Modernizing Public Health Data: Assessing Infrastructure and Setting Sustainable Priorities for the Future

Problem Statement

The health data ecosystem in Missouri is a complex and dynamic landscape. In an era of instant delivery and online access to all types of information, the government is compelled to engage in new ways of doing business to meet these demands. The leadership at the state agency has recognized the need for a comprehensive understanding of this landscape to foster business relationships and inform decisions around modernizing the state agency's systems to more adeptly respond to customer and community needs and increase efficiency within the internal organization.

Project Approach

Vision   To determine the current state of the public health information ecosystem across **DHSS** and with local public health authorities, aging agencies, federal agencies, and other data trading partners.

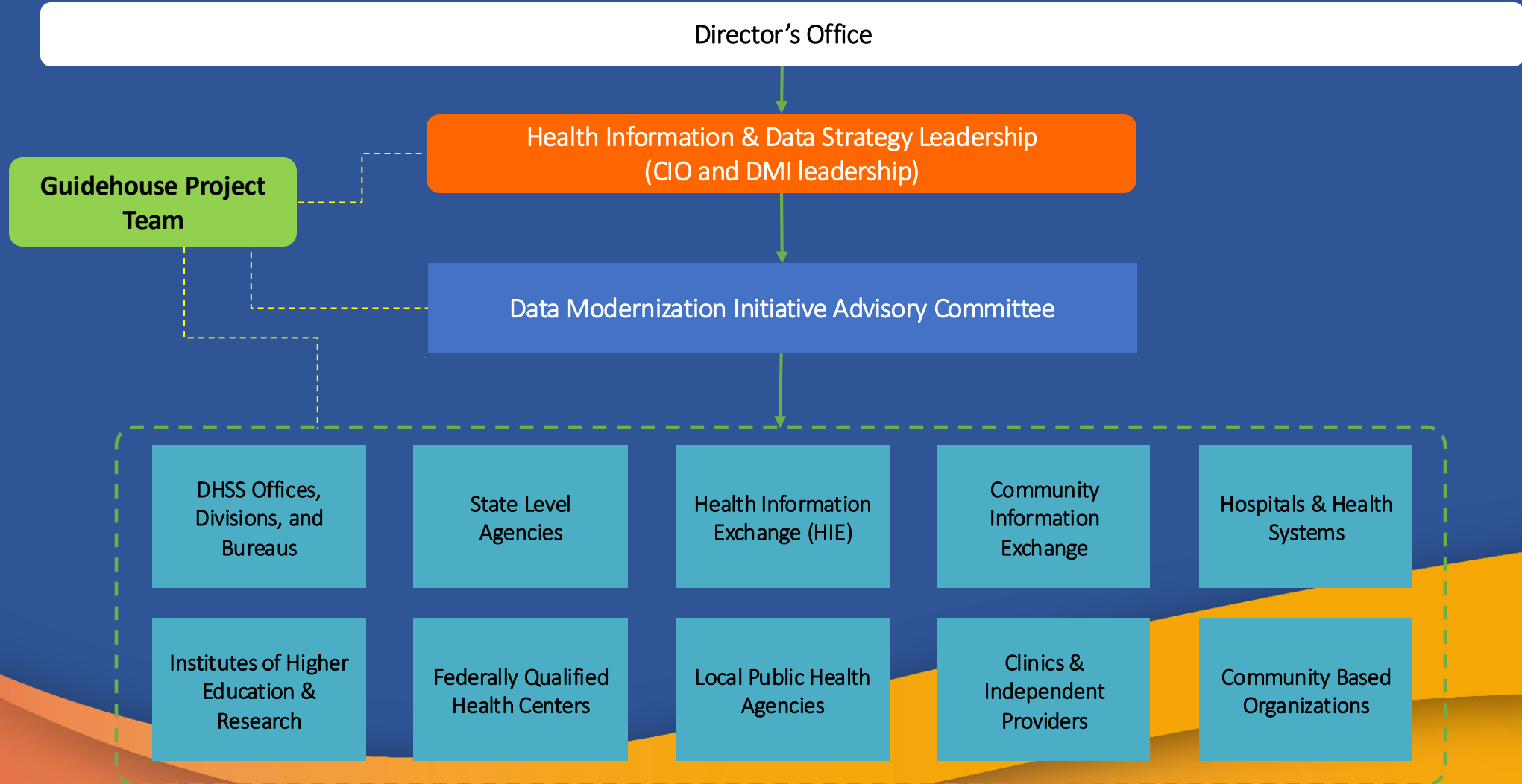| External Stakeholder Engagement	Digital Health Transformation Survey	Data System Inventory	Assessment and Priority Setting
Purpose To identify, describe, map, and visualize the current state of public health information practices, data, and tools across departmental operations and the statewide public health information ecosystem.	**Purpose** To evaluate and score public health information practices using an industry-accepted digital health transformation and maturity framework. *This work is done in collaboration with HIMSS.*	**Purpose** To visually represent the complex data ecosystem to create a comprehensive understanding of the department's data flows and structures.	**Purpose** Harness the detailed analyses and evaluations conducted in the previous phases to develop actionable and forward-looking strategies

