

# CREATING TOMORROW'S HEALTH

## *Innovation and Partnership: COVID-19 Exposure Notifications in Washington State*

Session 124, March 13, 2024



Dr. Umair A. Shah, Secretary of Health, Washington State Department of Health  
Les Becker, Chief of Innovation & Technology, Washington State Department of Health  
Dr. Bryant T. Karras, Chief Medical Informatics Officer, Washington State Department of Health



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**HIMSS**® 24

March 11-15 | Orlando

# *Meet Our Speakers*



**Les Becker, MBA**

*Chief of Innovation and Technology  
Washington State  
Department of Health*



**Umair A. Shah, MD, MPH**

*Secretary of Health  
Washington*



**Bryant T. Karras, MD, FACMI**

*Chief Medical Informatics Officer  
Washington State  
Department of Health*

## *Conflict of Interest Slide*

- Umair A. Shah, MD, MPH
- Les Becker, MBA
- Bryant T. Karras, MD, FACMI

Has no real or apparent conflicts of interest to report.

# *Agenda*

- Washington State Department of Health's commitment to health for all
- Importance of Partnerships during the COVID-19 response
- Transformational Plan: A Vision for Health in Washington State
- WA Notify Exposure Notifications
- Lessons learned and future vision

# *Learning Objectives*

1. Overview Washington State's **Transformational Plan** and cornerstone values of Equity, Innovation, and Engagement, and describe how innovative technology plays a role in the vision of health for all in Washington state
2. Describe Washington State's **WA Notify** exposure notification system and its use as a non-pharmaceutical intervention during the COVID-19 pandemic
3. Discuss key public-private-academic **partnerships** that played a role in WA Notify's success in Washington state
4. Provide examples of how **innovation and collaboration** can transform the public health outbreak response paradigm

# *Presenter*



**Umair A. Shah, MD, MPH**

*Secretary of Health  
Washington*

- Population – nearly 8 million
  - 13<sup>th</sup> most populous state
- Area – 71,362 square miles
  - 18<sup>th</sup> largest state
- 29 Federally Recognized Tribes
- 35 Local Health Departments
  - (39 Counties)
- 500,000 licensed health care professionals
- Nearly 100 hospitals





*Health*  
*Where Equity,*  
*Innovation and*  
*Engagement meet*

# *#InvisibilityCrisis*

Three V's of Public Health

Visibility

Value

Validation

*Offensive Line*





Office of the Secretary of Health  
**Umair A. Shah, MD, MPH**  
 Secretary of Health



## Executive Leadership Team Office & Functions

January 2024

Office of Chief of Staff	Office of Innovation & Technology	Office of Prevention, Safety & Health	Office of Strategic Partnership	Office of Health & Science	Office of Public Affairs & Equity	Office of Policy, Planning & Evaluation	Office of Resilience & Health Security
Jessica Todorovich	Les Becker	Lacy Fehrenbach	Kris Holiday	Tao Sheng Kwan-Gett	Elizabeth Perez	Kristin Peterson	Nate Weed



- Team of 3000 PH Professionals
- \$3.2 Billion operating budget
- Over 600 Public=Private - Academic Partnerships
- Cornerstone Values
  - Equity
  - Innovation
  - Engagement

# Re-Imagining COVID-19 Response

- Care-A-Van
- Vaccine Action Command & Coordination System (VACCS) Center
- Vaccine Implementation Collaboratives (VICs)
- WA Notify App
- WA Verify App
- Power of Providers (POP)
- Say Yes! COVID Test



# Transactional Health



*Transformational Health*



**CORNERSTONE VALUES:** EQUITY • INNOVATION • ENGAGEMENT  
**VISION:** EQUITY AND OPTIMAL HEALTH FOR ALL



### OUR PRIORITIES AND VISION FOR TRANSFORMATIONAL HEALTH



#### I. HEALTH AND WELLNESS

All Washingtonians have the opportunity to attain their full potential of physical, mental, and social health and well-being.



#### II. HEALTH SYSTEMS AND WORKFORCE TRANSFORMATION

All Washingtonians are well served by a health ecosystem that is robust and responsive, while promoting transparency, equity, and trust.



#### III. ENVIRONMENTAL HEALTH

All Washingtonians will thrive in a broad range of healthy environments — natural, built, and social.



#### IV. EMERGENCY RESPONSE AND RESILIENCE

All Washington communities have the information and resources they need to build resilience in the face of myriad public health threats and are well-positioned to prepare for, respond to, and recover from emergencies and natural disasters.



#### V. GLOBAL AND ONE HEALTH

All Washingtonians live in ever-connected environments that recognize and leverage the intersection of both global and domestic health as well as the connections of humans, animals, and the environment.

### TRANSFORMATIONS IN ACTION



INNOVATION AND TECHNOLOGY



COMMUNITY CENTERED



VISIBILITY AND VALUE



EQUITY DRIVEN



COLLABORATIVE ENGAGEMENT

**CORNERSTONE VALUES:** EQUITY • INNOVATION • ENGAGEMENT  
**VISION:** EQUITY AND OPTIMAL HEALTH FOR ALL



## PRIORITY II. HEALTH SYSTEMS AND WORKFORCE TRANSFORMATION

**VISION**  
*All Washingtonians are well served by a health ecosystem that is robust and responsive, while promoting transparency, equity, and trust.*

**COMMITMENT**  
We will align skills, resources, and partnerships to ensure our health systems and infrastructure capabilities are scalable, responsive, and modernized to promote data driven and innovative approaches to improving health. We will build and transform our systems to be accessible and responsive to Washingtonians regardless of who they are or where they live.

- KEY STRATEGIES**
1. **Invest in and support** secure and innovative health information technologies and infrastructure supports that will enable partners to access and exchange information that addresses whole person health in a culturally and linguistically respectful way.
  2. **Ensure** our public health, health care, and community-based partners and their workforce have the data, technology, and system supports they need to build and utilize connections among health, social, and community initiatives.
  3. **Champion** the recruitment, development, and retention of a strong, capable, and diverse and inclusive state, local, and Tribal public health workforce and further policies and efforts that support, invest in, and diversify our health system workforce.
  4. **Strengthen** the collection, analysis, linkage, and dissemination of timely, accessible, and actionable health data, guided by community priorities, to inform better community level interventions and initiatives that improve both individual and population health.
  5. **Co-create** robust data sharing capabilities and systems with local health jurisdictions, with Tribes honoring Tribal data sovereignty, and other stakeholders to support better detection, understanding, and addressing of the burden of disease and health inequities.
  6. **Invest in and leverage** previously developed tools, technologies, and strategies, including newer ones utilized during the COVID-19 pandemic such as interactive dashboards, communications pathways, and geospatial mapping to assist individuals, communities, health systems, and policy makers, to make data-informed decisions to promote health.



DOH TRANSFORMATIONAL PLAN: A VISION FOR HEALTH IN WASHINGTON STATE | 4



## PRIORITY I. HEALTH AND WELLNESS

**VISION**  
*All Washingtonians have the opportunity to attain their full potential of physical, mental, and social health and well-being.*

**COMMITMENT**  
We will lead initiatives that support and promote upstream prevention efforts to advance optimal physical health, mental and behavioral health, spiritual health, resilience, and overall well-being where individuals, families, and communities can thrive. Our actions recognize that social, structural, and economic determinants of health must be addressed to achieve true health equity and optimal health for all.

