efforts. Microsoft, through its Microsoft Studios, agreed to produce the "Recharge to Win" event.

Outcome

- Hundreds of public and private-sector partners viewed the event live and provided strong feedback on how motivational the event was.



Credit: Office of the Governor

F. "Washington Ready" event at the Space Needle

As a result of a partnership with the Space Needle and Chihuly Gardens, the VACCS Center organized an event for the governor, joined by representative frontline workers critical to the state's pandemic response, raising a DOH designed "Washington Ready" flag to provide an important public announcement that Washington was reopening for tourism and trade and had achieved great success in approaching the governor's goal of 70% of Washingtonians 16 and older receiving their first dose.

Outcome

- On July 1, the governor with others raised the "Washington Ready" flag. The event was covered by major media and served as the flagship event in the governor's public events recognizing the successful efforts at that time in achieving vaccination uptake.

III. Business Process Workstream Projects

Starbucks has always pursued a purpose that goes far beyond the pursuit of profit and there are many societal issues that can best be addressed through public-private partnerships. The power of these partnerships was evident as the Governor, DOH and the VACCS Center enabled Starbucks to contribute expertise in operations and logistics and work side-by-side with our government leaders to create a world-class vaccine distribution program for all Washingtonians.

- Kevin Johnson, President & CEO, Starbucks

A. Business Process Innovations for Efficiency and Patient Experience at Vaccination Sites

Prior to creating the VACCS Center, Starbucks and others private-sector partners worked with vaccine providers to stand up efficient mass-vaccination sites. Within days of launching of the center, Starbucks offered its engineering through-put and customer experience modeling team to evaluate the mass-vaccination sites being set up by DOH. Starbucks provided invaluable insights to enhance site efficiency (e.g., the Clark County, Vancouver, WA mass-vaccination site layout added an additional lane, increasing efficiency by 30%). Numerous other private-sector partners (e.g., Amazon, Microsoft, Kaiser Permanente, Providence/Swedish, and Schweitzer Engineering Laboratories [SEL]) engaged in continuous improvement to create extraordinarily efficient vaccination sites.

Outcome

- Vaccine sites of varying size across the state were optimized for efficiency and patient experience, resulting in extraordinarily successful mass-vaccination rollout throughout the state.
- The Lumen Field site in Seattle was the pinnacle of excellent business process, reflecting the best practices that evolved and had a scalable model from a few thousand to 20,000 people.

Lessons Learned - Positive

- Ongoing communication of efforts (successes and failures) contributed to continuous honing of all aspects of an effective and efficient vaccination process.

B. Vaccine Playbooks

Working as a coalition through Challenge Seattle, leading Washington companies, led by Challenge Seattle and Starbucks, developed the [Vaccine Playbook for Public-Private Partnerships \(filesusr.com\)](https://filesusr.com). Numerous valuable other playbooks (e.g., Amazon, Providence/Swedish, Schweitzer Engineering Laboratories [SEL], and Microsoft) were also created.

Outcome

- The various playbooks developed by Washington companies enabled efficient planning and warp-speed replication of a wide array of vaccination sites.

Lessons Learned - Positive

- Playbooks enabling rapid set-up of sites—with continuous process improvement—were a critical element to the success of mass vaccination in Washington State.

IV. Supply Logistics and Deployment Workstream Projects

Caring for our fellow Washingtonians is at the heart of all we do, so when we had the opportunity to partner with Governor Inslee, Dr. Shah and the DOH and VACCS teams, along with fellow community leaders and employers, Kaiser Permanente Washington quickly committed leadership and resources to help our fellow citizens and support our state's overloaded healthcare and public health systems.

- Susan Mullaney, President, Kaiser Foundation Health Plan of Washington

A. Ongoing Supply Logistics Advisory Group

Shortly after creating the VACCS Center, the incident commander sought help in planning for the introduction of new vaccines to the supply chain once Emergency Use Authorization was issued by the FDA. An advisory team comprised of three experts from the Bill & Melinda Gates Foundation, Kaiser-Permanente, and Starbucks—all with very different perspectives and experience—was created to provide guidance and be a sounding board to DOH leaders and the individuals responsible for COVID-19 response planning. The advisory team met weekly with DOH staff to address emerging challenges and make recommendations on continuous improvement to supply logistics and strategies to achieve efficient and equitable uptake of the vaccine.

Outcome

- Enhanced DOH planning and strategies for vaccination uptake.

Lessons Learned - Positive

- Forming an advisory group with diverse expertise from differing fields—global health (Bill & Melinda Gates Foundation), large private health provider (Kaiser Permanente), and retail logistics (Starbucks)—provided great insights and fresh perspectives to DOH.

Lessons Learned - Challenges

- Because DOH was moving so quickly and was under-resourced, it took a month to understand the nature of the need and opportunity and to connect with the right staff in DOH to provide effective assistance. The work of the advisory group gained momentum by having recurring one-hour Friday meetings and identifying various topics of interest to DOH.
- Forming the advisory group earlier would have added even more value to the vaccine rollout.