Governance

Director's Office

Health Information & Data Strategy Leadership
(CIO and DMI leadership)

Guidehouse Project Team

Data Modernization Initiative Advisory Committee

| DHSS Offices, Divisions, and Bureaus	State Level Agencies	Health Information Exchange (HIE)	Community Information Exchange	Hospitals & Health Systems
Institutes of Higher Education & Research	Federally Qualified Health Centers	Local Public Health Agencies	Clinics & Independent Providers	Community Based Organizations

External Stakeholder Engagement

Guidehouse and DHSS identified over 200 community partners with the knowledge and experience to inform and drive data discussions. This included representatives from DHSS, community-based organizations, local public health agencies, hospitals and health systems, Area Agencies on Aging, behavioral health providers, higher education institutions, provider groups, Federal partners and others.

- Utilize already established boundaries (counties/regions)

- Meet them where they are

- Utilize known, active participants (SHIP, strategic planning, boards, associations)

- Offer options (virtual, in person)

Community Partners and Organization Engaged
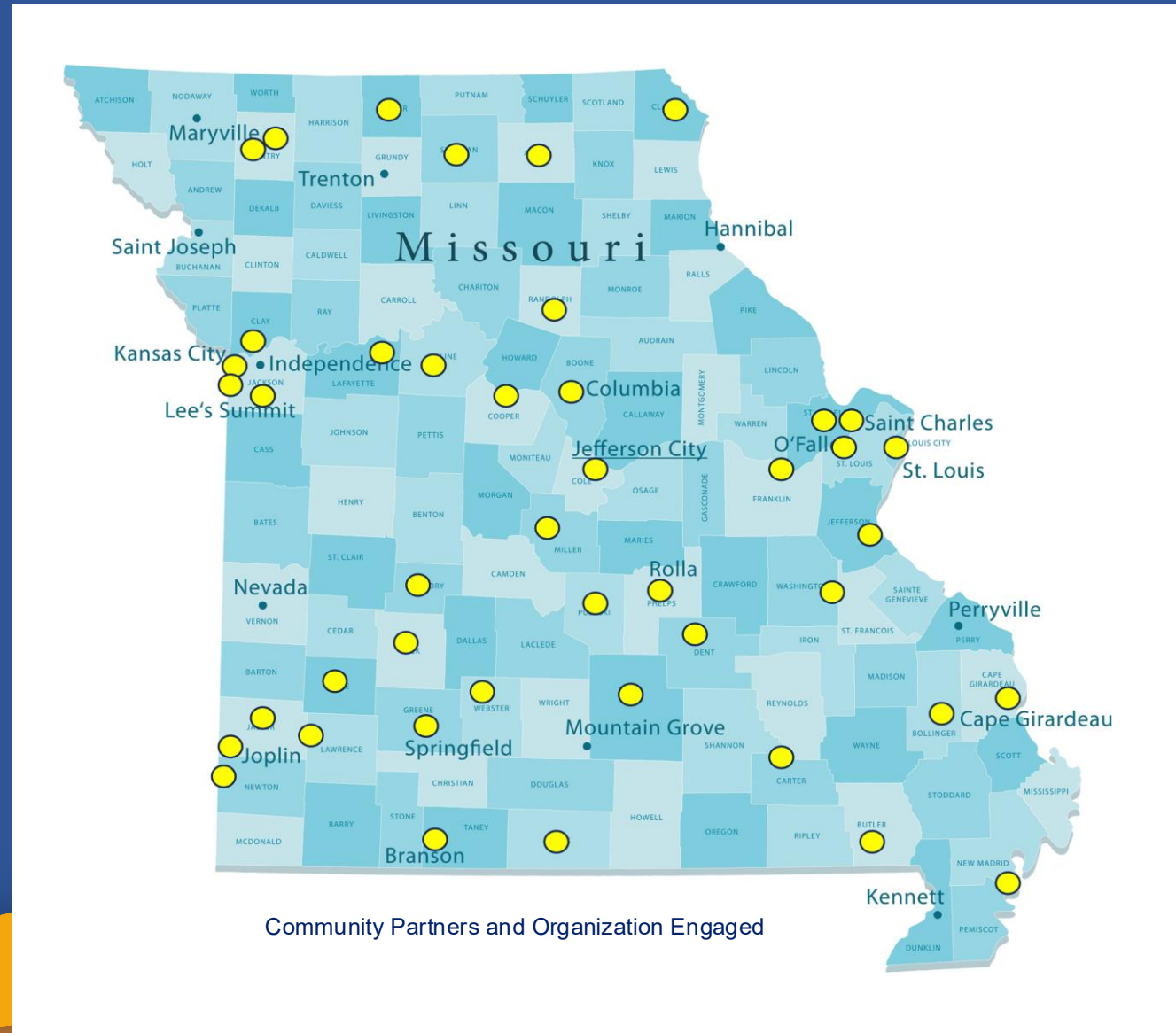
Digital Transformation Survey
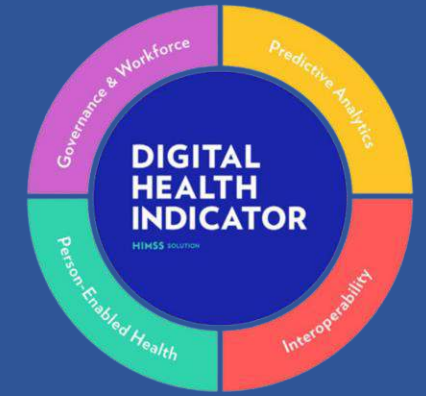
