From Assessment to Action:

Leveraging the Workforce Accelerated Initiative (WAI) Public Health Agency Information Infrastructure Maturity Model

May 21, 2026

1:00 – 2:30 PM ET

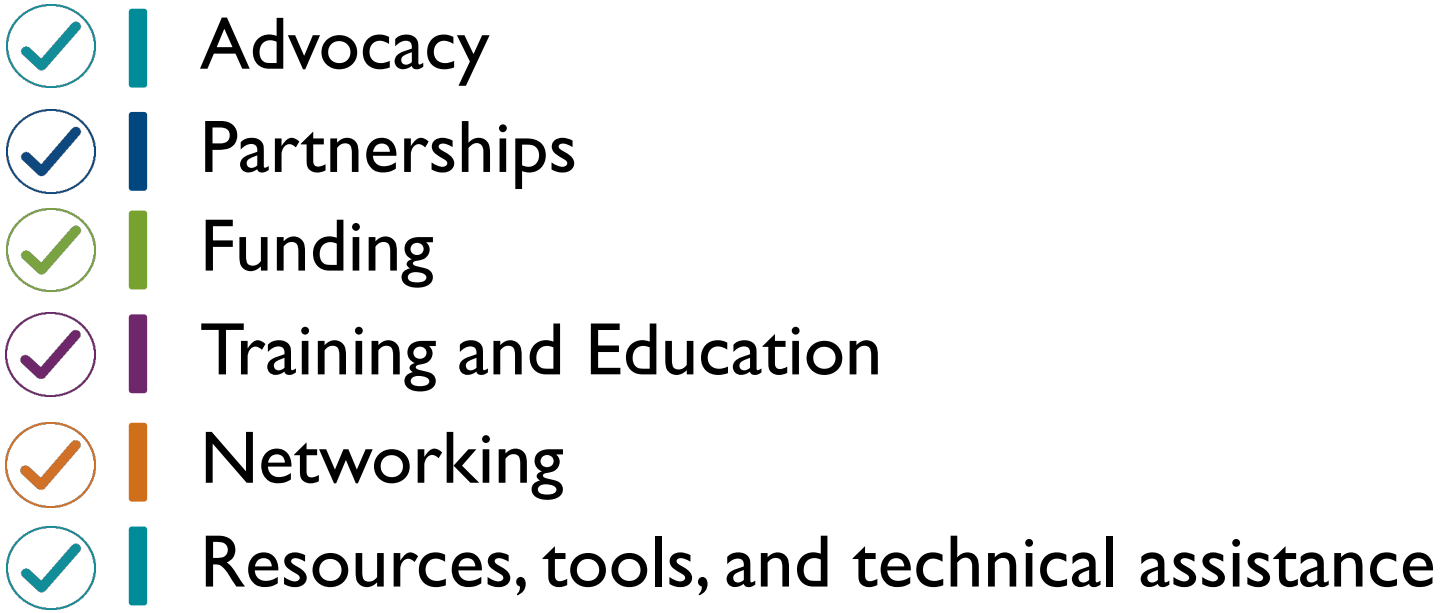
Agenda

Welcome
General Information
Learning Objectives
Poll
CDC Foundation on WAI PHA Information Infrastructure Maturity Model
Local Health Perspective - Cleveland Department of Public Health, OH
Q&A
Facilitated Discussion
Evaluation

NACCHO
National Association of County & City Health Officials

About NACCHO

- NACCHO is comprised of nearly **3,300 local health departments (LHDs)** across the United States. Our mission is to serve as a **leader**, **partner**, **catalyst**, and **voice** with local health departments.



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General Information

Recording: This webinar is being recorded. A link to the recording will be posted on NACCHO's website.

Audio: All participant are muted in the webinar format. This is to minimize background noise. Please remain muted and raise your hands to ask questions.

Questions: We encourage your questions! Use Q&A feature to drop your questions or raise your hand to come off mute. Questions will be addressed during the designated Q&A portion or in the chat.

Technical Issues: If you experience any technical difficulties, try refreshing your browser or exiting and rejoining the session. You can also reach out in the chat for assistance.

