

# The PIHOA Laboratory Data Exchange Initiative

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[www.GSSHealth.com](http://www.GSSHealth.com)

# Presentation Overview

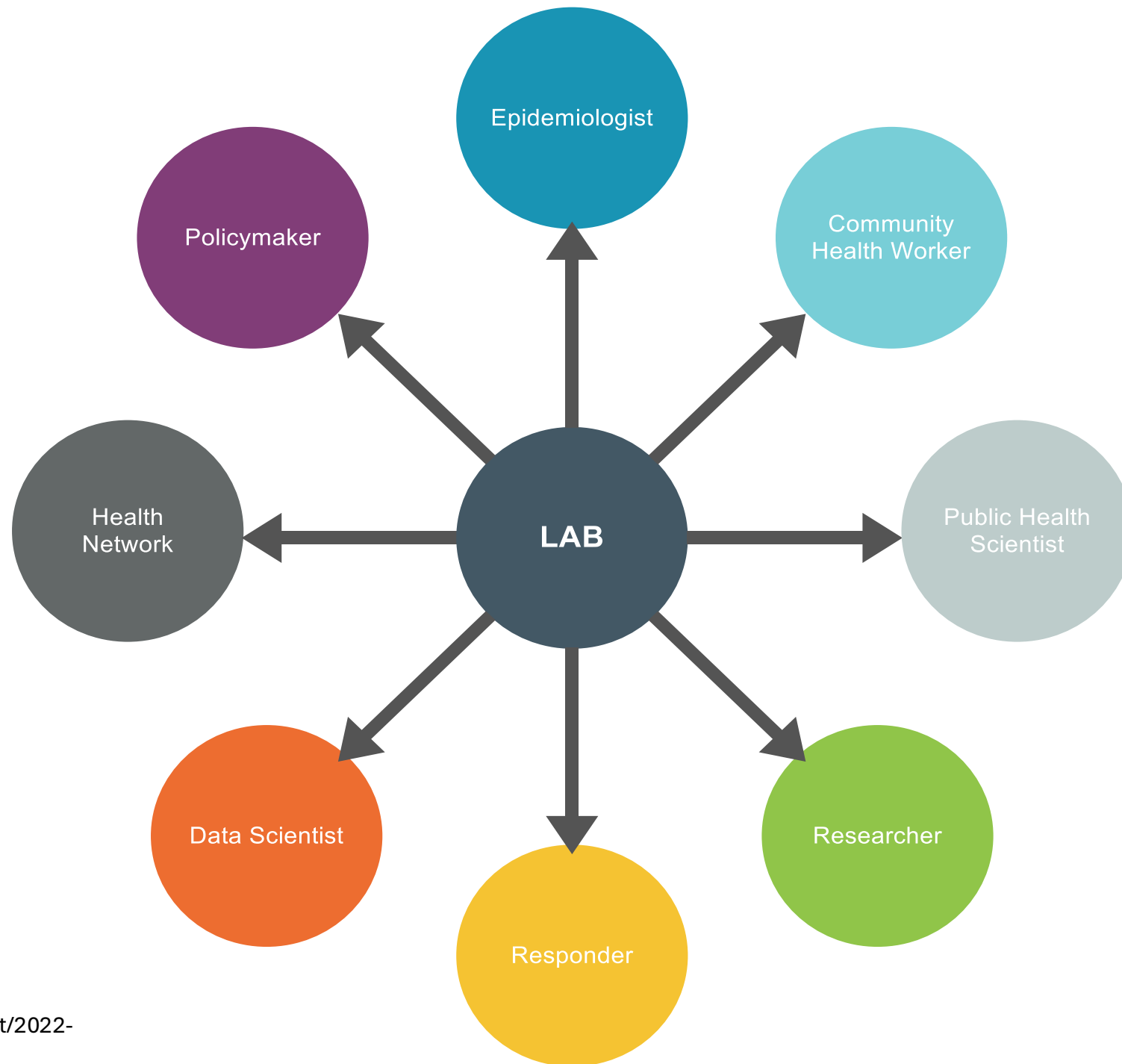
## **Data Modernization Initiative**

- Rationale
- Key Modernization Initiatives
- Resources
- Importance of LIS
- LIS Requirements