Deployed the HIMSS Digital Health Indictor –The Digital Health Indicator (DHI) tool is an industry-standard evaluation framework used to systematically assess DHSS' digital health capabilities, strengths and opportunities. The assessment evaluates An organizations performance across four dimensions: Governance and workforce; Interoperability; Predictive analytics; Person-enabled Health

HIMSS Approach

- Translation to Public Health Context:
- Identification of Survey Participants
- Conducted interviews with each organization
- Data Analysis

HIMSS DHI Results

| Department	Governance & Workforce (NA mean=60/100)	Interoperability (NA mean: 75/100)	Person-Enabled (NA mean=50/100)	Predictive Analytics (NA mean= 40/100)
Mean Score for DHSS teams	32.64	57.32	33.37	20
Range of Scores	44.5 – 25	(84.9 - 32)	54.9 - 14.4	46.2 - 4.8
Community & Public Health	44.5	84.9	54.9	46.2
Regulation and Licensure	34.6	79.1	N/A	12.3
Administration and Cannabis	29	51	N/A	19.1
Senior & Disability	30.1	39.6	30.8	4.8
Laboratory	25	32	14.4	17.8

North American Average as of 2024 based on Hospitals Only, No other Public Health Agency has measured their progress with DHI.

Data Systems Inventory

Guidehouse conducted an evaluation of existing DHSS public health information systems, data and tools to produce Data Relationship Maps of DHSS systems.