B. Removed Transportation Barriers

A month after formation of the VACCS Center, the director turned attention to removing barriers for certain communities. The center worked initially with Sound Transit to offer free transportation on light rail to and from vaccine appointments. Thereafter, momentum was built by reaching out to Pierce Transit, Spokane Transit, and Valley Transit, all of which developed free transportation options that worked for their transportation system. In addition, the center formed partnerships with Uber, Lyft, and DOH's 2-1-1 call center vendor to provide free transportation on the ride-sharing platforms to vaccination sites to reduce barriers for Washingtonians. Finally, we created a partnership with Sea Mar and its sister clinics to distribute some Uber codes to patients in need of transportation to get vaccinated.

Outcome

- Low-resourced individuals have free transportation to vaccination sites.

Lessons Learned - Positive

- The mass-transit offerings rolled out over time and were easy for Washingtonians to use (simply inform drivers about their destination to get vaccinated).

Lessons Learned - Challenges

- Unfortunately, the director had concerns initially about whether there were sufficient free rides from Uber and Lyft and held off on announcing these offerings until Uber confirmed free rides at a magnitude of the anticipated need. To date, very few Washingtonians availed themselves of the rides to get vaccinated. Risk should have been taken in announcing the free rides earlier and that might have led to greater usage. A broader education/communications plan about the free ride option was also needed.

C. Collaboration with Adios COVID

About a month after VACCS Center launched, the center learned of the work of Adios COVID, an ad hoc group formed to support efforts to get the almost one million Latinos in Washington vaccinated.³⁶ The center helped Adios COVID coordinate with partners to reach the Latinx community. The first project was working with the Vaccine Locator Tool team to create an electronic connection (an API) that enabled Adios COVID to text the Latinx community with scheduling information available in the Vaccine Locator Tool. The team also connected the Adios COVID team and Latinx CBOs with vaccine providers who could run pop-up clinics.

In addition, the center worked with the Adios COVID team and the DOH call center vendor (2-1-1) to use the call center for outbound calling and text messaging. Representatives from Microsoft and Schweitzer Engineering Laboratories (SEL) also participated in regular calls with Adios COVID to brainstorm solutions.

Outcome

- Amplified reach into the Latinx community to achieve vaccination uptake.

Lessons Learned - Positive

- Including private-sector partners engaged in vaccination efforts focused on Black, Indigenous, and People of Color (BIPOC) communities in status meetings with Adios COVID was illuminating in a pragmatic way.

³⁶Dr. Leo Morales, professor and chief diversity officer of medicine at the University of Washington Medical School, and Frank Martinez, technologist and school adjunct of the University of Washington Information School founded the group.

Lessons Learned - Challenges

- It would have been better had the VACCS Center been able to engage the DOH collaborative team in partnering with Adios COVID sooner.
- Text messaging for vaccination outreach was a more effective method to reach communities than outbound calling, which was not successful.

D. Advice and Support for Local Health Jurisdictions (LHJ)

Shortly after launch of the center, the secretary of health enlisted a retired local public health jurisdiction leader from Eastern Washington to join the center team. His primary responsibility was surfacing the needs and perspectives of the LHJs and rural communities. Due to his vast experience, familiarity with local context, and reputation, he quickly established trust to elicit candid bi-directional information sharing among DOH, LHJs, and the private sector.

Early in the response, challenges centered around vaccine availability (and type) and the process to request and receive vaccine. As supply increased, even greater focus was placed on socially vulnerable individuals and BIPOC communities where access was limited. This led to greater emphasis on mobile strategies to reach people where they lived and worked.

Throughout the pandemic, the center assisted with and learned from LHJs and private partners. A key private partner was Schweitzer Engineering Laboratories (SEL), which pioneered mass-vaccination strategies in Eastern Washington and shared them with other counties. SEL, community physicians, and medical facilities worked jointly to coordinate in times of limited vaccine availability and then worked to increase phase participation as vaccine became more plentiful.

Outcome

- Coordination and bi-directional knowledge sharing between DOH and LHJs improved. This led to a more context-aware response in allocation challenges, structuring sites, and outreach to achieve efficient and equitable vaccination uptake.

Lessons Learned - Positive

- Having a respected, experienced former head of an Eastern Washington health jurisdiction as the VACCS Center representative established immediate trust with LHJs and other local officials.
- Using a public-private intermediary like the VACCS Center allows open feedback and criticism which may not be directly shared with DOH or the Governor's Office.
- Rapid, coordinated, complete, and direct communication (with underlying data) to various audiences (LHJs, providers, community leaders/influencers, targeted populations, public) is critical to enable partners to plan and respond quickly to changing circumstances.
- Having regular interactions with regional participants (LHJs, providers, CBOs, leaders) is essential to gain critical feedback in a rapidly changing response.
- Using local trusted entities and individuals to be a voice for the response is invaluable as DOH and the Governor's Office may be perceived as removed from local context.
- Ensuring that messaging from the Governor's Office and DOH aligns with context in communities is critical to build confidence and trust.