- KEY STRATEGIES**
1. **Promote** a broad range of initiatives that support pro-health and wellness behaviors and actions related to physical activity, nutritional health, mental and behavioral health, emotional and spiritual health, and comprehensive holistic health to advance both individual and community health across all of Washington.
  2. **Support** community rooted and informed initiatives that address conditions early, including for adverse childhood experiences, and throughout the life course, to improve health and well-being longer term.
  3. **Advance** a continuum of prevention and harm reduction strategies that address common risk and protective factors associated with injuries as well as use of alcohol, tobacco, marijuana, opioids, and other substances and related behaviors.
  4. **Engage** partners and people with lived experience and embrace multisector strategies to address upstream factors that contribute to the impact on key health concerns such as chronic disease, addiction, injuries, and the like.
  5. **Utilize** morbidity and mortality data and strategies to inform action-oriented prevention programs and policy recommendations that address disproportionality in health outcomes.
  6. **Deploy** proactive communication and health promotion strategies that promote mental and physical health wellness while countering stigma in seeking care.



DOH TRANSFORMATIONAL PLAN: A VISION FOR HEALTH IN WASHINGTON STATE | 3

## PRIORITY III. ENVIRONMENTAL AND OCCUPATIONAL HEALTH

**VISION**  
*All Washingtonians live in a healthy environment.*

**COMMITMENT**  
We will lead broad efforts to recognize the interrelationship between environmental and occupational health and environmental justice for community health.

- KEY STRATEGIES**
1. **Support** systems, community health, and environmental justice principles with the goal of reducing health inequities and promoting community well-being.
  2. **Ensure** our policies, planning, and programming incorporate environmental justice principles with the goal of reducing health inequities and promoting community well-being.
  3. **Incorporate** data-driven approaches and community engagement strategies, assets and strengths, into public health and response planning efforts aimed at building resilience against the health and social impacts of climate change and other environmental challenges.
  4. **Ensure** communities likely to bear the worst climate-related and environmental health impacts have resources and support to foster resilient communities that promote true health and well-being.
  5. **Support** initiatives that promote safe and active living, commuting and recreation, reduce greenhouse gas emissions, and increase community cohesion.
  6. **Communicate and promote** the health benefits of behavior change and interventions that protect our environment, while ensuring equitable access to health opportunities through robust data systems and information sharing.



DOH TRANSFORMATIONAL PLAN: A VISION FOR HEALTH IN WASHINGTON STATE | 5

## PRIORITY IV. COMMUNITY RESPONSE AND RESILIENCE

**VISION**  
*All Washingtonians have the information and resources to build resilience in the face of hazards and are well-prepared to respond to and recover from disasters.*

**COMMITMENT**  
We will lead efforts to build resilience in the face of health threats and disasters. We will ensure that our response, recovery, and resilience efforts are effective, and that we have the information and resources to build resilience in the face of hazards and disasters. Our efforts will learn from past disasters to build resilient communities.

- KEY STRATEGIES**
1. **Ensure** that all Washingtonians have the information and resources to build resilience in the face of hazards and disasters. Our efforts will learn from past disasters to build resilient communities.
  2. **Collaborate** with a myriad of community-rooted organizations, disaster response and recovery partners, and interagency partners to develop, share, and act upon key information in culturally and linguistically appropriate ways related to hazards and emergencies.
  3. **Recruit, develop, train, and retain** a robust and capable workforce prepared to respond in an emergency and institute planning initiatives to support response personnel in disaster response and recovery efforts integrating models of excellence and infrastructure advancements from a broad range of emergencies including the COVID-19 pandemic.
  4. **Seek** flexible and sustainable funding opportunities to invest in activities that support robust response activities, workforce, tools, and the communities we serve and that allow for scarce resources to be equitably allocated.
  5. **Support and prioritize** community-led solutions to mitigate barriers to optimal outcomes, survival, and resilience for all communities especially those most at-risk through a broad range of community engagement and response initiatives.
  6. **Ensure** resilience and behavioral health promotion planning and implementation efforts are key components of current and future response activities serving community members, partners, and responders alike.



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## PRIORITY V. GLOBAL AND ONE HEALTH

**VISION**  
*All Washingtonians live in ever-connected environments that recognize and leverage the intersection of both global and domestic health as well as the connections of humans, animals, and the environment.*

**COMMITMENT**  
We will lead the development and implementation of creative solutions to improve the health and well-being of Washingtonians emphasizing the interconnectedness of a strong bidirectional global-domestic health ecosystem. It will simultaneously underscore the importance of One Health recognizing the relationships of human health as they intertwine with that of animals and the environment.

- KEY STRATEGIES**
1. **Incorporate** best practices from beyond borders to advance the health and well-being of Washingtonians and the communities in which they live through strong bidirectional pathways for advancing partnerships, key planning strategies, and communications efforts.
  2. **Leverage** the collective strength and wisdom of existing and emerging global health and One Health stakeholders and institutions within and beyond Washington state to participate in and support robust and connected networks of information sharing, strategy development, and engagement.
  3. **Seek** resources and funding as well as partnership opportunities to enhance capabilities across health systems to ensure a globally connected community of partners with particular emphasis on mentorship and training opportunities, system and technology enhancements, and engagement pathways to address domestic issues through global health learning.
  4. **Advance** timely, culturally, and linguistically respectful health information and initiatives, in partnership with health system providers and communities, to support the health and well-being of refugee, immigrant, and migrant communities across Washington.
  5. **Emphasize** the complex connections of human, animal, and environmental health in our health promotion activities and expand our capacity to prevent, detect, and respond to global public health threats with domestic health impact whether infectious disease or otherwise.
  6. **Further and support** our important role in binational relations and connectedness with health partners and other key entities in Canada and beyond to advance information sharing, health systems knowledge, and strategy development.



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# Health Systems and Workforce Transformation



## PRIORITY II. HEALTH SYSTEMS AND WORKFORCE TRANSFORMATION

<p><b>VISION</b></p> <p><b>COMMITMENT</b></p> <p><b>KEY STRATEGIES</b></p>	<p><i>All Washingtonians are well served by a health ecosystem that is robust and responsive, while promoting transparency, equity, and trust.</i></p> <p>We will align skills, resources, and partnerships to ensure our health systems and infrastructure capabilities are scalable, responsive, and modernized to promote data driven and innovative approaches to improving health. We will build and transform our systems to be accessible and responsive to Washingtonians regardless of who they are or where they live.</p>	<div style="background-color: #ff9900; color: white; padding: 5px; text-align: center; font-weight: bold;">MODERNIZING DATA ACCESS</div>
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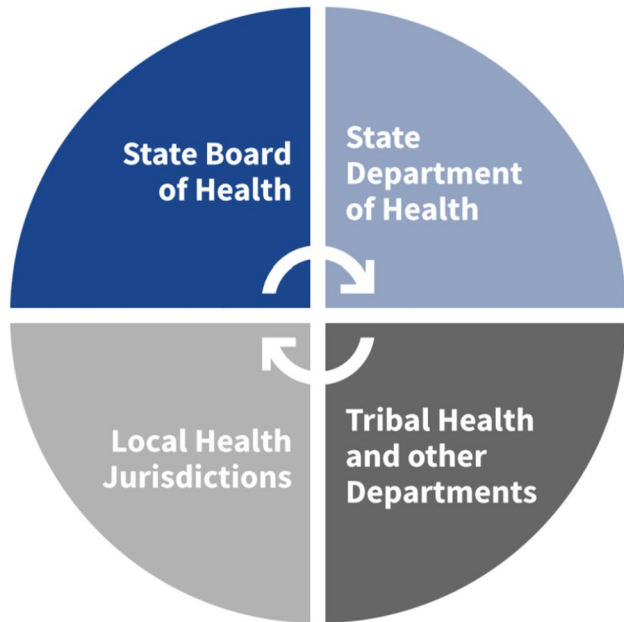
1. **Invest in and support** secure and innovative health information technologies and infrastructure supports that will enable partners to access and exchange information that addresses whole person health in a culturally and linguistically respectful way.
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4. **Strengthen** the collection, analysis, linkage, and dissemination of timely, accessible, and actionable health data, guided by community priorities, to inform better community level interventions and initiatives that improve both individual and population health.
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# Investing in Health Infrastructure

## GOVERNMENTAL PUBLIC HEALTH SYSTEM



## Agency Request Legislation — 2019

### Foundational Public Health Services (FPHS)

HB 1497  
SB 5732

Foundational Public Health Services (FPHS) are services uniquely provided by government and on which the public depends for healthy and economically vital communities. In 2018, the Department of Health, State Board of Health, local health jurisdictions, Sovereign Tribal Nations and Indian health programs completed an assessment that produced an estimate of what the state would need to provide to fully fund foundational public health services as they are delivered today. That estimate is \$450 million/biennium.