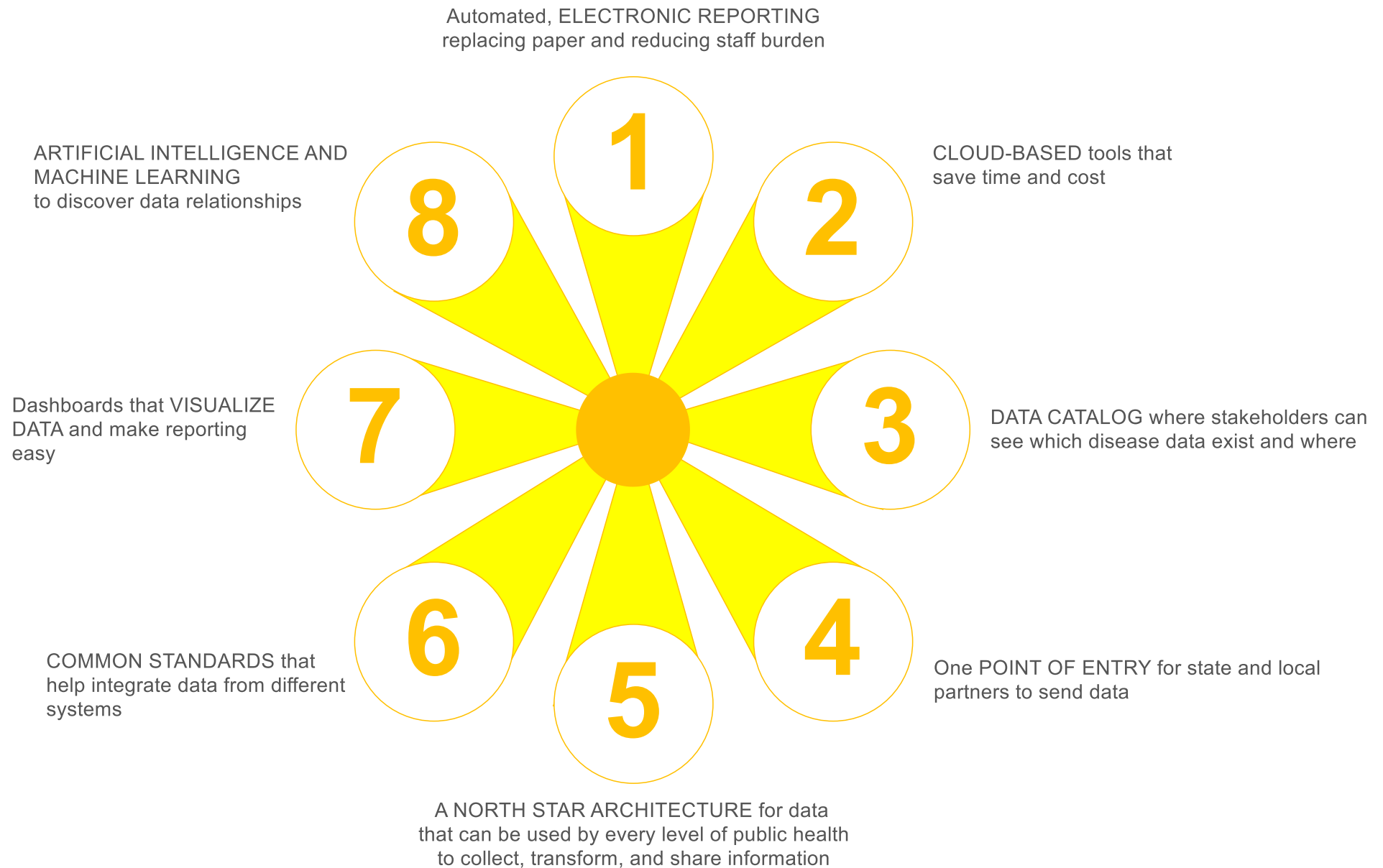
## **PIHOA LDX Progress Report**

- Project Overview
- Participants
- Current Situation and SCOR
- Outputs and Inputs
- Next Steps