Lessons Learned - Challenges

- In smaller Washington counties and counties bordering other states, people frequently seek their medical care in a neighboring county or state. The Washington State Immunization Information System (WAIS) reflects where someone lives, not where they receive vaccination. This further complicates and distorts the vaccination counts by DOH. WAIS was not designed to address this issue; WAIS does not have data exchange with neighboring states at this time. Also, in some communities with transient populations, such as college towns, a person may have given their home address, not their college address, so their data would be reflected in another county or state's immunization database.
- Having statewide vaccination phases soon became a burden when smaller, rural counties saturated a given phase participation. Although DOH worked to be flexible, providers in one county decided to move to the next tier before it was opened statewide, resulting in the county having concerns based upon communications from the state about loss of future vaccine allocations per the terms of provider agreement. The unfortunate result in that instance was great hesitation at the county level to maximize vaccine distribution. For future efforts, more communication is encouraged.

E. Procuring Incentives project

The VACCS Center also worked with the private sector and the Governor's Office on incentives, both generally and for the state lottery for COVID-19 vaccinated individuals.

Outcome

- Secured incentives in support of state lottery and encouraged private sector through trade associations to offer incentives.

Lessons Learned - Positive

- Large private-sector companies leaned in to give leadership in providing incentives (e.g., incentives by numerous companies were offered at Mariners home stays beginning in May 2021 and there was broad marketing of these incentives; the Mariners combined this with pop-up vaccination clinics during the home games).

Lessons Learned - Challenges

- There was not coordination between the Governor's Office and the VACCS Center to work with private-sector partners to procure lottery incentives. Although the project came together, it could have been more streamlined had the Governor's Office teamed with the center and DOH.



V. Situational Awareness Workstream Projects

This workstream assessed and recommended improvements to efficient provision of data/information for leaders and others to have effective situational awareness to improve data-driven decision making and planning. The team was comprised of private-sector partners from Microsoft, Kaiser Permanente, and a public health consultant provided by the Bill & Melinda Gates Foundation.

The VACCS Center team (1) inventoried key DOH dashboards; (2) interviewed key players creating, reporting up, and making decisions on the data; (3) identified core data to be used for the next phase of the vaccination effort; and (4) identified core operating environment elements needed to generate situational awareness data in an efficient way. This work resulted in a report of observations and recommendations to DOH leadership and the Governor's Office. The team presented its findings to DOH leadership and the Governor's Office to help inform iteration of the data dashboards for the COVID-19 response, as well as influence the cultural operating environment in DOH and between the Governor's Office and DOH to enhance the great work of the DOH teams building dashboards to present critical data.

Outcome

- A report was made to DOH leadership and the Governor's Office to inform approach to ongoing situational awareness.

Lessons Learned - Positive

- DOH worked with Microsoft early in the pandemic response in 2020 to create dashboards that have been very effective in providing leadership with critical situational awareness.

Lessons Learned - Challenges

- DOH and Governor's Office leadership need to (1) encourage and support epidemiologists to be bolder in identifying trends (connecting the dots of data—telling the critical story); (2) be clearer about the questions it seeks to answer (and less prescriptive about approach to tell the story to empower the DOH team) so that the context is clear for epidemiologists in collecting data and creating the most effective dashboards in the most efficient way, especially given rapid response requirements.
- DOH needs to be strategic about what data is captured, at what quality and cadence, and ask only for what is necessary.
- Dedicated, flexible analysts with capacity are needed to work for the incident commander and deputy secretary for COVID-19 response and with subject matter experts and epidemiologists to compile and surface proactive summaries of the situation and respond to requests for information and data (including connecting the data).

VACCS Center Playbook for a Public-Private Partnership

To aid the rapid formation and startup of a future public-private partnership, attached as Appendix D is the VACCS Center Playbook for a Public-Private Partnership which contains: Start-up checklist, Key Ingredients to Success, and VACCS Center Guiding Principles.



Appendices

APPENDIX A VACCS Center COVID-19 Partnerships

COVID-19 Partnership Status

Vaccine Action Command & Coordination System (VACCS) Center

Progress Update: July_30_2021

Technology & Data

| Activity | Description | Partner(s) | Notes (Outputs) |
|---------------------------------|---|--|--|
| V1 Vaccine Locator Tool | 6 weeks from conception to launch: New Vaccine Locator mobile/web app presenting data from providers surfacing appointment availability with shorter latency and appointment availability in an easy-to-use format. | Prota Ventures, Microsoft, Starbucks, COVIDWA, Expedia | -Hits: Over 2.4 million unique users. -38 languages. -6 accessibility settings. -70% click-through rate to vaccine provider scheduling sites. -Vaccine type availability. -Showcased on a call with federal government and numerous states discussing how to create and improve electronic connectivity to provider scheduling information. |
| V2 Vaccine allocation workbook | Improvements to the vaccine allocation process through technical and design enhancements to the Excel allocation workbook used for weekly allocations by DOH. | Microsoft | -Decreased 48-hour process to 16 hours; team completing weekly state allocation process by surpassing DOH goal of 8:00 p.m. completion (by 5:00 p.m.). -Developed tools for DOH weekly supply allocation. -Included developing new vaccine ordering tools for the 39 local health jurisdictions to aid DOH in deciding on allocations and placing weekly orders with the federal government for all the providers. |
| V3 2-1-1 call center and Amazon | 2-1-1 call center vendor, DOH, and Amazon collaborated seamlessly to add the power of Amazon Connect including: chatbot, web bot, and tier-2 white glove agents to our 2-1-1 call center. | 211, Amazon, Aspen | -Processed over 500,000 calls. -Over 42,000 vaccination appointments booked. -The Wall Street Journal highlighted the innovation of tapping the cloud and technology to support the vaccine rollout: Big Tech Uses Cloud to Facilitate COVID-19 Vaccine Sign-ups - WSJ (April 20, 2021). -Project was highlighted in Amazon's annual report. |