### Foundational Public Health Services

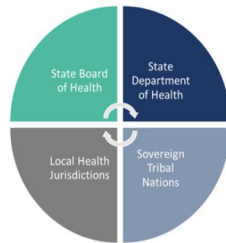
Healthy. Vital. Everyone. Everywhere.

health, the cross-cutting capabilities that support them, and assessment, the estimate comes to \$296 million/biennium. Examples of services potentially covered by these dollars include:

- Innovative approaches to service delivery like the Washington State Tuberculosis Collaborative Network and other models that make best use of limited public health resources and workforce.
- Keeping kids safe by working with providers to test more at-risk kids for lead exposure, and partnering with other state and local agencies to find and replace any fixtures leaching lead into school drinking water.
- Helping growing counties across the state keep up with communicable disease cases by streamlining disease investigations and improving follow-up times.

Foundational Public Health Services received an allocation of \$22 million/biennium in the Governor's budget for 2019-2021.

### Governmental Public Health System



When looking at the gap for a subset of Foundational Public Health Services that includes critical work in communicable disease control, environmental public

## Local Health Jurisdictions

Historically, a combination of local, state, and federal resources has financed services provided by local health jurisdictions. These include:

- Local funds: county general funds, licenses, permits, and fees for services
- State funds: contracts for specific programs, flexible funds to meet local needs, and reimbursement for performing specific services (i.e., Medicaid reimbursement)
- Federal funds: contracts for specific programs and reimbursement for performing specific services (most of this funding is passed through the state Department of Health)
- Other funding—such as federal or private grants

The mix of these funds and the conditions attached to their use have changed over time.

## Local Health Jurisdictions Funding Information Resources

- [Consolidated Contracts](#) - Activity logs, billing instructions, forms, reports, and program information.
- [Budgeting, Accounting and Reporting System \(BARS\)](#)
- [Background of Local Public Health Funding in Washington State \(2008 PHIP, Appendix 2\)](#)
- [Preventive Health and Health Services Block Grant](#) - Federal financial support for the Healthy Communities Program, sexual assault support services and public health outreach efforts.
- [Maternal and Child Health Block Grant](#)
- [Puget Sound Local Management Plan Funding](#) - Source of public health monies provided by the state legislature to 12 Puget Sound LHJs to implement on-site sewage system management plans as required by [Chapter 70.118A RCW](#).

# Importance of Strategic Partnerships



*& Leading with Equity*

# Investing in Systems Partners & Data Driving Action

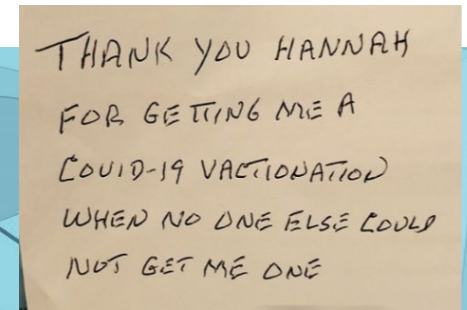
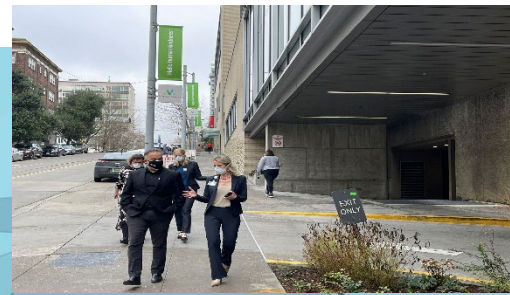


...ington, nuestra Caravana de salud sobre ruedas está e...  
...ifique si estaremos en su área para obtener su vacuna g...

**August 13** | **Pasifika Food NETWORK**  
**1 - 6 PM** | **5700 E. 18th St.**  
**Vancouver**



# Investing in Community ... in This Together!



# *WA Notify Use and Impact*

Between November 30, 2020 and May 11, 2023:

- **Over 4 million cumulative activations**
- **Over 235,000 positive COVID -19 cases confirmed in WA Notify**
- **Over 2.5 million exposure notifications generated**
  - 45% generated within 3 days of exposure
  - 82% generated within 6 days of exposure



# *Presenter*



**Bryant T. Karras, MD, FACMI**  
*Chief Medical Informatics Officer  
Washington State  
Department of Health*

A close-up photograph of a person's hands holding a black smartphone. The person has long, wavy blonde hair and is wearing a white top. The background is a bright, out-of-focus view of a green landscape, possibly a field or park, seen through a window. A large blue circular graphic is overlaid on the left side of the image, containing the text.

# *WA Notify*

Exposure Notifications

# WA Notify Team



**Bryant T. Karras**  
**MD, FACMI**  
*Chief Medical  
Informatics Officer*



**Amanda Higgins,**  
**MSHI**  
*Epidemiologist*



**Laura West, MS**  
*Public Health  
Informatics Specialist*



**Molly McKinney,**  
**RN, MS**  
*Epidemiologist*



**Janet Baseman, PhD, MPH**  
*Associate Dean, Professor*



**William Lober, MD, MS**  
*Director, Professor*



**Chris Baumgartner**  
*Deputy Chief Informatics  
Officer*



**Ravi Kafle,**  
**MBBS, MSPH**  
*Senior Informatics  
Architect*



**Sophia Cantor,**  
**MPH**  
*CSTE Informatics Fellow*



**Brittany Onye,**  
**MS**  
*CSTE Informatics Fellow*



**Maggie Dorr,**  
**MPH**  
*FHIR Informatics Specialist*



**Adam Elder, PhD**  
*Postdoc Scholar*



**Sierramatice Karras**  
*UI/UX Designer*

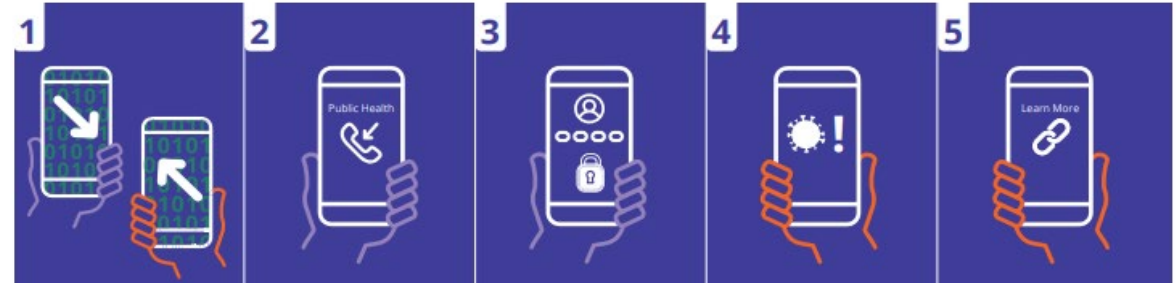


**Daniel Lorigan**  
*Software Engineer*



# WA Notify Exposure Notifications

- Free tool for smartphones using Bluetooth technology to alert users of exposure.
- Anonymous and privacy-preserving.
- Reaches unknown contacts.
- Scalable to handle surges in case volumes.
- Interoperable with other states' systems.
- New way of engaging with the public and providing public health guidance.