# Data Modernization Initiative



Adapted from:  
<https://www.cdc.gov/surveillance/data-modernization/snapshot/2022-snapshot/2022-snapshot-what-dm-looks-like-P.pdf>



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# RESOURCES

-  Leadership & Governance
-  Funding & Infrastructure
-  People & Capacity
-  Technology & Tools
-  Partnerships & Collaboration
-  M&E & Adaptation

# Public Health Infrastructure Grant (PHIG)



Adapted from: <https://www.cdc.gov/infrastructure-phig/php/funding-profiles/counties.html>

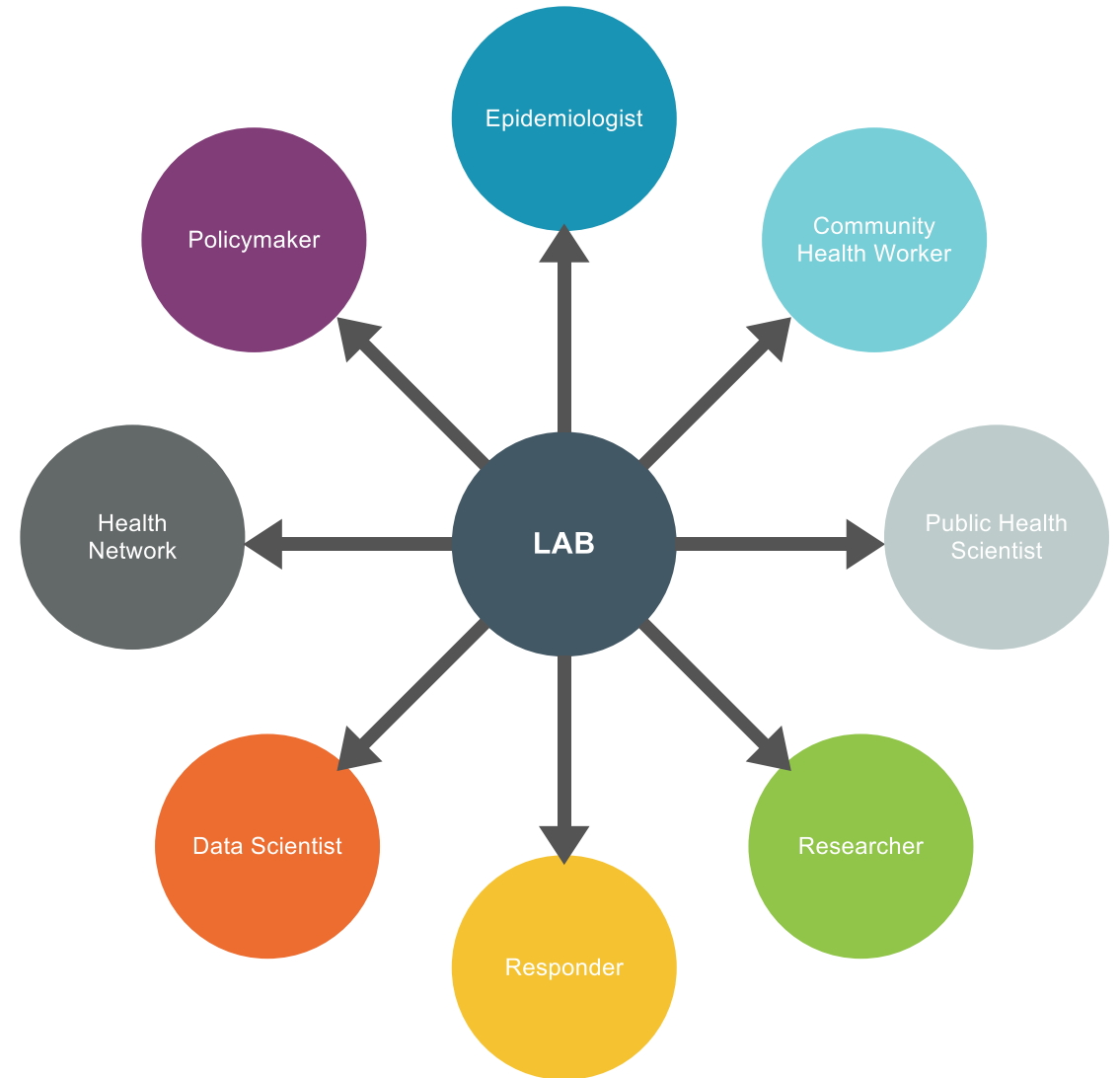
CDC PHIG: <https://www.cdc.gov/infrastructure-phig/about/index.html>