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Learning Objectives

- Applying the structured maturity model to complex, diverse program environments.
- Using assessment results to support internal planning, leadership engagement, and modernization efforts.
- Learning how other jurisdictions have leveraged the model to identify achievable, high impact improvements

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Workforce Acceleration Initiative (WAI)

- **From Assessment to Action: Using the WAI PHA Information Infrastructure Maturity Model**

Pam Roesch and Joe Gibson, CDC Foundation

Disclaimer

This presentation and related materials were supported by Cooperative Agreement Number NU60OE000104, funded by the Centers for Disease Control and Prevention through the Association of Public Health Laboratories.

Why Use Maturity Models?

- **Organizes the pieces, maps the landscape**
  - Where am I?
    - Clarifies strengths, gaps, barriers
  - Where could I go?
    - Clarifies choices, possible priorities
  - How can I get there?
    - Clarifies next steps
- **Strategic framework for infrastructure capabilities**
  - Comprehensive (almost)
  - Mutually exclusive (roughly)
  - Directional, describes evolution of capabilities

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WAI Maturity Model: Key Takeaways

- **For All Public Health Agencies (PHAs):** Applies across PHA types and sizes
- **Supports Internal Buy-in:** Clarifies how specific improvements fit in a strategic roadmap
- **Based in Evidence:** Based on existing models, input from many experts and field testing
- **Structure:** PHA-wide information infrastructure maturity described with four dimensions and 22 capabilities

Model Purpose

Evaluate the impact of placing information technology experts into PHAs

Provide directive framework for PHAs of all types planning to modernize their information infrastructure

WAI
WORKFORCE ACCELERATION INITIATIVE
PUBLIC HEALTH DATA & TECHNOLOGY

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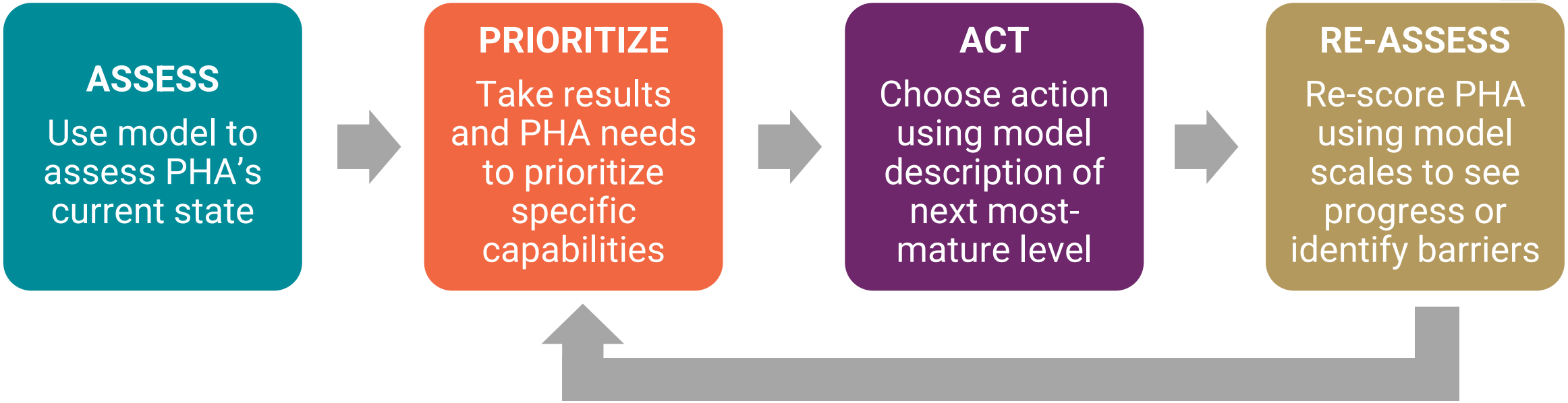
Example: Using the PHA Infrastructure Maturity Model for Planning and Monitoring



5. ENSURE BUY-IN THROUGHOUT

Engage in ongoing, two-way dialogue with PHA leaders and staff to align on status, progress and vision

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Development

1. Grounded in other maturity models
2. Aligned with national data modernization (DM) priorities
3. Reviewed by WAI PHAs and partner organizations
4. Piloted with 4 PHAs, implemented with 47 PHAs
    - Completed by PHA DM leaders in 1.5 to 2 hours

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Structure: Four Dimensions, 22 Capabilities