# *Public-Private-Academic Partnerships*



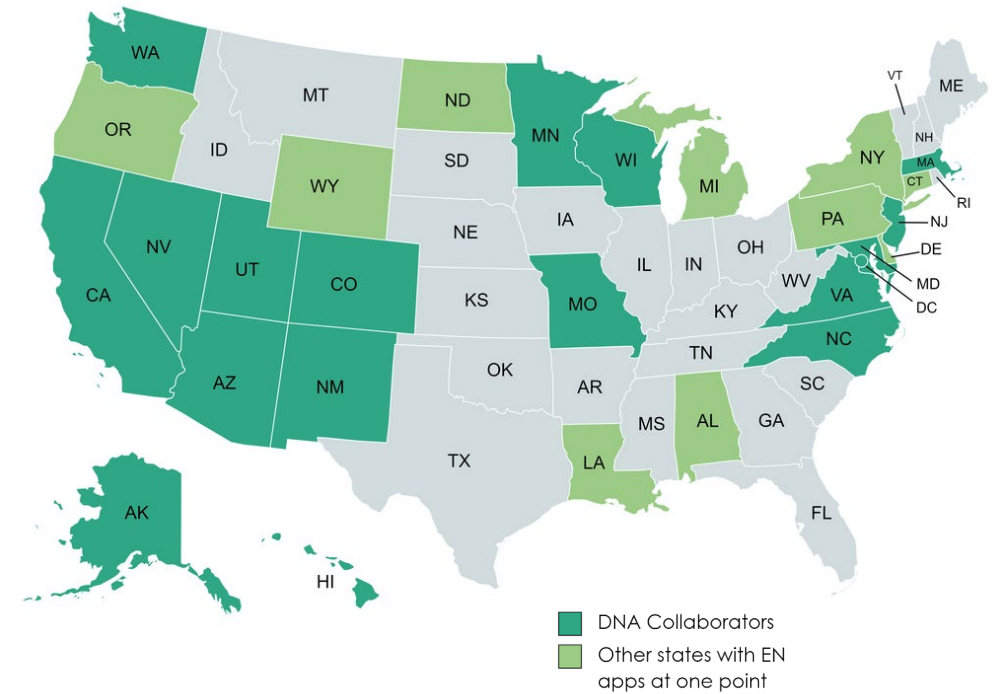
# Advisory Committee



# Multi-State Collaboration

Digital Exposure Notification Express Alliance (DNA) – 17 states + District of Columbia

<https://dna-enx.org>



# Privacy-Preserving Framework

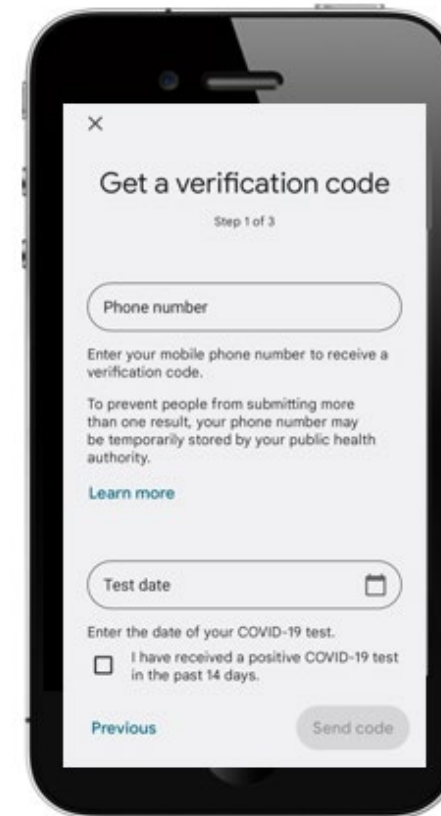
Includes secure, essential services distributed across multiple collaborators:

- Google
- Apple
- APHL
- Microsoft
- AWS
- MITRE
- Internet Security Research Group (ISRG)
- National Institutes of Health (NIH)

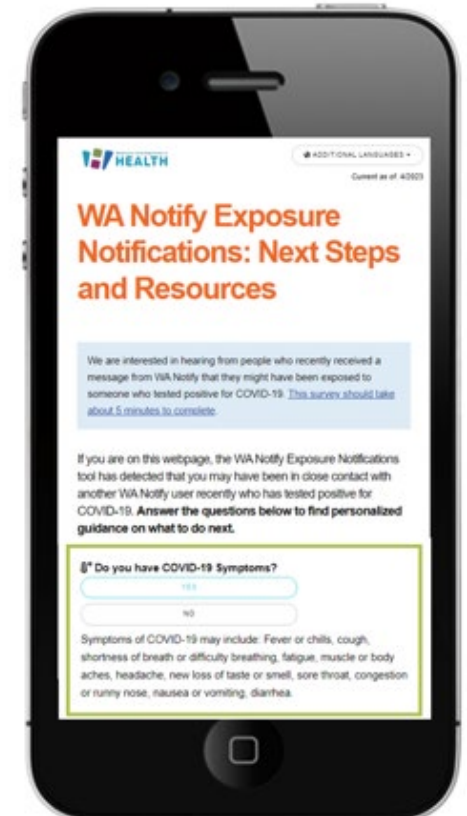


# Innovative System Enhancements

- **Adoption**
  - Availability alert notifications with install links
- **Code Distribution**
  - API integration with result reporting pipelines
  - SMS intercept
  - Self-requested codes for at-home tests
- **Evaluation**
  - Additional opt-in, privacy-preserving, analytic data
- **Accessibility**
  - Webpage translations in 46 languages
  - “Deep link” QR codes
  - Interactive, mobile-friendly webpages with automatic browser language detection