PHIG Partner Site: <https://www.phinfrastructure.org/>

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## Why LDX and Why Now?

- The laboratory is a central component.
- COVID-pandemic lessons learned.
- Laboratories face growing volumes of data from diverse sources.
- Inconsistent data standards hinder interoperability.
- Regulatory pressure is growing for real-time reporting and traceability.



# LIS is the Main Source of Exchanged Data

## Pre-analytical

- Patient Management
- Provider Management
- Request Management
- Specimen Management
- Test Catalog

## Analytical

- Instrument Interfacing
- Quality Control Management
- Results Management
- Scheduling Management
- Testing Management

## Post-analytical

- Reports Management
- Billing Management

## Cross Cutting

- Alerts
- Backup and Disaster Recovery
- Interoperability and Data Exchange
- Inventory Management
- Localization
- Maintenance Management
- Specimen Tracking/Chain of Custody
- User Management/Role-based Access

# Benefits of a Robust LIS

## **Efficiency**

Reduces turnaround time by automating and streamlining processes.

## **Accuracy**

Minimizes errors with standardized data capture.

## **Compliance**

Improves compliance with audit trails and security measures.

## **Patient Care**

Enables timely delivery of test results for clinical decisions.

## **Data Management**

Provides a centralized, secure, and organized data repository.

## **Traceability**

Ensures visibility and tracking throughout the specimen journey.

## **Financial**

Automation of tasks and reduction of errors lead to lower costs.

## **Integration and Interoperability**

Connects lab instruments, EMRs, surveillance, and reporting systems.

# An Effective LIS

An effective LIS is **accurate, secure, scalable, flexible, easy to use, and interoperable** while supporting lab-specific workflows.

- **Core Functionalities** – support the full lifecycle of lab testing and management
- **Data Quality and Accuracy** – ensure high-quality and accurate data is essential for patient safety and clinical decision-making
- **Compliance and Security** – essential for protecting patient data and ensuring regulatory compliance
- **Scalability and Flexibility** – should be able to grow with the needs of the lab
- **User-Friendly Interface** – should be designed for ease of use by lab staff and other stakeholders
- **System Integration** – should integrate seamlessly with other healthcare and laboratory systems