Business Process

| | Activity | Description | Partner(s) | Notes (Outputs) |
|----|--|---|---|---|
| V4 | Optimized vaccination sites of various modalities across the state | Optimized vaccination sites | Amazon, Kaiser Permanente, Microsoft, Providence/Swedish, Schweitzer Engineering Laboratories (SEL) | -Challenge Seattle published playbook. -Other partners published playbooks for various modalities. |
| V5 | Process improvements at state mass vaccination sites | Starbucks user experience/process review and modeling of Clark County mass vaccination site in January 2021. | Starbucks | -Changes implemented based on recommendation (added 3rd lane which increased through-put by 30%). |
| V6 | Process improvements at state mass vaccination sites | Starbucks user experience/process review and modeling of Benton County mass-vaccination site in February 2021. | Starbucks | -Determined that site operating very efficiently (no changes recommended; highlighted that use of PrepMod extremely efficient, strong wayfinding and configuration). |
| V7 | Process improvements at state mass vaccination sites | Starbucks user experience/process review of Yakima mass vaccination site in March 2021. | Starbucks | -Capacity assessed and process improvements implemented. |
| V8 | Hosted a CDC cost and efficiency team visiting Washington to tour our mass-vaccination sites | Starbucks presented their sophisticated approach to logistics and modeling of vaccination sites, and then our Providence/Swedish partners led a tour of the Lumen Field mass-vaccination site in April 2021. | Starbucks, Providence/Swedish, CDC | -The CDC lead spoke glowingly about the Starbucks approach, and after viewing the Lumen Field site said it was the most efficient site they had ever seen in any state. |

Communication Support

| | Activity | Description | Partner(s) | Notes (Outputs) |
|-----|--|--|--|---|
| V9 | Resource guides | Resource guide to CBOs; Resource guide to employers in agriculture food processing and maritime. | Microsoft, Adios COVID, Schweitzer Engineering Laboratories (SEL) | - COVID-19 Vaccine Resource Guide to Support Community-led Vaccination Efforts (PDF) Spanish (PDF) - COVID-19 VACCS Center Vaccination Planning Resource Guide for Employers (PDF) |
| V10 | Playbooks | Vaccination site playbooks | Microsoft, Amazon, Edelman, Challenge Seattle, Starbucks, Schweitzer Engineering Laboratories (SEL), Providence/Swedish, Kaiser Permanente | -Published Challenge Seattle playbook. -Individual partners published other playbooks. |
| V11 | White paper on public-private partnerships | Duke Margolis Health Policy Center white paper | VACCS Center | - Building Public-Private Partnerships to Support Efficient and Equitable COVID-19 Vaccine Distribution -VACCS Center was described as the model and “gold standard” for public-private partnerships. |
| V12 | Various communications activities to support vaccination efforts | -Provide insights, as requested by DOH, to enhance efficacy of upcoming campaigns, especially those to assist in overcoming hesitancy. -Determine if celebrities that private-sector partners can access can be influential in delivering key DOH messages. -CBOs sharing ideas/strategies to mobilize their communities. -LHJs lessons learned and best practices in setting up modalities and surfacing resource needs. | Edelman, Microsoft, Starbucks, Fred Hutchinson Cancer Research Center, Alaska Airlines | |

Equity

| | Activity | Description | Partner(s) | Notes (Outputs) |
|-----|---|--|--|--------------------------------------|
| V13 | Outbound calls with 2-1-1 and Adios COVID | Tacoma-based CBO. | 211, Adios COVID | -3,500 outbound calls/text messages. |
| V14 | Adios COVID (Technology) | API created to VACCS Locator Tool to allow text messaging to Latinx community of available appointments. | COVIDWA, Expedia, Microsoft, Prota Ventures, Starbucks | |
| V15 | Adios COVID | Support for various pop-up clinics to support Latinx community organizations. | Adios COVID | |

Transportation

| | Activity | Description | Partner(s) | Notes (Outputs) |
|-----|-----------------------------|---|--|--|
| V16 | Ridesharing partnerships | Created numerous solutions for free transportation to reduce barriers for Washingtonians. | Uber, Lyft, 2-1-1, Sea Mar (and sister clinics) | -Uber and Lyft: free rides (Sea Mar). -Partnerships with Black, Indigenous and People of Color (BIPOC) community (Adios COVID). |
| V17 | Public transit partnerships | Created numerous solutions for free transportation to reduce barriers for Washingtonians. | Sound Transit, Pierce Transit, Spokane Transit, Valley Transit | -Free mass transit (Sound Transit; Pierce; Spokane; Walla Walla). |