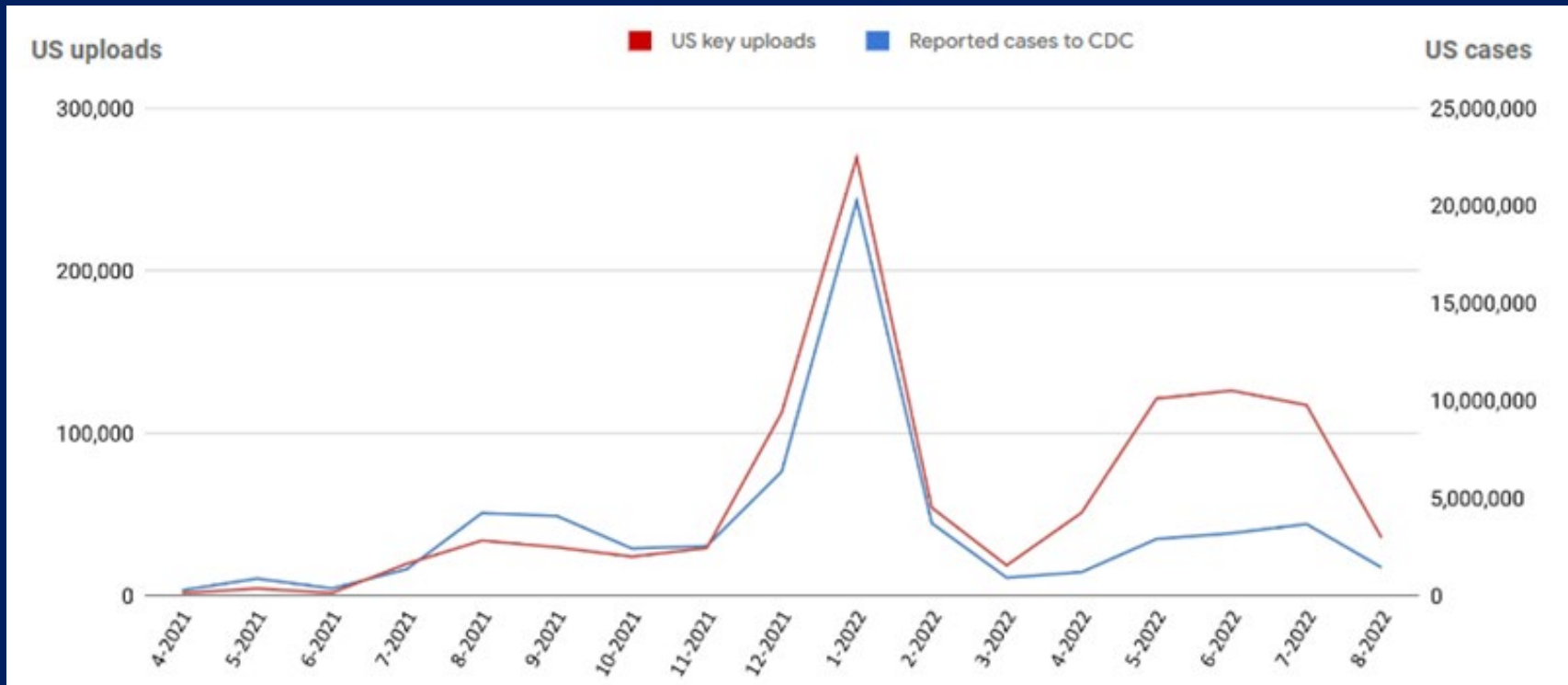
Self-requested codes



EN Webpage



# EN Usage in the Home Test Era

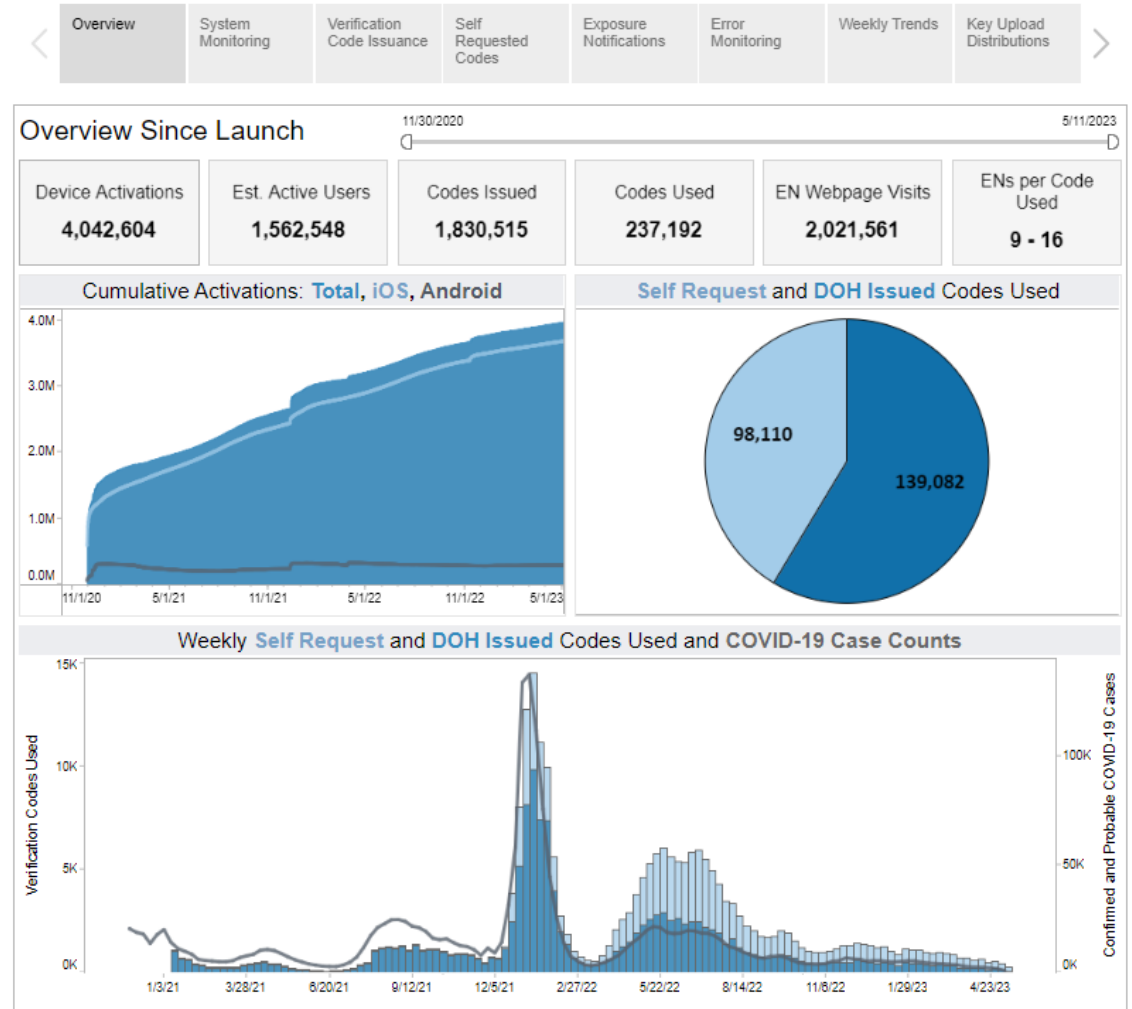


2<sup>nd</sup> highest peak in US EN usage: May-July 2022

# Dashboard Metrics

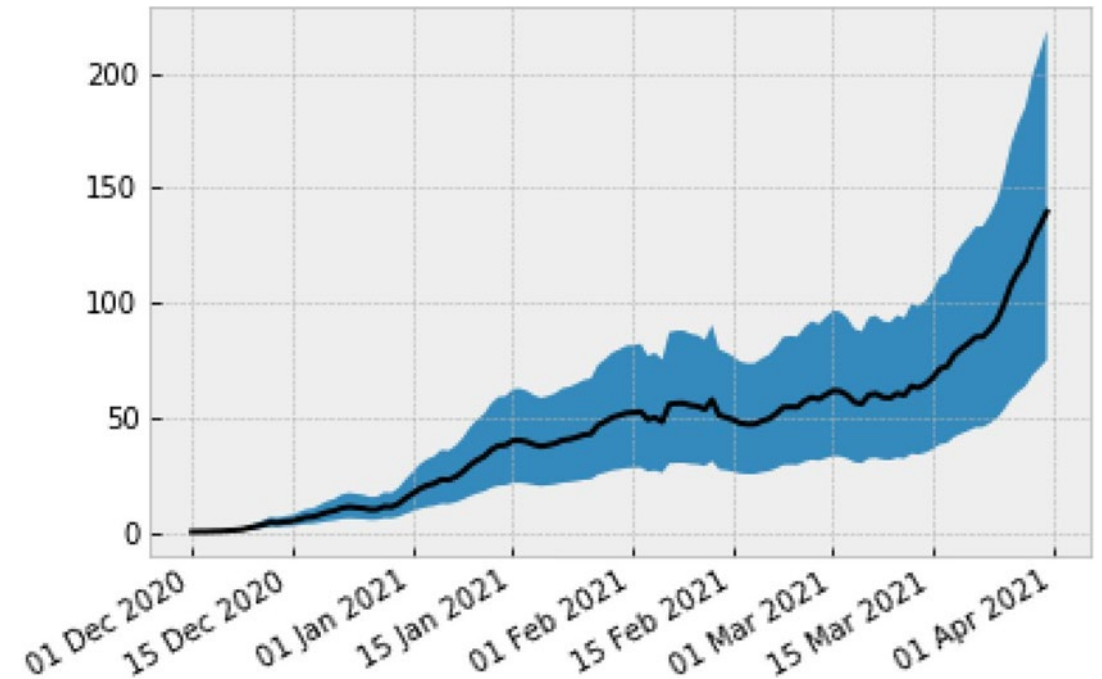
- Internal WA Notify dashboard used for system monitoring and visualization of trends and changes with the system