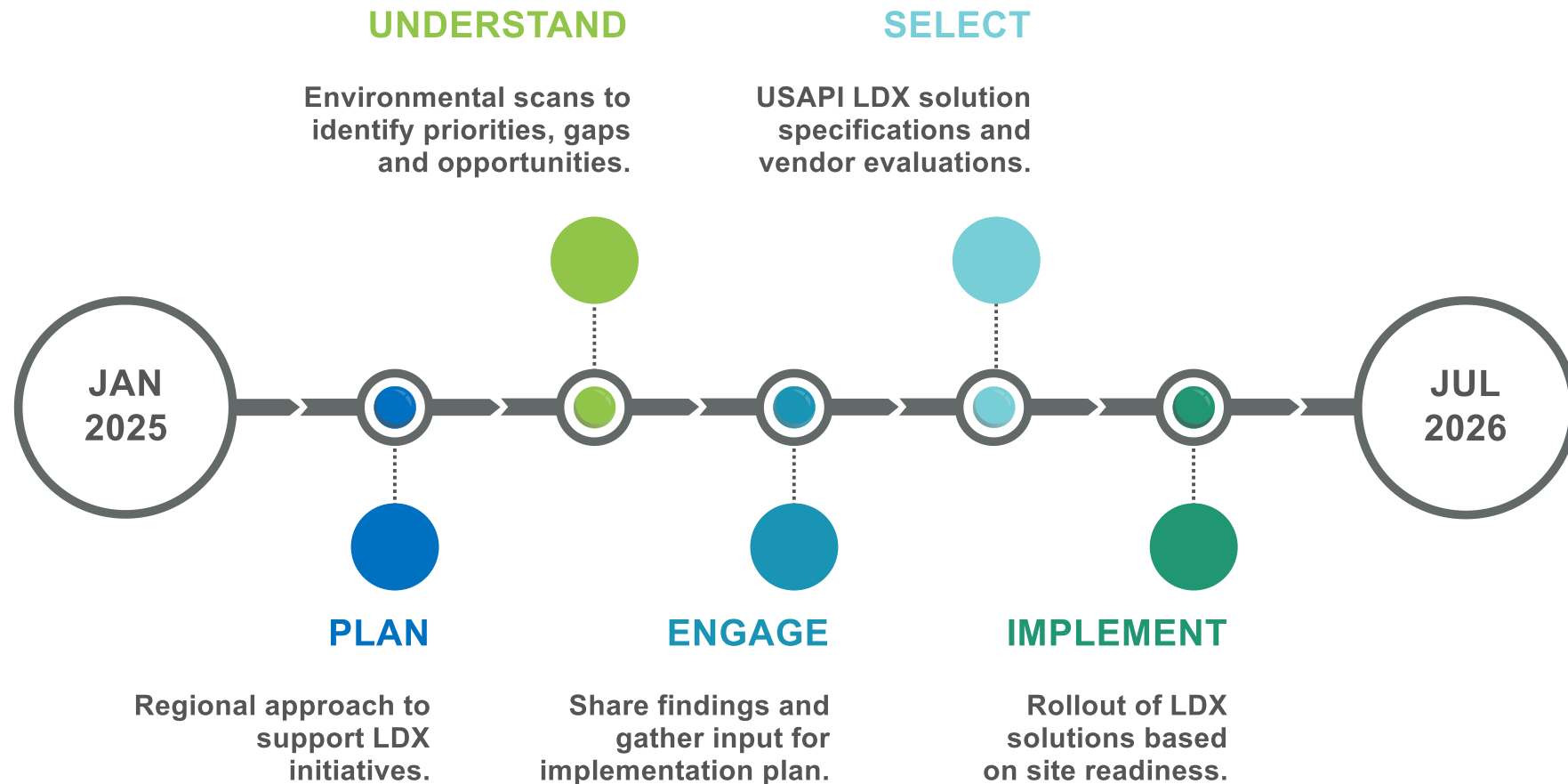
# LIS Options

| Feature               | OpenELIS, SENAITE...                                      | HCLab, QBench, Agilent...                                  |
|-----------------------|-----------------------------------------------------------|------------------------------------------------------------|
| Type                  | Open-source                                               | Proprietary (Commercial)                                   |
| Best For              | Public health, clinical, environmental, and research labs | Hospital and clinical labs                                 |
| Deployment Complexity | Moderate-high (requires technical expertise for setup)    | Moderate (vendor-supported installation and configuration) |
| Deployment Model      | Web-based, on-premise, or cloud                           | On-premise and cloud options                               |
| Support and Community | Active community, good support for integration            | Vendor-supported                                           |
| Cost                  | Free (may require consulting fees at start)               | Paid (license and support fees)                            |

# PIHOA LDX Initiative

Progress Report

# PIHOA Laboratory Data Exchange Initiative



To establish a robust, **regionally coordinated** Laboratory Data Exchange (LDX) ecosystem to facilitate seamless, **automated**, and **bidirectional data sharing** and enhance data accuracy and interoperability in the USAPI region.