Information Systems Improvement (ISI) Strategy and Governance

- Vision and Strategy
- Governance
- Funding
- Future-ready, Scalable

Workforce

- Specialist Recruitment
- Specialist Retention
- Sufficient and Diverse Skillsets
- General Staff Knowledge
- Leadership

Partnerships and Networks

- Coordination with Programs and IT Teams
- External Partnerships

Technical Capabilities

- Acquisition
- Internal and External Data Exchange
- Tool Centralization
- Data Linkage, Management and Quality
- Analysis and Use of Findings

Capability Scale Levels

1. **Not Started**
2. **Ad Hoc,** Program-specific
3. **Developing** Strategically PHA-wide
4. **Integrating** PHA-wide, Standardized
5. **Integrated** PHA-wide, Continuous Improvement

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ISI Strategy and Governance Capability
1.2 Information Systems and Data Governance

Governance processes establish policies to guide operations across all major PHA information systems and datasets.

Not Started: No active governance processes exist.

Ad Hoc: The PHA has some governance processes and policies, but they are informal, used very inconsistently and/or the processes do not engage affected parties.

Developing: PHA is planning and/or piloting governance processes across the organization with some initial use cases in place.

Integrating: The PHA has established critical organization-wide governance processes across major PHA systems and developed documentation; staff has started using governance processes.

Integrated: The PHA has achieved the previous level and uses governance processes and protocols at least 90% of the time. PHA improves processes over time.

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Workforce Capability
2.5 Information Systems Leadership

The PHA has a leader (or shared leadership) with sufficient time, longevity, experience and influence to direct information system improvements and ensure progress.

Not Started: No leader or intention to fill role.

Ad Hoc: The PHA wants a leader, but one is not yet identified.

Developing: The PHA has a leader; however, they face barriers in fulfilling their role (e.g., insufficient time, is not qualified for role, insufficient influence).

Integrating: The PHA has a leader with at least 25% time dedicated; meets two of: in the role for at least two years; is qualified and/or has sufficient influence to assure PHA leadership prioritization.

Integrated: The PHA has a leader with at least 50% time dedicated; meets all of: in role for at least two years, is qualified and has sufficient influence to assure PHA leadership prioritization.

Partnerships and Networks Capability
3.1 Systems Improvement, Program and IT Coordination

The PHA's information system improvement (ISI) projects are coordinated with PHA program staff and the agency IT team to improve utility and maximize adoption.

Not Started: No protocols; major barriers in coordinating with program staff or agency IT.

Ad Hoc: Individual ISI projects may coordinate with programs or agency IT, but with no established protocols.

Developing: The PHA is collaboratively developing coordination protocols for ISI projects outlining terms for ISI project, PHA program and IT staff engagement and roles/responsibilities.

Integrating: The PHA has established coordination protocols that were communicated across all teams; in the early stages of routine use.

Integrated: The PHA achieved the previous level and uses coordination protocols at least 90% of the time. PHA improves processes over time.

Technology Capability
4.1 System Acquisition and Enhancements

The PHA uses a consistent process to plan, implement, maintain and enhance information systems. The process uses proven approaches like engaging affected parties, employing user-centered design and aligning with strategic aims.

Not Started: No defined process for selection or design of new systems or system enhancements.

Ad Hoc: A consistent process may be understood among some PHA staff, but it is not written and/or informed by affected parties. No defined process is used across the PHA.

Developing: Developing and/or piloting a consistent process that uses proven approaches.

Integrating: Developed a consistent process that uses effective approaches and rolled the process out to all PHA teams.

Integrated: Achieved the previous level and PHA teams use the process at least 90% of the time. PHA improves the process over time.