## WA Notify COVID-19 Exposure Notifications



# Estimating Cases Averted

- University of Washington analysis on **first four months of use** (November 30, 2020 through March 31, 2021), estimated:
  - **34,500 Exposure Notifications Generated**
  - **5,500 COVID-19 cases averted**
- Updated analysis for one year period in progress



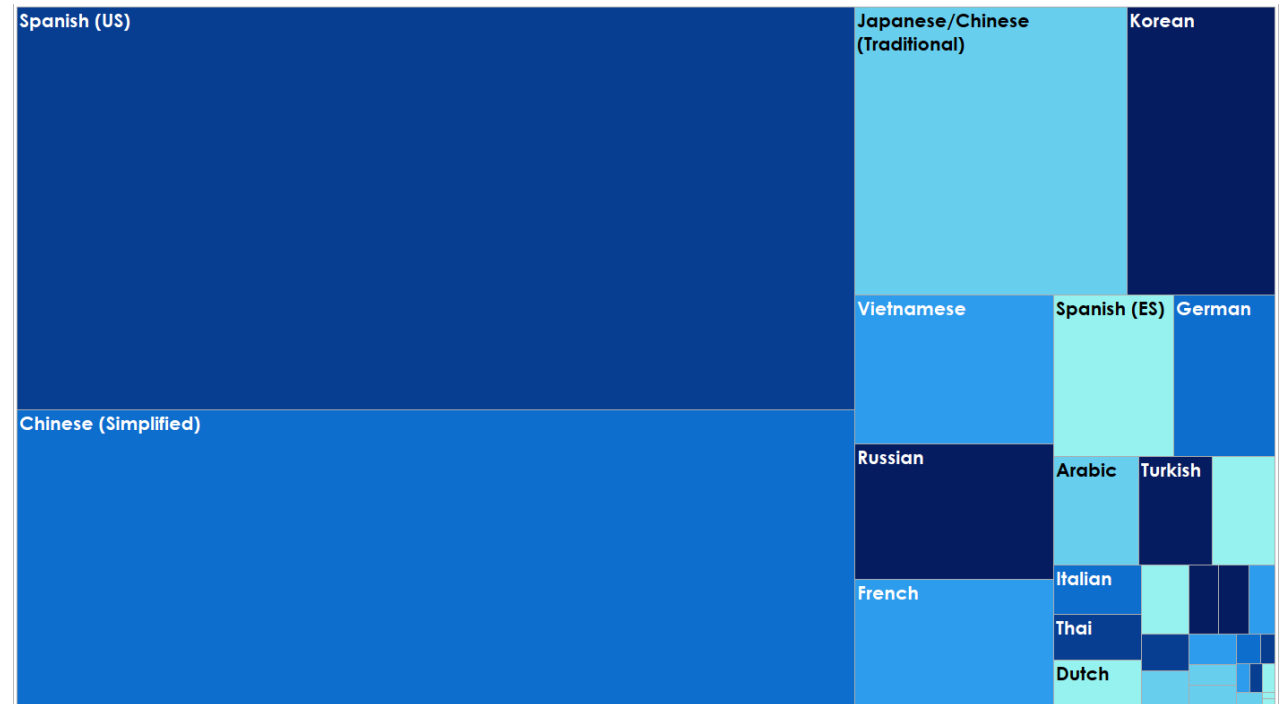
Sensitivity Analysis:

COVID-19 Cases Averted per day in Washington State

<https://www.medrxiv.org/content/10.1101/2021.06.04.21257951>

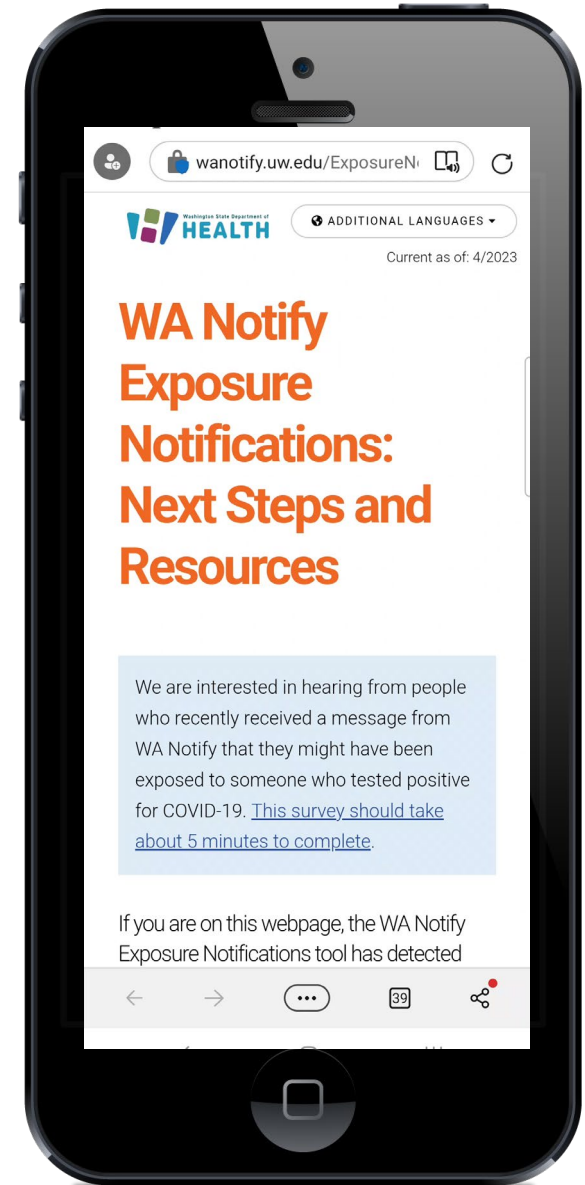
# Multi-Language Translations

- WA Notify app is available in English + 32 languages
- Webpage content and guidance is available in English + 46 languages
- YouTube videos, posters, and social media graphics available in English + 36 languages
- User surveys available in English + 7 languages
- DOH social media content regularly posted in English + Spanish



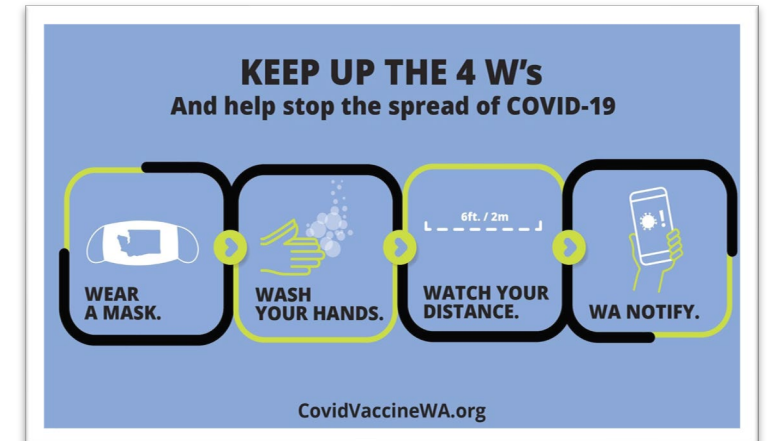
# *Interactive & Mobile-Friendly*

- Automatic browser language detection
- Tailored guidance based on the presence of symptoms and specific congregate settings
- Links to DOH post-exposure guidance, treatment options, and resources



# Public Communications

- Award-winning promotional materials in multiple languages available in the WA Notify Partner Toolkit
- Translations shared with other public health agencies



# Award Recognition

- WA Notify has been awarded with:
  - Public Relations Society of America **Silver Anvil Award** for one of the best strategic public relations campaigns, as well as outstanding organizational excellence.
  - **Granicus Digital Government Award**: 2<sup>nd</sup> place in Digital Transformation category.
  - **Northwest Regional Emmy Awards**, as part of the Washington State Department of Health and C+C's *Spread the Facts: COVID-19* Public Service Announcement.
  - **HIMSS Davies Award of Excellence.**
  - **HIMSS 2023 Change Maker**