Situational Awareness

| | Activity | Description | Partner(s) | Notes (Outputs) |
|-----|--|---|--|---|
| V18 | Review of dashboards, indicators, and operating environment for efficient situational awareness. | Identified areas of potential improvement to dashboards (and data needs/gaps), potential new indicators, and ideas for general improvement. | Microsoft, Gates Foundation, Kaiser Permanente | -Identified areas of potential improvement to dashboards (and data needs/gaps). -A group of partners inventoried key dashboards and reports used by DOH, the Governor’s Office, and LHJs -Interviewed key DOH and Governor’s Office decision makers to identify core data desired to make smart decisions; make recommendations to DOH leadership and the Governor’s Office on potential enhancements and changes to improve and streamline data reporting to enable effective situational awareness to enhance strategic decision making. |

Supply Logistics and Deployment

| | Activity | Description | Partner(s) | Notes (Outputs) |
|-----|--------------------------------------|--|--|--|
| V19 | Strategy advice on supply and demand | Provide insights and brainstorm with our DOH supply and demand planning colleagues through weekly meetings with DOH. | Gates Foundation, Kaiser Permanente, Starbucks | -Continuous improvement to supply logistics and strategies to achieve uptake of the vaccine. -Included guest presentations on topics and making suggestions for mobile activity enhancements. |

Incentives

| | Activity | Description | Partner(s) | Notes (Outputs) |
|-----|---|--------------------|---|--|
| V20 | Evangelized and collaborated with many private-sector partners to create incentives | | Challenge Seattle partners, AWB, and other partners | -A wide array of private sector incentives (e.g., sports tickets, airline tickets, gaming platforms, and gift cards) to support state vaccine lottery. -\$1 million Department of Commerce grant disbursed to 11 local chambers of commerce for vaccine incentives. |

APPENDIX B

VACCS Center Guiding Principles

During the early launch phase of the VACCS Center, the director outlined guiding principles for how the center should operate to be most effective.

1. Establish trust in all dealings.
2. Do no harm to the ongoing efforts of DOH's pandemic response.
3. Meet others where they are; learn what matters to them. This can help inform how to best meet their needs and bring out the best in our partnerships).
4. Be an honest broker. Even when it is difficult news to share, determine the best method and time to deliver bad news; it very rarely helps in the long-term to avoid addressing challenges head-on. General rule of thumb—deliver bad news in person as soon as possible, not via email/text, etc., which may contribute to misunderstandings.
5. Be as transparent as possible given the relationship. Use transparency wherever possible, recognizing that we need to be very careful in sharing DOH information that is not ready for public sharing, and that the VACCS Center does not decide when information should be made public—the center follows guidance from DOH and the Governor's Office.
6. Be honest about what you know and don't know. People appreciate honesty about one's lack of subject matter expertise or experience. It doesn't help if someone operates beyond one's competency level. It's always better to say, "I don't know; but I can find out," or that you will need support/guidance to achieve success.
7. Recognize/respect swim lanes. Sometimes work will overlap (where this occurs, try to be explicit), but singular lanes are easier to manage and more efficient. In addition, when operating outside one's swim lane, be clear to frame ideas as suggestions so we are respectful but helpful.
8. Practice and encourage constructive candor (both with VACCS Center colleagues and others).
9. Praise publicly, provide constructive feedback privately (avoid shaming, even unintentionally).
10. Have each other's back, both within the VACCS Center and with others wherever possible.
11. No one likes to be surprised. We need to do our best to ensure that no one (colleagues, stakeholders, etc.) is surprised; this is critical to building/nurturing strong, trust-based relationships.
12. Recognize we all make mistakes as human beings. Help prevent each other from tripping and lend a hand to help each other up. Practice the 90/10 rule: spend 10% focusing on addressing/solving the problem that has occurred due a mistake and 90% on continuous learning/best practices to mitigate recurrence of the mistake.
13. The corollary to #13: Own your (and the VACCS Center's) mistakes; don't blame others. As a center, we are trying to do something quite bold and radical, so of course we will not always get it right—it takes risk-taking to innovate and make things happen! We want to be the model for pragmatic innovation and continuous learning/improvement in how we operate and achieve extraordinary things through public-private partnering (including public-private-private partnering).
14. Try to delight all stakeholders who interact with the VACCS Center—all our actions build the center's reputation. Valuable reputations are hard-earned, and easily lost. Building a good reputation is a lot easier than repairing a damaged reputation.

- 15.** Remember the power of the pause. Said another way: Sometimes one needs to go slow to go fast. A third framing of the same essential notion is the Lao Tzu saying: “Muddy water, let stand, becomes clear.”

Especially given the VACCS Center’s goal, which includes “speed” in mass vaccination, one can lose sight of this critical principle. We need to help remind each other when this may apply, but we also need to remember:

- 16.** Perfect is the enemy of the good.
- 17.** In all meetings, take stock in advance of the purpose:

- a.** To inform
- b.** To ideate/solution-provide
- c.** To reach decision

The purpose of the meeting should inform who is present.