- Looked at existing documents
- Conducted data system owners survey
- Developed relational categories
- Created data relationship maps
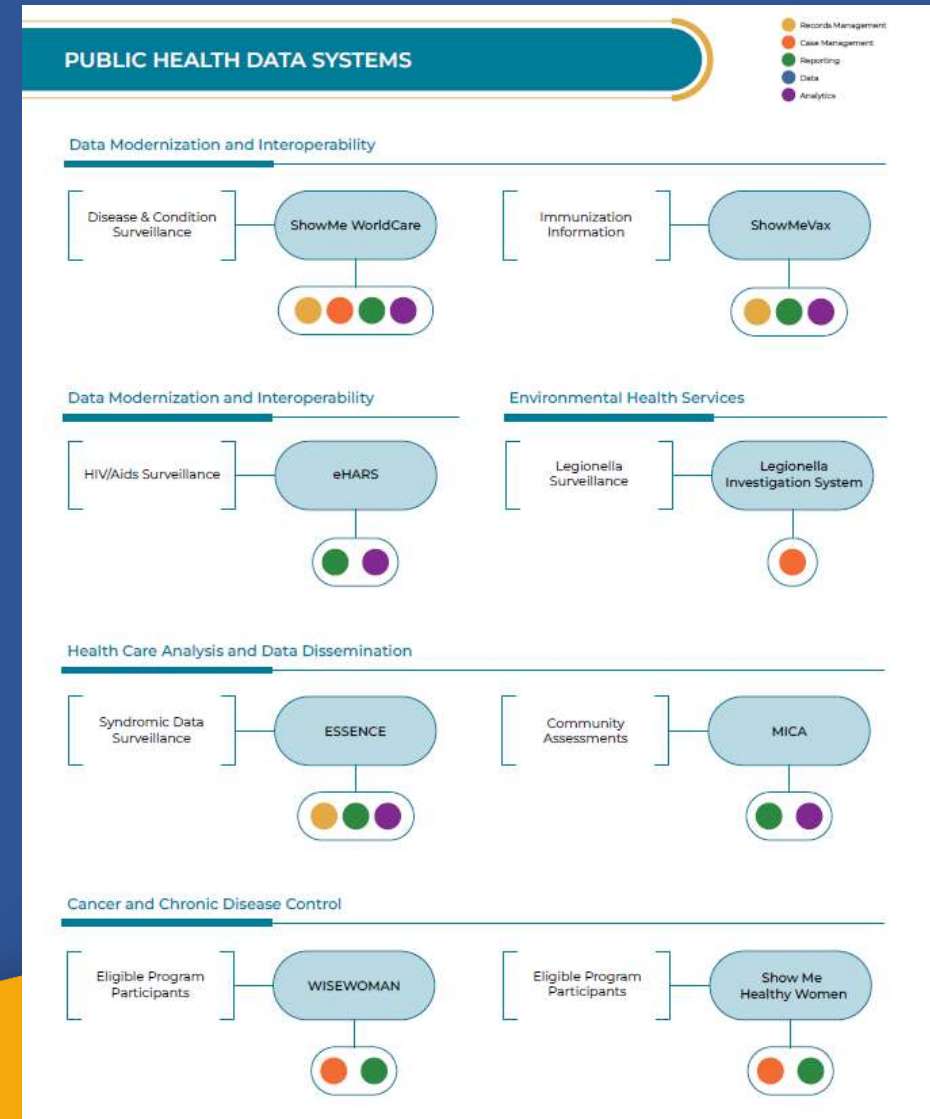
Assessment and Priority Setting

Enhance Support of Local Public Health and Senior Services Programs and Activities