# Desired State for Readiness to LDX Adoption

**Infrastructure  
and  
Technology\***

**Workforce and  
Skills\***

**Leadership and  
Governance\*\***

**Regulatory and  
Policy  
Environment \*\***

**Funding and  
Sustainability\***

**Stakeholder  
Engagement\***

**Readiness for  
Change\***

**Monitoring and  
Evaluation\*\***

# Participating Laboratories

- American Samoa – DOH Clinical Laboratory
- American Samoa – LBJ Tropical Medical Center Laboratory
- Guam Public Health Laboratory
- Palau, Koror – Belau National Hospital Laboratory
- RMI, Ebeye – Leiroj Kitlang Memorial Health Center Laboratory
- RMI, Majuro – Majuro Hospital Laboratory



# **Key Findings**



## Current Situation: LIS Implementation

- Operational LIS (OpenELIS and SENAITE) integrated with some analyzers.
- Operational laboratory middleware (Instrument Manager) connecting some analyzers with the Electronic Health Record – LIS implementation in progress.
- Paper and Excel-based systems but in the process of developing a LIS implementation plan.

**Strengths (Internal  
Factors Enabling  
LDX Adoption)**

**S**

AUL  
Existing LIS  
Leadership Support  
Desire for increased efficiency  
Standardization of lab process  
Regional Laboratory Strengthening Initiative

**Challenges (Internal  
Factors Hindering  
LDX Adoption)**

**C**

Governance gaps  
Data security concerns  
Limited LIS implementation  
Infrastructure constraints  
Limited end-user involvement  
Resource and budget constraints  
Workforce knowledge and skill gaps in LIS and LDX

**Opportunities  
(External Factors  
Favoring LDX Adoption)**

**O**

Digital Health strategy  
New funding initiatives  
Training opportunities  
Growing Health IT standards  
Open-source platforms  
COVID lessons  
PPP

**Risks (External  
Factors Hindering  
LDX Adoption)**

**R**

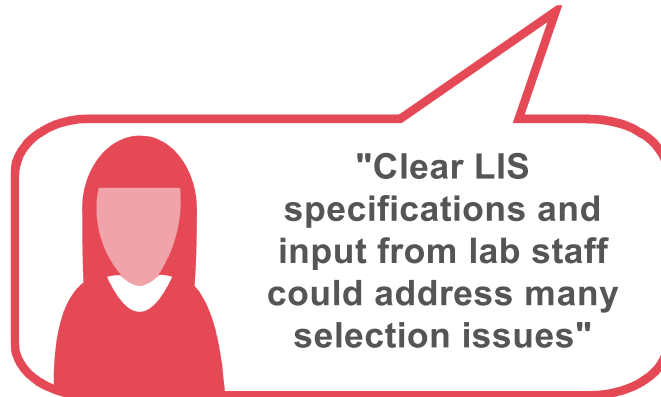
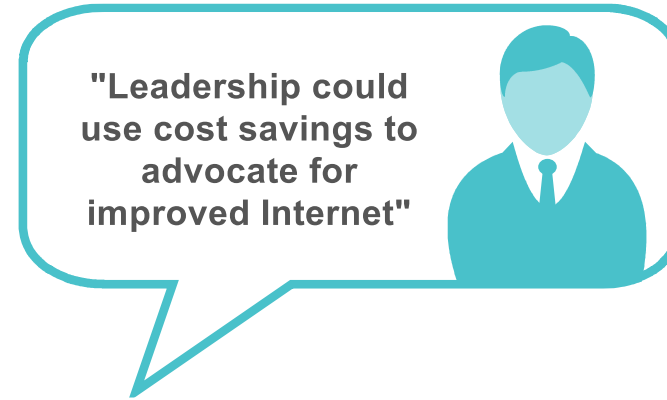
Sustainability challenges  
Cybersecurity threats  
Rapid technological change  
Competition for funds  
Infrastructure instability  
Digital divide  
Vendor lock-in

# AUL Group Discussions

Bridging the gaps between the current state and the desired future state

How and/or what can we (**lab**) do to achieve the desired state so that we (**lab**) are ready to adopt and implement LDX capabilities?

# Infrastructure and Technology



# Workforce



# Sustainability



# Engagement and Readiness



# Next Steps

## PIHOA Laboratory Data Exchange Initiative

