



Executive Summary: Five Year Data and Systems Modernization Plan

Washington state’s goal is to modernize disease surveillance systems and the overall health information system ecosystem for improved data management, governance, analytics capabilities and increase interoperability, especially when it comes to sharing data with our partners.

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Public health depends on widespread and rapid access to data to drive decisions. The goal of the Data Modernization Initiative (DMI) is to move from siloed public health data systems to a connected, resilient, adaptable, and sustainable “response ready” data ecosystem that can help us solve problems before they happen and reduce the harm caused by problems when they do.

Washington Department of Health (DOH) uses approximately 50 surveillance data systems, each developed independently over many years, largely in response to rigid funding requirements. This has led to duplicative data structures, data formats, data standards, legacy systems processes, and protocols.

In addition to required maintenance and training efforts to ensure personnel have the skills to work across these systems, the diversity of systems limits interoperability and DOH’s capacity to share data with its partners and stakeholders. To address these challenges, DOH has:

Begun to align its internal structure to support data and systems modernization,

Assessed the current state and gaps of its data ecosystem, and

Developed a plan to address current gaps.

Data and Systems Modernization plan guiding principles

The Data and Systems Modernization Plan implementation team will take an iterative and incremental approach to planning and executing work outlined in this plan following these guiding principles:

- Embrace experimentation and innovation.
- Model innovation as a process.
- Leverage data and technology for better outcomes.
- Promote data equity.
- Support education and workforce development.
- Expect and nurture excellence in people.
- Serve as a model for improving community health.

Additionally, the team will follow the priorities and vision agency leadership has outlined in the [Washington State Department of Health Transformational Plan](#), including:

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.

This vision for a modernized public health system will serve communities through capabilities and tools that further their ability to thrive and are equally supported by a robust, well-trained, and capable workforce that is supported and trusted. We will bring novel approaches to improving health through new models of innovation, key engagement and communications pathways, promotion of whole person health, and the detection, prevention, and response to a variety of diseases and conditions.

Washington State Department of Health support

The **Executive Office of Innovation & Technology** (OIT), led by Chief of Innovation and Technology Les Becker, was established to align resources in an optimal way and ensure long-term success by focusing on innovation to both strategically and tactically find opportunities for data and systems modernization throughout the agency.

OIT's intention is to engage across the agency, and with external partners, to plan for and coordinate data and systems modernization efforts throughout Washington state's data and systems ecosystem.

The newly established **Center for Analysis, Informatics, and Modernization** will focus on building infrastructure and business processes to support the planning and coordination of modernization initiatives across the agency. The Center, led by Director Michelle Campbell, is also responsible for the development, tracking, and maintenance of the Data and Systems Modernization Plan. Lastly, the Center will directly manage high priority, enterprise-wide data and systems modernization initiatives. It will work in close collaboration with OIT’s leadership to ensure alignment across all data, systems and workforce development and training planning, and work execution.

Data and systems gap analysis

In collaboration with the University of Washington, DOH conducted a comprehensive assessment and gap analysis of the department’s public health data ecosystem. The findings and recommendations are the basis for the development of the Data and Systems Modernization Plan.

The [2022 Data Modernization Needs Assessment and Gap Analysis](#) provides recommendations for the overall Data Modernization Improvement plan and the Workforce Development and Training plan. These plans will anticipate future needs and avoid the pitfall of becoming obsolete because of advances in technology or unforeseen public health crises.

Data and Systems Modernization plan goals and objectives

Over the course of the next five years, the strategic objectives for data and systems modernization are provided in the chart below.

Goal	Objectives
<p>GOAL 1: DOH will build the right foundation by strengthening and unifying critical infrastructure for a response-ready public health ecosystem</p>	<p>Objective 1a. Develop a shared vision of a public health ecosystem for coordinated and seamless exchange of actionable data between healthcare data providers and public health agencies</p>
	<p>Objective 1b. Expand foundational infrastructure to provide scalable, flexible services for timely and appropriate access to actionable data in the public health ecosystem</p>
	<p>Objective 1d. Transform legacy public health data systems, processes, and activities to use the foundational infrastructure, thereby replacing and combining existing siloed systems with systems that work for all diseases and conditions, reduce duplicative activities, lower cost, and speed scale-up and response in emergencies</p>
	<p>Objective 1e. Create the ability to easily store, discover, analyze, and visualize data in the public health ecosystem</p>