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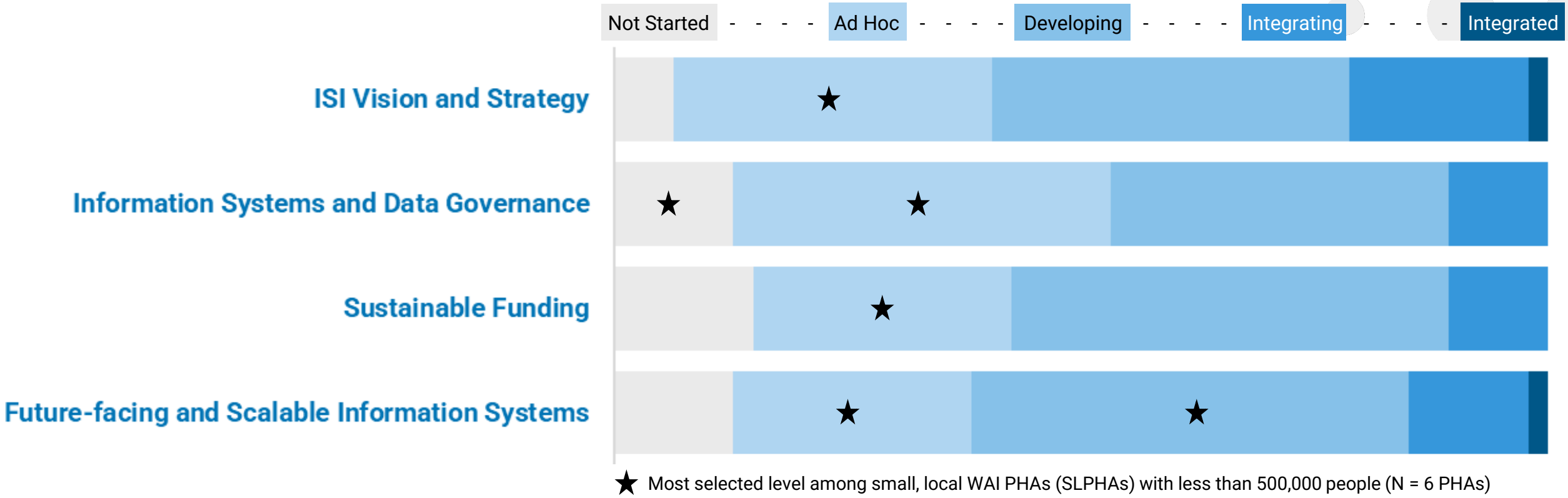
Information Systems Improvement (ISI) Strategy and Governance

N=47 WAI PHAs



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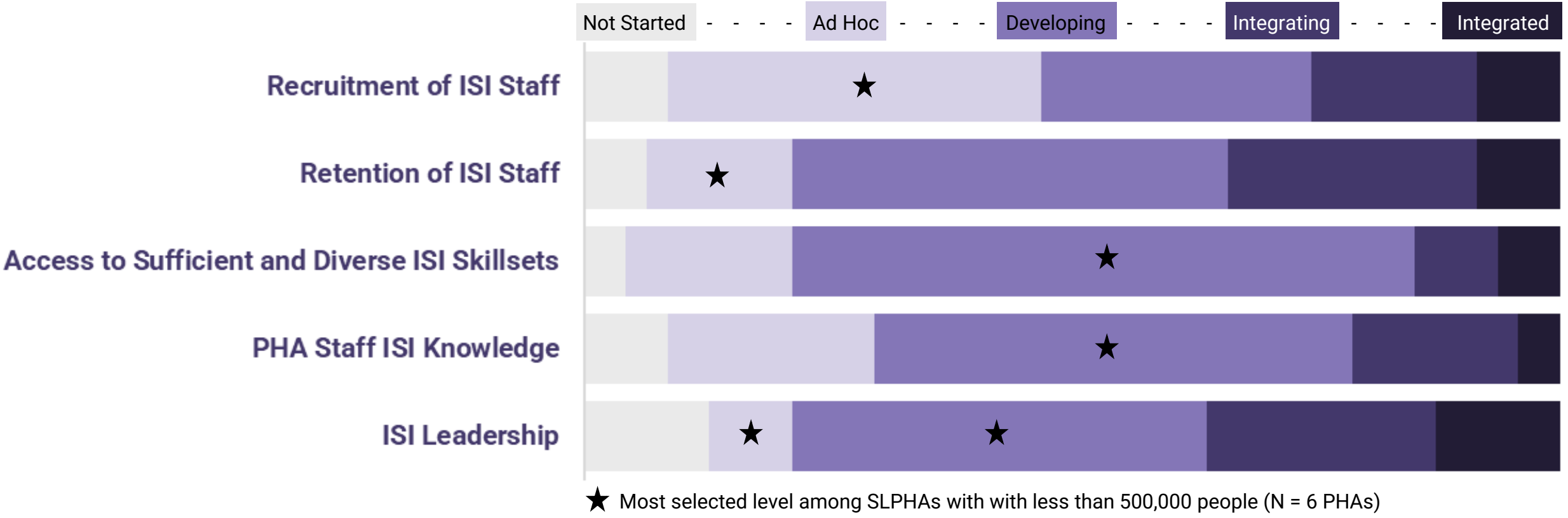
Workforce