# Cornerstone Values



## Equity

- App and public health guidance webpage available in 30+ languages
- Focus on accessibility



## Innovation

- Novel analytic modeling techniques
- Technical and user-experience enhancements
- Privacy-preserving framework



## Engagement

- Collaboration with peers on implementation
- Community partners
- User-feedback surveys
- Public-private-academic partnerships

# *Presenter*



*Les Becker, MBA*

*Chief of Innovation and Technology  
Washington State  
Department of Health*

# *Looking Ahead*



Exploring potential to expand EN and related technologies



Refining methodologies to measure impact



Distilling lessons learned for national policy and planning



# Office of Innovation and Technology



**Executive Office of Innovation & Technology (OIT)**  
**Les Becker**  
Chief of Innovation and Technology





**Bryant Karras**  
Special Advisor, CMIO

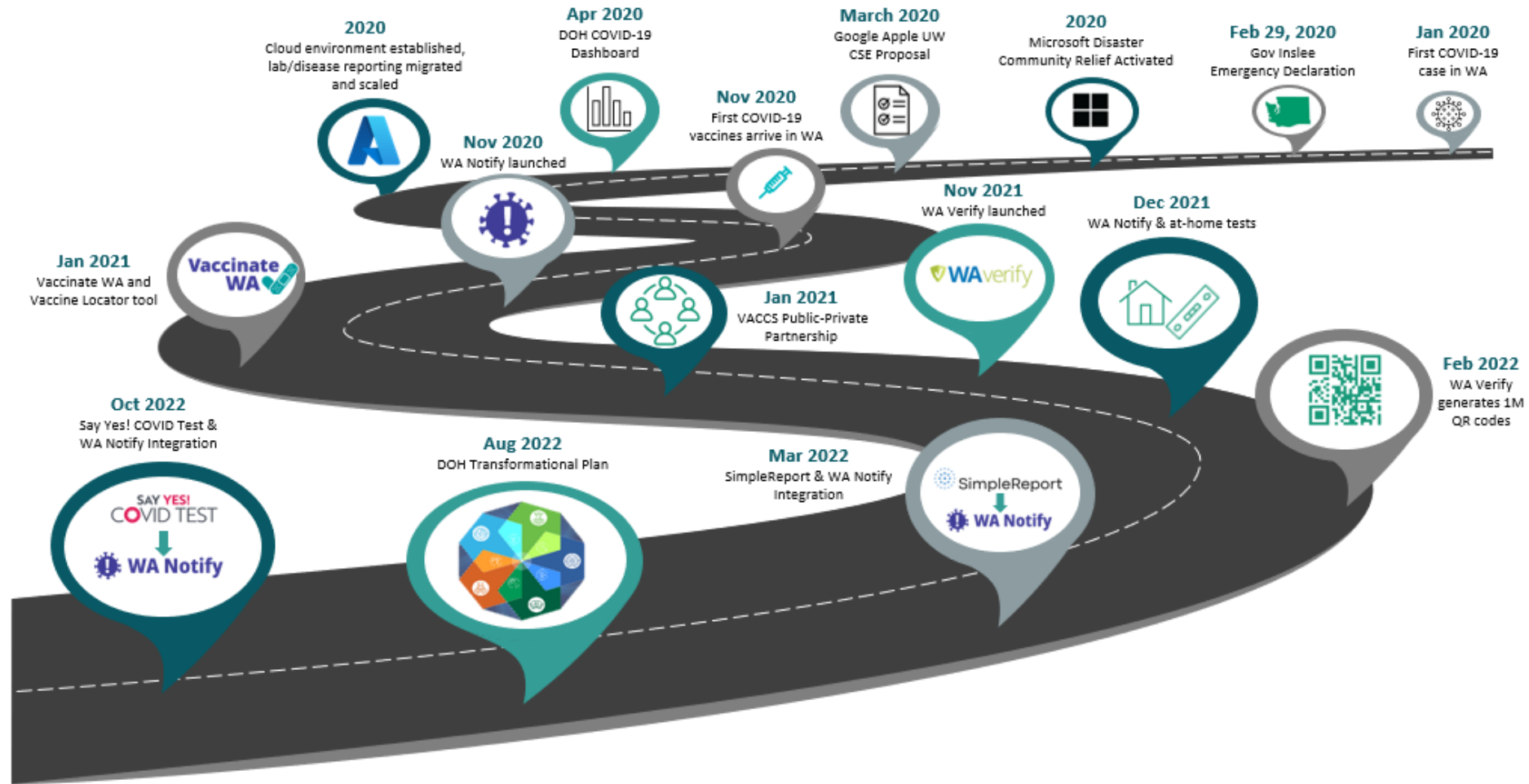
## OIT Leadership Team and Functions

November 2023

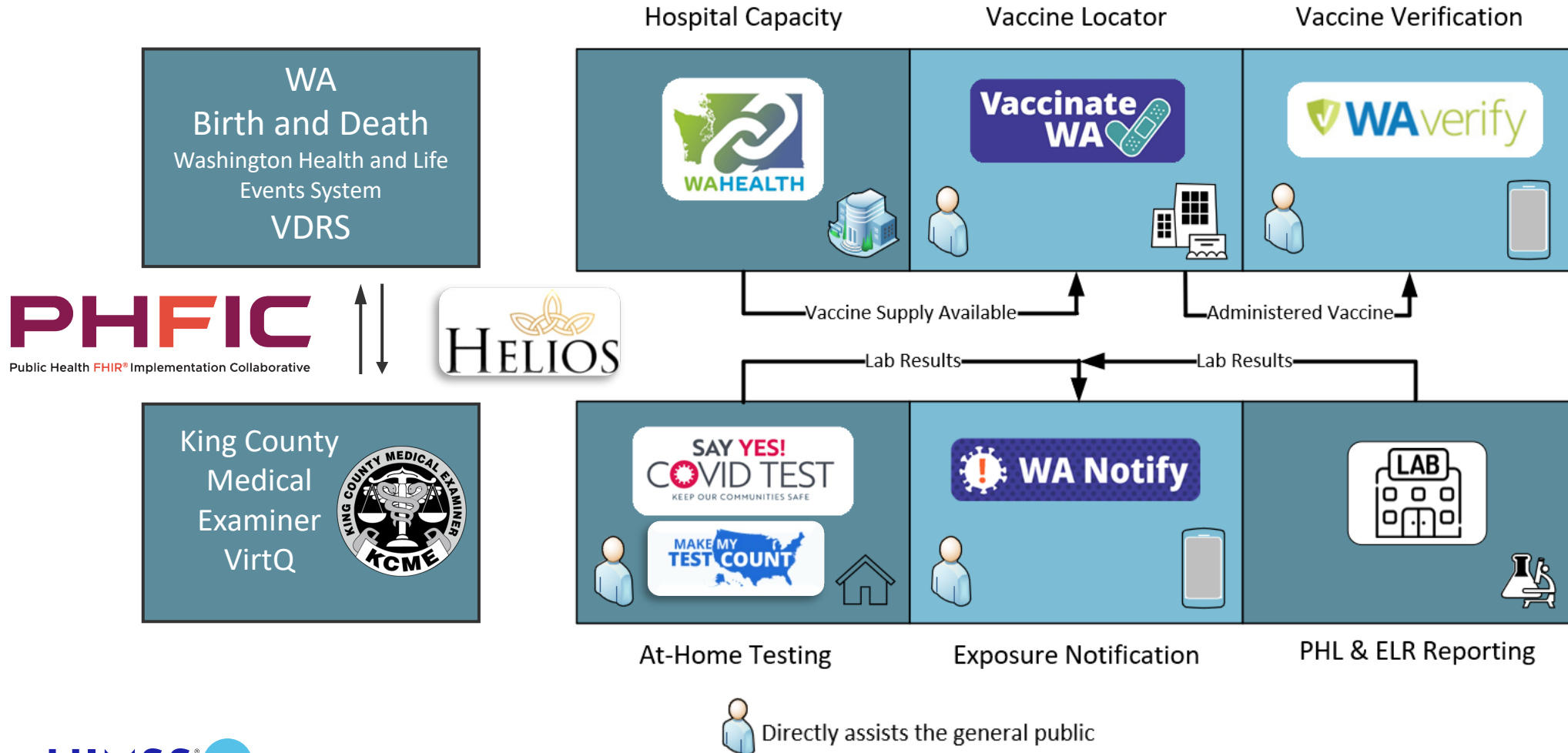
Executive Support for Innovation & Technology	Center for Data Modernization & Informatics	Center for Innovative Solutions and Program Excellence	Center for Enterprise Architecture	Center for Information Security	Center for Strategic Delivery and Customer Experience	Center for Technology Operations Chief Information Officer	Administrative Deputy Deputy Chief Information Officer
							