GOAL 2: DOH will accelerate data into action to improve decision-making and protect health	Objective 2a. Develop, align, test, and implement data standards to increase interoperability
	Objective 3a. Identify Washington state workforce needs
	Objective 3b. Develop collaborative workforce training development infrastructure and processes for state, local, and tribal partners
	Objective 3c. Increase data science upskilling for state, local, and tribal partners
GOAL 3: DOH will develop a state-of- the-art data and systems workforce	Objective 3a. Identify Washington state workforce needs
	Objective 3b. Develop collaborative workforce training development infrastructure and processes for state, local, and tribal partners
	Objective 3c. Increase data science upskilling for state, local, and tribal partners
GOAL 4: DOH will support and extend data and systems modernization partnerships	Objective 4a. Develop and monitor a partner engagement strategy to support data and systems modernization roadmap
	Objective 4b. Increase awareness and buy-in on the part of internal and external partners
	Objective 4c. Develop structures and processes that support modernization with state, local, and tribal partners
GOAL 5: DOH will have an internal structure and process to support meeting DMI-related objectives	Objective 5a: Institute new internal structures to support the implementation of the 'Data and Systems Modernization' Plan
	Objective 5b. Improve alignment with other internal teams to support the implementation of

	the 'Data and Systems Modernization' Plan
	Objective 5b. Improve alignment with other internal teams to support the implementation of the 'Data and Systems Modernization' Plan

Communication

DOH is committed to regularly communicating with our partners and providing feedback opportunities regarding the Data Modernization Initiative. The plans will ensure DOH, local health jurisdictions, and Tribal partners are at the table, prioritizing their input in the development and implementation of the plans, and maintaining communications about ongoing progress toward achieving data modernization and workforce development goals.

Resources

Listed in the table below are reference materials from various sources that provide background information and additional points of view surrounding public health workforce development.

Document	Reference
DMI Assessment	ELC Public Health Data Modernization Assessment located in REDCap .
DMI Plan	Data Modernization Plan that details the jurisdiction's plan to implement and support the DMI initiatives.
DMI Strategic Implementation Plan	DMI Strategic Implementation Plan
The United States Office of Personnel Management '2022 Federal Workforce Priority Report'	2022 Federal Workforce Priority Report
Roles and Responsibilities for Launching Teams	Roles and Responsibilities for Launching Teams
Guide to Improving and Measuring the Impact of Training	Guide to Improving Measuring the Impact of Training
Performance Improvement Learning Series Catalog	Performance Improvement Learning Series Catalog
Develop a Strong Workforce Development Plan and Meet Accreditation Standards	Develop a Strong Workforce Development Plan and Meet Accreditation Standards (phf.org)
Building an Informatics-Savvy Health Department: A Self-Assessment Tool	Building an Informatics-Savvy Health Department: A Self-Assessment Tool

Document	Reference
American Hospital Association Developing an Effective Health Care Workforce Planning Model	American Hospital Association (AHA) Developing and Effective Health Care Workforce Planning Model
Kirkpatrick's Model	Kirkpatrick's Model
Continuous Quality Improvement: PDSA Model	Continuous Quality Improvement (CQI) (state.mn.us)
ELC C1 Guidance Document	Project C1: Health Information Systems and ELC CARES funding
ELC C2 Guidance Document	ELC Project C2: Accelerating Data Modernization in Jurisdictions Performance Measures Guidance
Health Equity Guiding Principles for Inclusive Communication	Health Equity Guiding Principles for Inclusive Communication Gateway to Health Communication CDC
PHII DMI Planning Toolkit	Public Health Informatics Institute Data Modernization Initiative Planning Toolkit
Employment Outcomes of Public Health Graduates 2021	Employment Outcomes of Public Health Graduates 2021
First-Destination Outcomes for 2015-2018 Public Health	First-Destination Outcomes for 2015-2018 Public Health
Labor Market Competition Public Health Graduates U.S. 2021	Labor Market Competition Public Health Graduates U.S. 2021
Postgrad Employment Outcomes of Public Health Students 2021	Postgrad Employment Outcomes of Public Health Students 2021

DOH 822-041 March 2025

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