N=47 WAI PHAs



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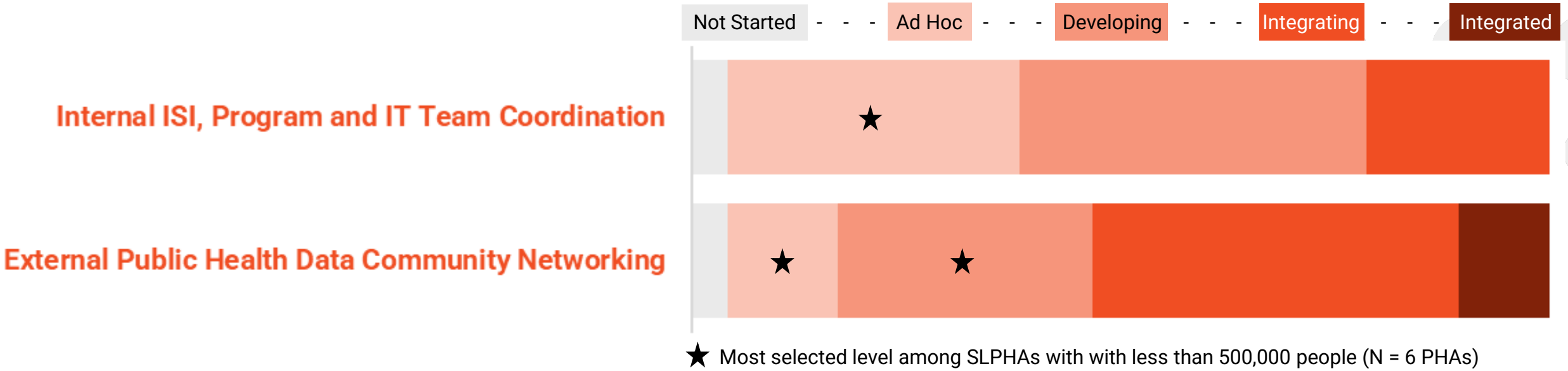
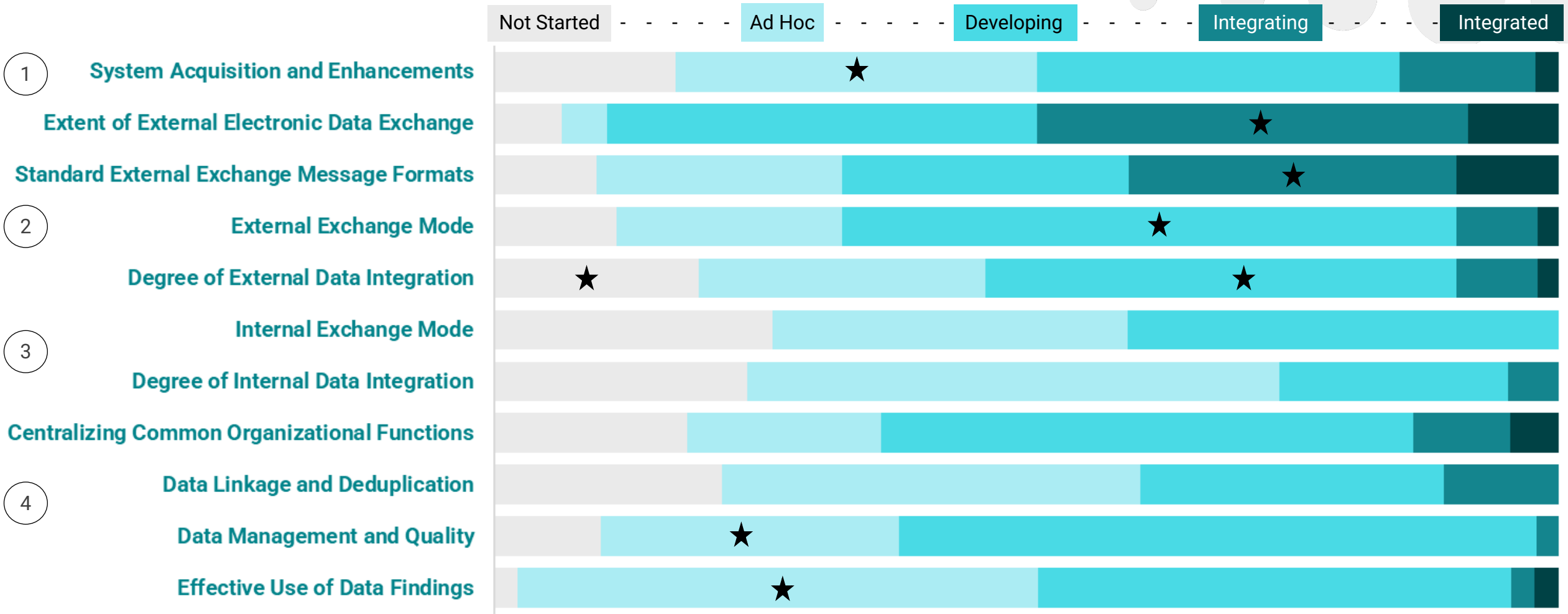
Partnerships and Networks