- “Inform” meetings: Determine whether a meeting is really the best venue (as opposed to email or other means). For critical and complex topics, meetings can be most effective.
 - “Ideation/solution-providing” meetings: Carefully consider whether we are bringing the right subject matter experts (SMEs) to participate. For example, it very well could be that the most effective solution comes from having a few more perspectives at the table. However, this must be weighed against the materiality of the issue and managing group dynamics (“too many cooks. . .”).
 - “Decision” meetings: Any time private partners meet with DOH colleagues, it is critical to have present the DOH person with the “D” in decision-making authority. Typically, it is good to lay out pros/cons for the decision. Express surfacing of these pros/cons makes for more robust and durable decisions. In addition, wherever possible, key DOH (and perhaps at times Governor’s Office) influentials should be included. One typically sets up a decision for success in implementation when influentials are given advance notice to participate in the decision-making process. Such involvement more likely leads the influential to champion implementing the decision. Also have a plan for communicating the decision (and, where appropriate, the rationale) to all affected stakeholders.
- 18.** Appreciate colleagues/partners. Authentic recognition is one thing that we each have the power to give and often is so much more valuable to receive than you would ever know.

APPENDIX C

VACCS Center Partner List³⁷

| | | |
|--|--|---|
| <i>211</i> | <i>Hyatt (volunteers)</i> | <i>Space Needle</i> |
| <i>Adios COVID/UW Medicine</i> | <i>Kaiser Permanente</i> | <i>Spokane Transit</i> |
| <i>Alaska Airlines</i> | <i>King County, Public Health, Seattle</i> | <i>Starbucks Coffee Company</i> |
| <i>All in WA</i> | <i>Lumedic</i> | <i>STChealth</i> |
| <i>Amazon</i> | <i>Lyft</i> | <i>Swedish Medical Center Seattle</i> |
| <i>Amazon Prime 2020 Covid Concert Organizer</i> | <i>Microsoft Company</i> | <i>T-Mobile</i> |
| <i>Aspen Technology Group Inc.</i> | <i>Moderna</i> | <i>Tri-Cities Hispanic Chamber of Commerce</i> |
| <i>Assoc. of WA Businesses (AWB)</i> | <i>NuWest Healthcare</i> | <i>UBER</i> |
| <i>Bill & Melinda Gates Foundation</i> | <i>OL Reign</i> | <i>UFCW21</i> |
| <i>Carpenters Union</i> | <i>PATH</i> | <i>United Way King County</i> |
| <i>CDC (Center for Disease Control)</i> | <i>Pierce Transit</i> | <i>United Way PNW</i> |
| <i>CDC Foundation</i> | <i>Prota Studios</i> | <i>Vaccine Bookers</i> |
| <i>Center for Design</i> | <i>Prota Ventures</i> | <i>Valley Transit</i> |
| <i>Challenge Seattle</i> | <i>Providence Medical Group</i> | <i>Walmart</i> |
| <i>City of Seattle</i> | <i>Quick'rCare</i> | <i>WA. Department of Commerce</i> |
| <i>Community Connect Labs</i> | <i>Schweitzer Engineering Laboratories (SEL), Inc.</i> | <i>WA. Dept. of Children, Youth, and Families</i> |
| <i>Costco</i> | <i>Sea Mar Community Health Centers</i> | <i>WA. Health Care Authority</i> |
| <i>COVIDWA</i> | <i>Seattle Kraken</i> | <i>WA. Military Dept, Emergency Mgmt. Div.</i> |
| <i>DocuSign</i> | <i>Seattle Mariners</i> | <i>WA. Retail Assoc.</i> |
| <i>Edelman</i> | <i>Seattle Seahawks</i> | <i>WA. Retail Pharmacy Assoc.</i> |
| <i>Expedia</i> | <i>Seattle Sounders FC</i> | <i>Washington Roundtable</i> |
| <i>Fern Expo (Volunteers)</i> | <i>Seattle Storm</i> | <i>Washington State Agency: L&I</i> |
| <i>Fred Hutchinson Cancer Research Center</i> | <i>SEIU Healthcare 1199 NW</i> | <i>WaTech</i> |
| <i>Google</i> | <i>SHI</i> | <i>WSNA (Volunteers)</i> |
| <i>Governor's Office</i> | <i>Sound Transit</i> | <i>YMCA</i> |
| <i>Hopelink</i> | | |

³⁷ In some instances, private sector partners offered to participate but a role was not found.