Adopt Information Technology and Data Governance Structures

Plan and Implement an Enterprise Analytic Environment

Upgrade and Enhance the Availability of Actionable Web-based Data

Standardize and Expand Departmental Capacity for Training State and Local Staff

Conduct a Long-Range Technology Strategic Planning Process

Assess Current Public Health Statutes and Rules

Sustainability

DHSS Data Modernization Governance Teams

DMI Stakeholder Team
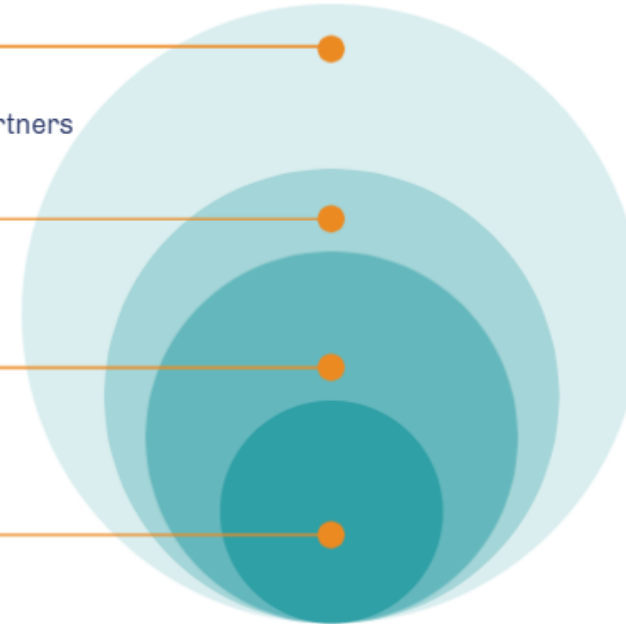Feedback and collaboration from external partners

DMI Advisory Team
Guidance from DHSS project leaders

DMI Leadership Team
Department strategy and planning

DHSS ITAC
Project initiation and coordination

Statewide Collaboration

Health Data Consortium
- Long term strategy and direction-setting across the Health Domain

CITGC: Cabinet Information Technology Governance Council
- Project approval and status reporting

Sustainability

Funding
- Leverage cross programmatic funds
- Request New Decision Items
- Find savings from efficiencies

Wins

Adopt Information Technology and Data Governance Structures

Health Data Consortium - Long term strategy and direction across the health data domain in multiple State agencies.

Upgrade and Enhance the Availability of Actionable Web-based Data

Enhancements to current data systems that display health data; additional public facing dashboards; request for PHIG funding for replacement data systems.

Enhance Support of Local Public Health and Senior Services Programs and Activities

Local Public Health Agency HUB
Modernization of environmental inspection and disease surveillance data systems for state and local staff

New leadership education

Thank you!

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Scan QR Code for a link to the Missouri DHSS Final Report

MISSOURI DEPARTMENT OF
HEALTH &
SENIOR SERVICES

Data Modernization Infrastructure and Planning

August 20, 2025

Jesse Cushman – Data Modernization Director

Nebraska Department of Health and Human Services

Division of Public Health

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History of DMI Milestones 2019-2024 (National)

> For the first time, Congress dedicates $50M in FY 2020 to support data modernization

> Congress dedicates $50 million in FY 2021 to continue data modernization activities.

> The American Rescue Plan (ARP) Act provides an additional $500 million to CDC to advance surveillance and analytics infrastructure, as well as to establish a forecasting center for emerging biological threats.

> Congress dedicates $100M in FY 2022 and $175M in FY 2023 to modernize public health data surveillance and analytics at CDC and state and local health departments.

Growing support for modernization:
- Data standards, such as FHIR, and new federal policies push modernization forward
- CDC expands data-ready innovation with healthcare, academic, and research partners
- CDC awards first funding to states for data modernization and system interoperability
- DMI lays out a strategic roadmap to guide modernization and evaluation

CDC answers the urgent call
- Focus on core surveillance systems improves early warning signals for biggest health threats
- CDC releases open data site to share technology resources and foster innovation
- New IT and Data Governance unifies CDC's investments in modernization

https://www.cdc.gov/surveillance/data-modernization/milestones.html

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DMI Journey at Nebraska

Build the right foundation.