N=47 WAI PHAs



Technical Capabilities

N varies by capability, see footnotes



★ Most selected level among SLPHAs with less than 500,000 people (N = 6 PHAs; not shown if <4 projects)

1. N=47 PHAs (assessed by all WAI PHAs)
2. External data exchange: N=52 projects across 33 PHAs; 4 SLPHA projects
3. Internal data exchange: N=42 projects across 29 PHAs; 2 SLPHA projects
4. N=44 centralizing, 28 linkage, 50 data management and 45 effective use projects across 45 PHAs; and 2, 3, 5 and 4 projects, respectively, across 6 SLPHAs

Capabilities within 2, 3 and 4 only assessed for data systems directly impacted by WAI projects

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Acknowledgements

We thank our partners and colleagues who contributed to development of the WAI Maturity Model, including:

- Centers for Disease Control and Prevention (CDC) Office of Public Health Data, Surveillance and Technology (OPHDST)
- Aasa Dahlberg Schmit (HLN Consulting, LLC)
- City of San Antonio Metropolitan Health District
- Cleveland Department of Public Health
- Great Plains Tribal Leaders Health Board
- Pima County Health Department
- Our CDC Foundation colleagues and all WAI PHAs

The model reflected on a range of scholarship, including work from:

- National Association of County and City Health Officials (NACCHO)
- Public Health Informatics Institute (PHII)
- CDC's OPHDST
- Association of State and Territorial Health Officials (ASTHO)

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Resources: Model Development

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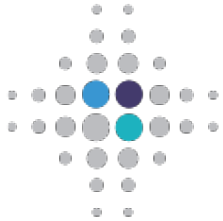

CDC Foundation | WAI WORKFORCE ACCELERATION INITIATIVE

cdcfoundation.org/workforceacceleration

Contacts:
Pam Roesch: proesch@cdcfoundation.org
Joe Gibson: jgibson@cdcfoundation.org

Appendix – Extra Information

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[Extra Example] Technology Capability
4.2 Extent of External Electronic Data Exchange

Effectively sending and receiving electronic data to/from external partners.

Not Started: No data is sent and/or received from external partners.

Ad Hoc: Sends or receives non-electronic data, such as via email or fax.

Developing (Early): Sends and/or receives electronic data with one or two external partners.