<b>Janelle Smith</b>	<b>Michelle Campbell</b>	<b>Vacant</b>	<b>Happy Jenkins</b>	<b>John Weeks</b>	<b>Shelby Eagan</b>	<b>Callie Goldsby</b>	<b>Rachel Johnston</b>
Executive Assistant to Les Becker  OIT Administrative Leadership  OIT Processes & Operational Support	Data Governance <hr/> Data & Systems Strategy <hr/> Informatics <hr/> Enterprise Analytics & GIS <hr/> Data Exchange	Business Analysis <hr/> Enterprise Change Management <hr/> Innovation <hr/> Project & Program Management <hr/> Continuous Improvement	Business Architecture <hr/> Data Architecture <hr/> Solutions Architecture	Security Risk Assessment <hr/> Security Policy & Exception Management <hr/> Security Incident Response <hr/> Vulnerability Management	Business Consultation <hr/> IT Project Quality Assurance <hr/> Innovation & Technology Strategy <hr/> Policy and Legislation <hr/> HHS Coalition Coordination <hr/> Technology Business Management	Chief Information Officer <hr/> Applications & Data Services <hr/> Cloud Services <hr/> IT Operations <hr/> Public Health IT Services <hr/> Service Management & Enterprise Automation <hr/> Software Testing & IT Accessibility	Deputy Chief Information Officer <hr/> OIT Operational Leadership <hr/> Service Management & Enterprise Automation <hr/> ILRS Support <hr/> Request & Service Catalog Management



# COVID 19 Milestones



# Data Ecosystem to Protect Washingtonians



# Collaboration for Shared Success

- Direct-to-Consumer testing program developed by CareEvolution in coordination with National Institutes of Health, the CDC, and Amazon
- Initially piloted by NIH in select Washington counties in Fall 2021
- Provides low-barrier access to Covid-19 at-home antigen tests, delivered rapidly via Amazon's Multi-Channel Fulfillment model
- Integration between exposure notification system, SimpleReport for Point of Care tests, and Say Yes! COVID Test for at-home tests



# *Digital, Verifiable Health Information*

- Waverify digital vaccine verification tool using SMART Health Cards
  - Rapid development, deployment, and testing
  - Currently available in 52 languages
  - Successful Public-Private-Academic partnership
  - Nearly 2 million verifications since launch
- Expanding to Waverify+ to include additional secure, digital health information using SMART Health Links
  - Using HL7 International Patient Summary standard
  - Patient directed and curated



# *Data Modernization Initiative (DMI)*

- Goals of the Data Modernization Initiative:
  - Build the right foundation by strengthening and unifying critical infrastructure for a response-ready public health ecosystem.
  - Accelerate data into action to improve decision making and protect health.
  - Develop a state-of-the-art data and systems workforce.
  - Support and extend data and systems modernization partnerships.
  - Create processes to support meeting DMI-related objectives.

# *DMI Project Areas*

- Artificial Intelligence (AI)
- Cloud Informatics
- Data Democratization
- Data Governance
- Data Visualization
- DMI Workforce Development Web Site
- Electronic Case Reporting
- Enterprise Geographic Information System (GIS)
- TRAX
- WA Notify and WA Verify

# *Equity, Innovation, and Engagement*

## Cornerstone Values Shaping our future

Our cornerstone values –  
**Equity, Innovation, and Engagement (EIE)** –  
are key drivers in shaping how we do our work.



# WA Notify Publications

## Peer-Review Journal Publications

Abueg, M., Hinch, R., Wu, N. et al. Modeling the effect of exposure notification and non-pharmaceutical interventions on COVID-19 transmission in Washington state. *npj Digit. Med.* 4, 49 (2021). Online: [doi.org/10.1038/s41746-021-00422-7](https://doi.org/10.1038/s41746-021-00422-7)

Baseman JG, Karras BT, Revere D. Engagement in Protective Behaviors by Digital Exposure Notification Users During the COVID-19 Pandemic, Washington State, January–June 2021. *Public Health Reports.* August 2022. Online: [doi.org/10.1177/00333549221110301](https://doi.org/10.1177/00333549221110301)

Bonnell TJ, Revere D, Baseman J, Hills R, Karras BT. Equity and Accessibility of Washington State's COVID-19 Digital Exposure Notification Tool (WA Notify): Survey and Listening Sessions Among Community Leaders. *JMIR Form Res* 2022;6(8):e38193. Online: [doi.org/10.2196/38193](https://doi.org/10.2196/38193)

Chen T, Baseman J, Lober W, Revere D, Klemfuss N, Hills R, Karras B. WA Notify: the planning and implementation of a Bluetooth exposure notification tool for COVID-19 pandemic response in Washington State. *Online J Public Health Inform* 2021;13(1). Online: [doi.org/10.5210/ojphi.v13i1.11694](https://doi.org/10.5210/ojphi.v13i1.11694)

Segal C, Lober W, Lorigan D, Karras BT, Revere D, Baseman JG. Trading off privacy and utility: The Washington State experience assessing the performance of a public health digital exposure notification system for COVID-19. *J Am Med Inform Assoc* 2022. Dec; 29(12): 2050–2056. Published online 2022 Oct 7. doi: 10.1093/jamia/ocac178

## Peer-Review Journal Publications (under review)

Drover C, Elder A, Guthrie B, Revere D, Briggs N, West L, Higgins A, Lober W, Karras BT, Baseman JG. Utility of Digital COVID-19 Exposure Notifications at a Large Gathering: Survey Analysis of Public Health Conference Attendees. *JMIR Public Health and Surveillance* (submitted). doi:10.2196/50716

Elder A, Arrouzet C, Miljadic L, Karras BT, Higgins A, West L, Lorigan D, Revere D, Polissar N, Segal C, Lober W, Baseman JG. Evaluation of the Effectiveness of Washington State's Digital COVID-19 Exposure Notification System Over One Pandemic Year. *J Am Med Inform Assoc* (under review).

Segal C, Zhang Z, Karras BT, Revere D, Zane G, Baseman JG. Early Epidemiological Evidence of Public Health Value of WA Notify, a Smartphone-based Exposure Notification Tool: Modeling COVID-19 Cases Averted in Washington State. *medRxiv* 2021.06.04.21257951. June 2021; Online: [doi.org/10.1101/2021.06.04.21257951](https://doi.org/10.1101/2021.06.04.21257951)

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- Apple | Google
- Advisory Committee Members
- Microsoft & Microsoft Research
- MITRE Corporation
- Brotman Baty Institute
- Association of Public Health Laboratories
- Amazon Web Services
- National Institutes of Health
- Internet Security Research Group
- Digital Notification Alliance members

*Questions?*

## *Session Feedback:*

### *Innovation and Partnership: COVID-19 Exposure Notifications in Washington State*



# *Thank You*

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