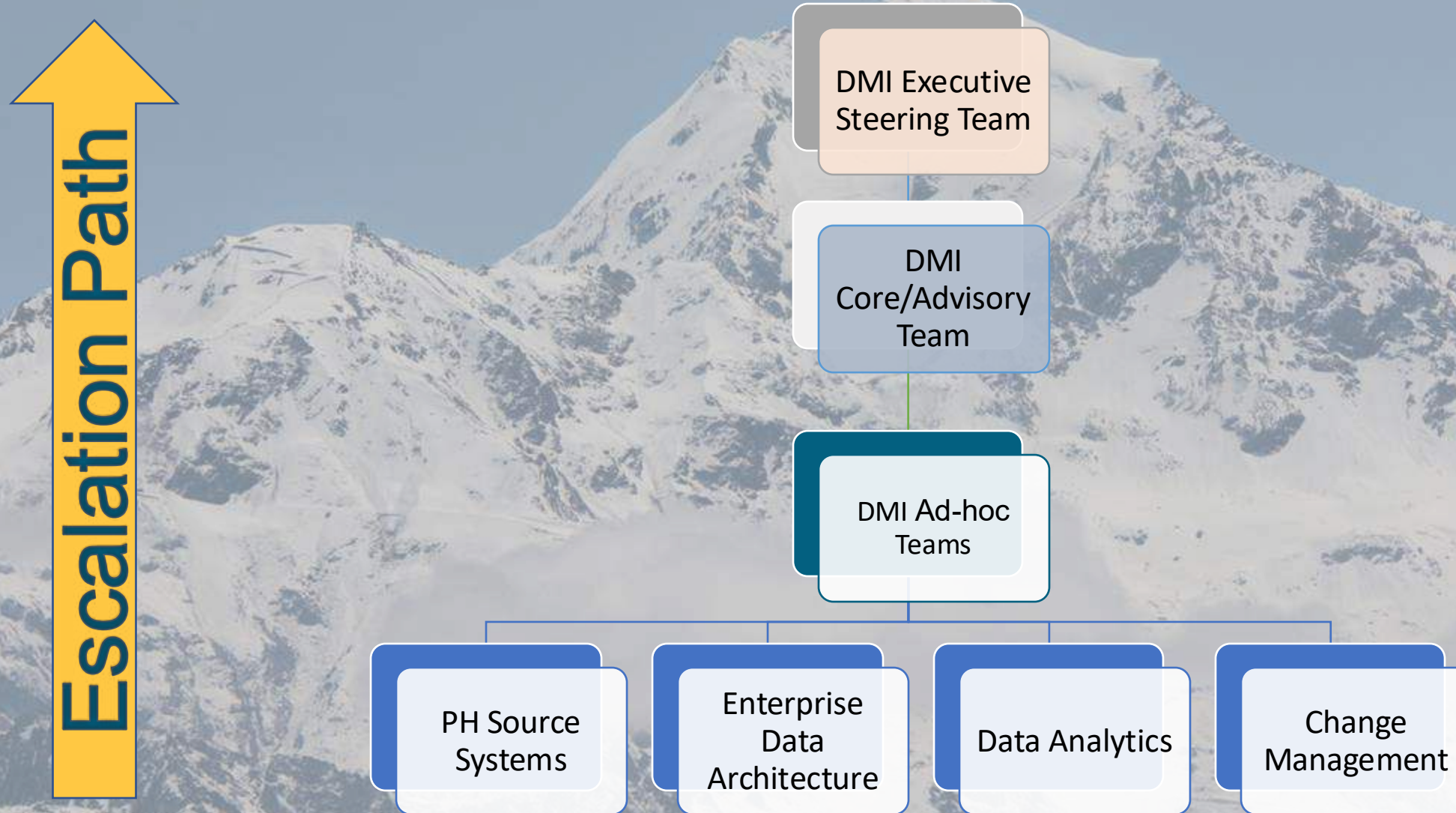**Accelerate data into action.**

Develop state-of-the-art workforce.
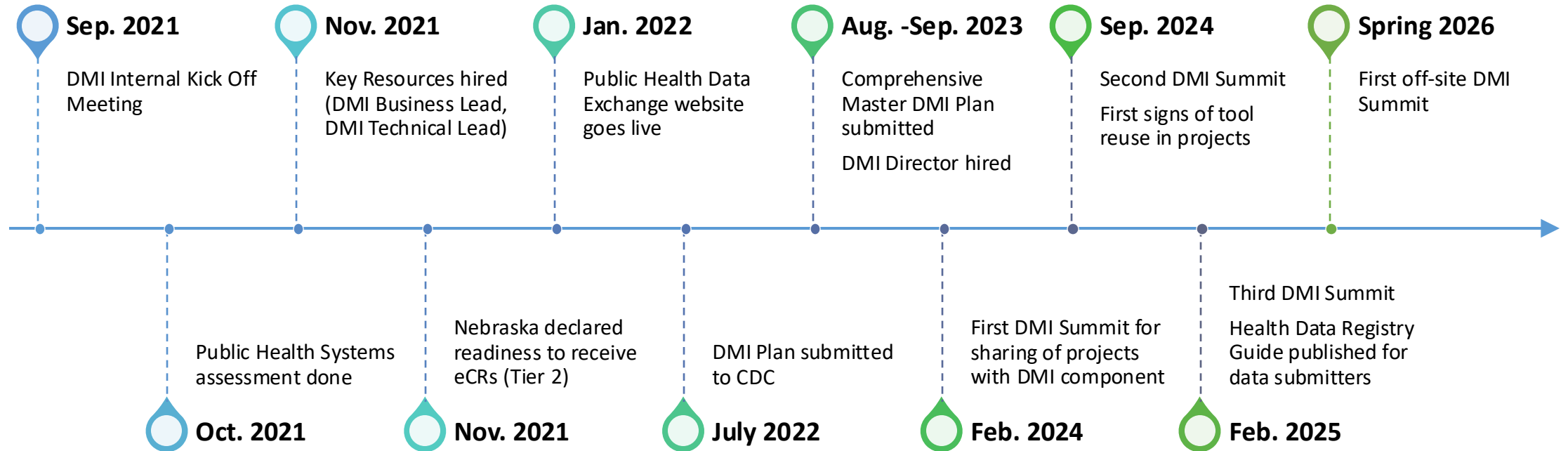
Support and extend external partnerships.

Manage change and governance.

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DMI Governance Structure

Key DMI Milestones at Nebraska

Sep. 2021

DMI Internal Kick Off Meeting

Nov. 2021

Key Resources hired (DMI Business Lead, DMI Technical Lead)

Jan. 2022

Public Health Data Exchange website goes live

Aug. -Sep. 2023

Comprehensive Master DMI Plan submitted

DMI Director hired

Sep. 2024

Second DMI Summit

First signs of tool reuse in projects

Spring 2026

First off-site DMI Summit

Public Health Systems assessment done

Oct. 2021

Nebraska declared readiness to receive eCRs (Tier 2)

Nov. 2021

DMI Plan submitted to CDC

July 2022

First DMI Summit for sharing of projects with DMI component

Feb. 2024

Third DMI Summit

Health Data Registry Guide published for data submitters

Feb. 2025

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The Summit

- Why highlight different projects?
  - Identify reusability of tools and ideas
  - Showcase the value to Nebraskans
  - Celebrate wins and identify potential pitfalls for other projects

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DMI Administrative Objectives

DMI Governance Structure

- Leadership buy-in
- Data policies
- Obstacle mitigation

Data Governance Resources

- Data Office partnership
- IS&T support
- Opportunities to collaborate with other teams

Sharing Wins and Opportunities

- Using SharePoint for document management
- Using Jira for project management
- Bringing projects to the summit

Team Roles & Expectations

- Naming DMI Director that has role in health data management
- DMI Business Lead who coordinates the workplan
- DMI team meetings prioritized by all committee members

Communications

- Sharing successes through the Summit
- Expanding outside of DPH to include Local Health Departments
- Present at national conferences and convenings

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DMI Sustainment

- Efforts embedded in existing data teams
- Leadership buy-in and support
- Long-term plan for funds that support the projects and work effort
  - Have contingency and backup plans
  - Some projects go beyond a single funding source
  - Braid and blend funds
- Sharing the wins and opportunities – promoting the Summit
  - New use of old tools
  - Regular exposure brings awareness and visibility