APPENDIX D

VACCS Center Playbook for Startup of a Public-Private Partnership

Part 1 - Start-Up Checklist

1. Outline goal(s) of PPP—be specific.
2. Ensure sponsorship in both public and private sectors.
3. Determine if volunteer or remuneration participation model. The VACCS Center was an all-volunteer effort. In other circumstances, if there is remuneration, consider principles/rule for level playing field participation (RFPs, other)?
4. Outline rules/principles for engaging both public and private sectors and efficient partnering (e.g., VACCS Center Director acted as interface between public and private sectors; first elicited needs/problem-opportunity statements of the public sector before engaging private sector).
5. Outline PPP center structure.
6. Determine if written agreements needed for participation (e.g., we only used written agreements for software development Vaccine Locator Tool team members).
7. Outline workstreams and projects within workstreams.
8. Identify public and private sector leads for each workstream/project, with public sector lead having decision making authority (this was critical for VACCS since the private sector was supporting the DOH and public sector).
9. Outline PPP center director/leader role.
10. Develop staffing model for PPP center—both director/leader and project manager are essential; in addition, consider what subject matter expertise is needed to be effective (e.g., VACCS Center director had extensive private sector and non-profit global health experience; VACCS Center included experienced professional knowledgeable about local health jurisdictions and needs of rural areas).
11. Develop fit for purpose meeting structure and cadence.
12. Ensure good communications model, including meetings, emails, and reports.
13. Measure performance against stated goals.

Part 2 - Key Ingredients for Success

- Clear goal and concrete objectives.
- Unequivocal ground rule of volunteer/pro bono participation of private partners.
- All partners approached participation with humility and no egos.
- Strong principles of operation to build trust and strong relationships within and across sectors.
- Consistent, coordinated, and frequent communication with and among partners.
- Alignment of interests of the private and public sector (which led to a unified and coordinated public and private sector effort).

- Leadership and sponsorship at senior levels of government (including the governor and secretary of health) and among private-sector partners.
- Center structure with workstreams.
- Emphasis on listening to the needs of the communities and of the various players in the vaccine ecosystem.
- Strong relationship management across the public and private sectors.
- Extraordinary project management across the Center workstreams and projects.
- An “Equity by Design” approach to all efforts.
- Clear DOH decision-making authority and empowerment of workstream leads.
- Teams functioned like skunkworks (mode of operating was independent and clear) to enable nimbleness and fast delivery.

Part 3 - VACCS Center Guiding Principles

During the early launch phase of the VACCS Center, the director outlined guiding principles for how the center should operate to be most effective.

1. Establish trust in all dealings.
2. Do no harm to the ongoing efforts of DOH’s pandemic response.
3. Meet others where they are; learn what matters to them. This can help inform how to best meet their needs and bring out the best in our partnerships.
4. Be an honest broker. Even when it is difficult news to share, determine the best method and time to deliver bad news; it very rarely helps in the long-term to avoid addressing challenges head-on. General rule of thumb—deliver bad news in person as soon as possible, not via email/text, etc., which may contribute to misunderstandings.
5. Be as transparent as possible given the relationship. Use transparency wherever possible, recognizing that we need to be very careful in sharing DOH information that is not ready for public sharing, and that the VACCS Center does not decide when information should be made public—the center follows guidance from DOH and the Governor’s Office.
6. Be honest about what you know and don’t know. People appreciate honesty about one’s lack of subject matter expertise or experience. It doesn’t help if someone operates beyond one’s competency level. It’s always better to say, “I don’t know; but I can find out,” or that you will need support/guidance to achieve success.
7. Recognize/respect swim lanes. Sometimes work will overlap (where this occurs, try to be explicit), but singular lanes are easier to manage and more efficient. In addition, when operating outside one’s swim lane, be clear to frame ideas as suggestions so we are respectful but helpful.
8. Practice and encourage constructive candor (both with VACCS Center colleagues and others).
9. Praise publicly, provide constructive feedback privately (avoid shaming, even unintentionally).
10. Have each other’s back, both within the VACCS Center and with others wherever possible.
11. No one likes to be surprised. We need to do our best to ensure that no one (colleagues, stakeholders, etc.) is surprised; this is critical to building/nurturing strong, trust-based relationships.

12. Recognize we all make mistakes as human beings. Help prevent each other from tripping and lend a hand to help each other up. Practice the 90/10 rule: spend 10% focusing on addressing/solving the problem that has occurred due a mistake and 90% on continuous learning/best practices to mitigate recurrence of the mistake.
13. The corollary to #12: Own your (and the VACCS Center's) mistakes; don't blame others. As a center, we are trying to do something quite bold and radical, so of course we will not always get it right—it takes risk-taking to innovate and make things happen! We want to be the model for pragmatic innovation and continuous learning/improvement in how we operate and achieve extraordinary things through public-private partnering (including public-private-private partnering).
14. Try to delight all stakeholders who interact with the VACCS Center—all our actions build the center's reputation. Valuable reputations are hard-earned, and easily lost. Building reputation is a lot easier than repairing a damaged reputation.
15. Remember the power of the pause. Said another way: Sometimes one needs to go slow to go fast. A third framing of the same essential notion is the Lao Tzu saying: "Muddy water, let stand, becomes clear."

Especially given the VACCS Center's goal, which includes "speed" in mass vaccination, one can lose sight of this critical principle. We need to help remind each other when this may apply, but we also need to remember:

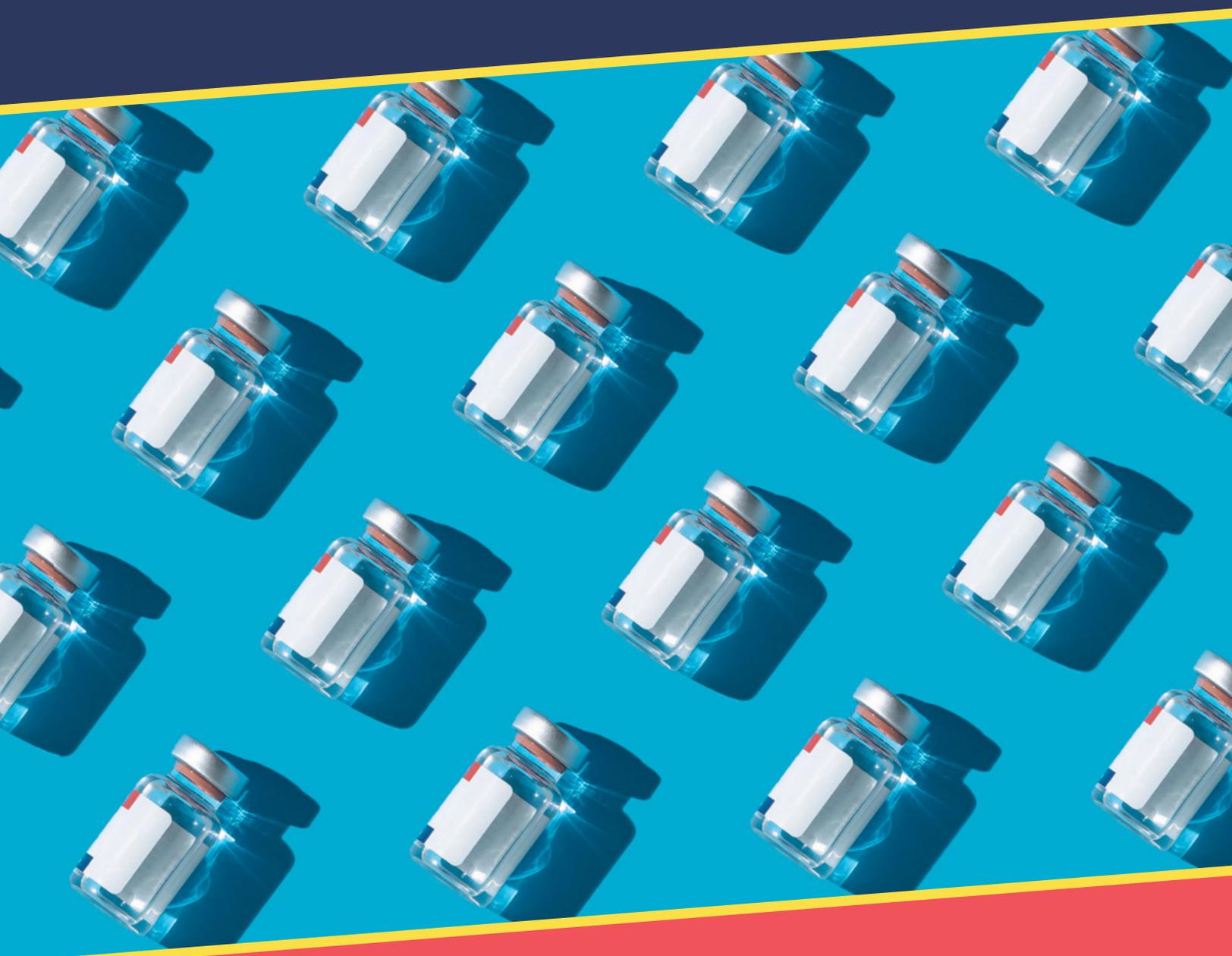
16. Perfect is the enemy of the good.
17. In all meetings, take stock in advance of the purpose:
 - a. To inform
 - b. To ideate/solution-provide
 - c. To reach decision

The purpose of the meeting should inform who is present.

- "Inform" meetings: Determine whether a meeting is really the best venue (as opposed to email or other means). For critical and complex topics, meetings can be most effective.
 - "Ideation/solution-providing" meetings: Carefully consider whether we are bringing the right subject matter experts (SMEs) to participate. For example, it very well could be that the most effective solution comes from having a few more perspectives at the table. However, this must be weighed against the materiality of the issue and managing group dynamics ("too many cooks. . .").
 - "Decision" meetings: Any time private partners meet with DOH colleagues, it is critical to have present the DOH person with the "D" in decision-making authority. Typically, it is good to lay out pros/cons for the decision. Express surfacing of these pros/cons makes for more robust and durable decisions. In addition, wherever possible, key DOH (and perhaps at times Governor's Office) influentials should be included. One typically sets up a decision for success in implementation when influentials are given advance notice to participate in the decision-making process. Such involvement more likely leads the influential to champion implementing the decision. Also have a plan for communicating the decision (and, where appropriate, the rationale) to all affected stakeholders.
18. Appreciate colleagues/partners. Authentic recognition is one thing that we each have the power to give and often is so much more valuable to receive than you would ever know.

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