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Data Public Access and Sharing

➤ The public facing Public Health Dashboards: https://dhhs.ne.gov/Pages/Public-Data-Dashboards.aspx

- Converted from Tableau to PowerBI

➤ Talk about the HAN

- The HAN application was internally built
- Use Twillo for texting
- Internally built self-service platform
- https://dhhs.ne.gov/pages/Health-Alert-Network.aspx
- Eliminated faxing

➤ HAN reuse

- The use of Twillo for texting
- The process used to eliminate faxing
- Planned reuse of self-service coding
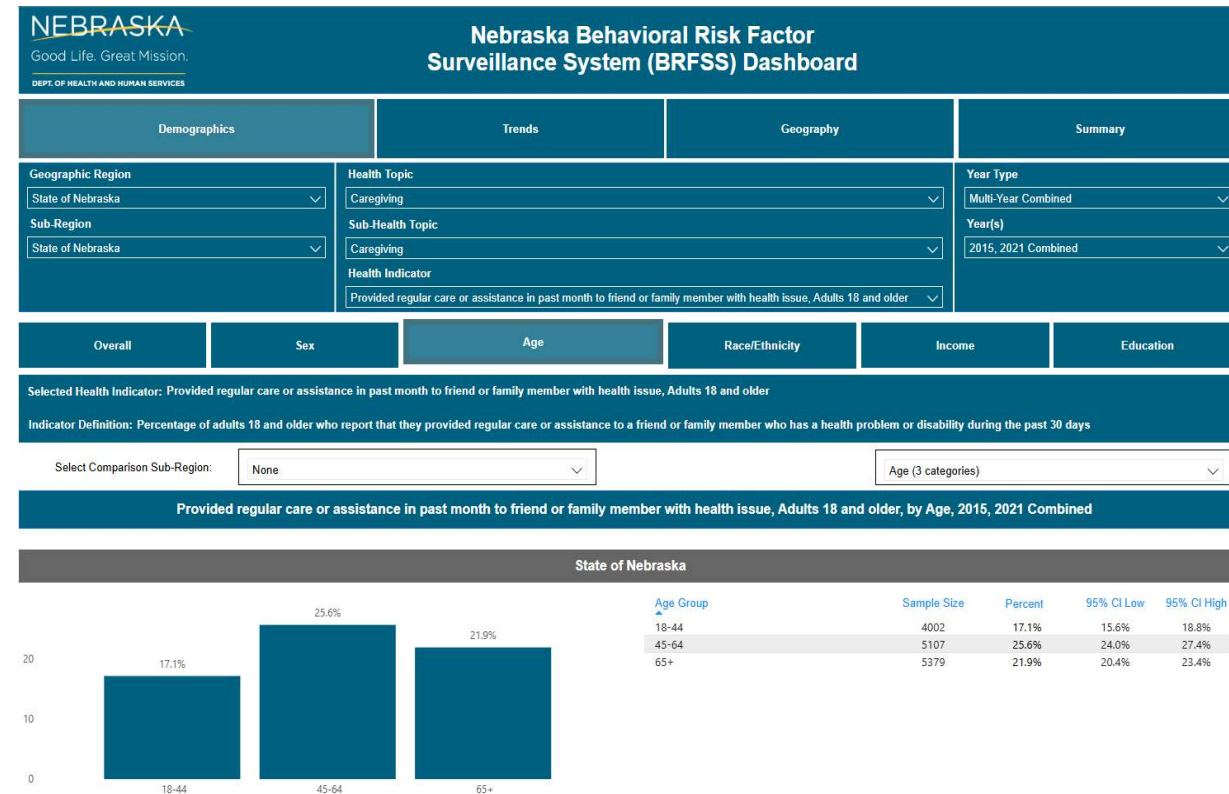
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Nebraska's Public Data Homepage:

https://dhhs.ne.gov/Pages/Public-Data.aspx

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dhhs.ne.gov

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