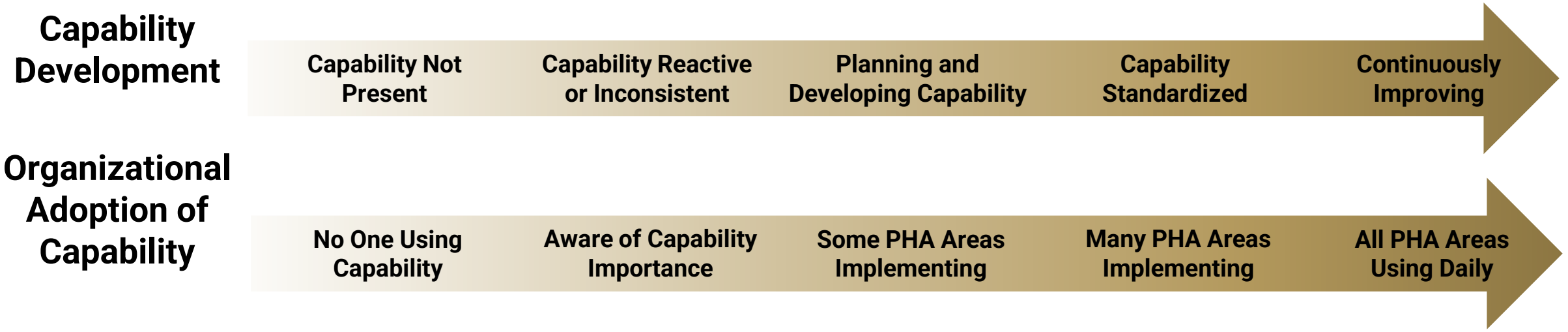
Developing (Mature): Sends and/or receives electronic data with three to five external partners and may send and/or receive electronic data for more than one data type.

Integrating: Sends and/or receives electronic data with three or more external partners and for two or more data types.

Integrated: Routinely sends and/or receives electronic data for all major data types where electronic data exchange is appropriate. Improves exchanges over time.

Detailed Capability Scale

Level 1	Level 2	Level 3	Level 4	Level 5
Not Started	Ad Hoc and Individual	Developing and Strategic	Standardized and Integrating	Ongoing Improvement and Full Integration



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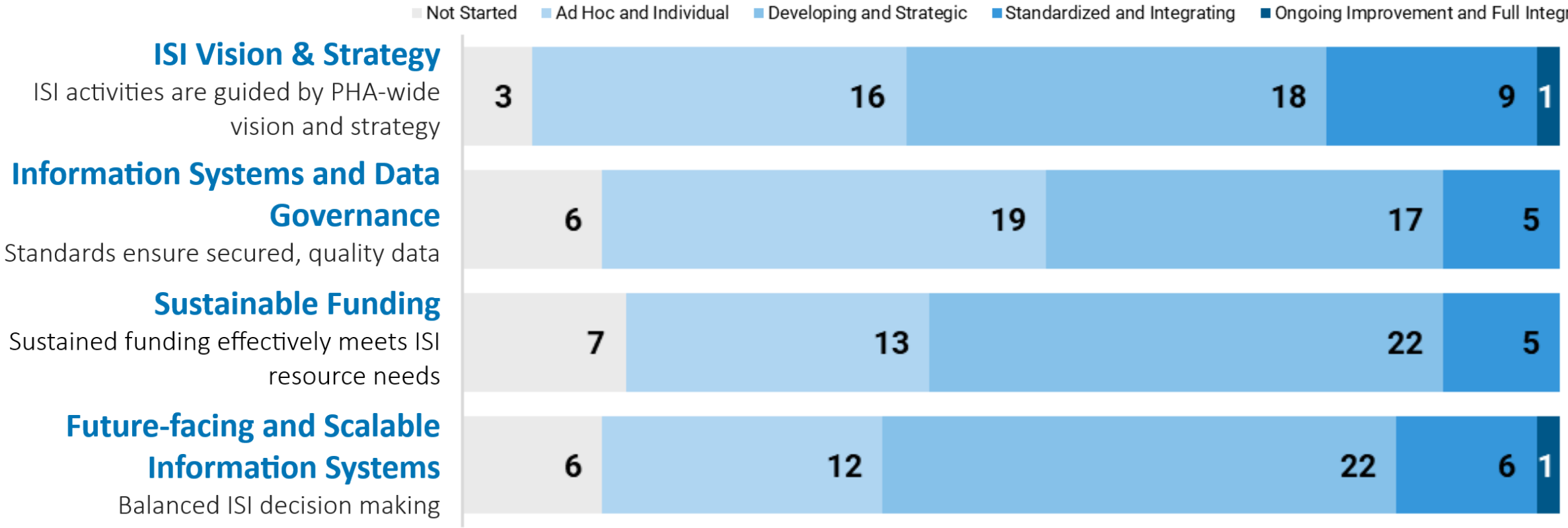
Information Systems Improvement (ISI) Strategy and Governance

PHA ISI activities follow a strategic, agency-wide approach that is well-governed, sustainably funded and intentionally designed.



N=47 WAI PHAs

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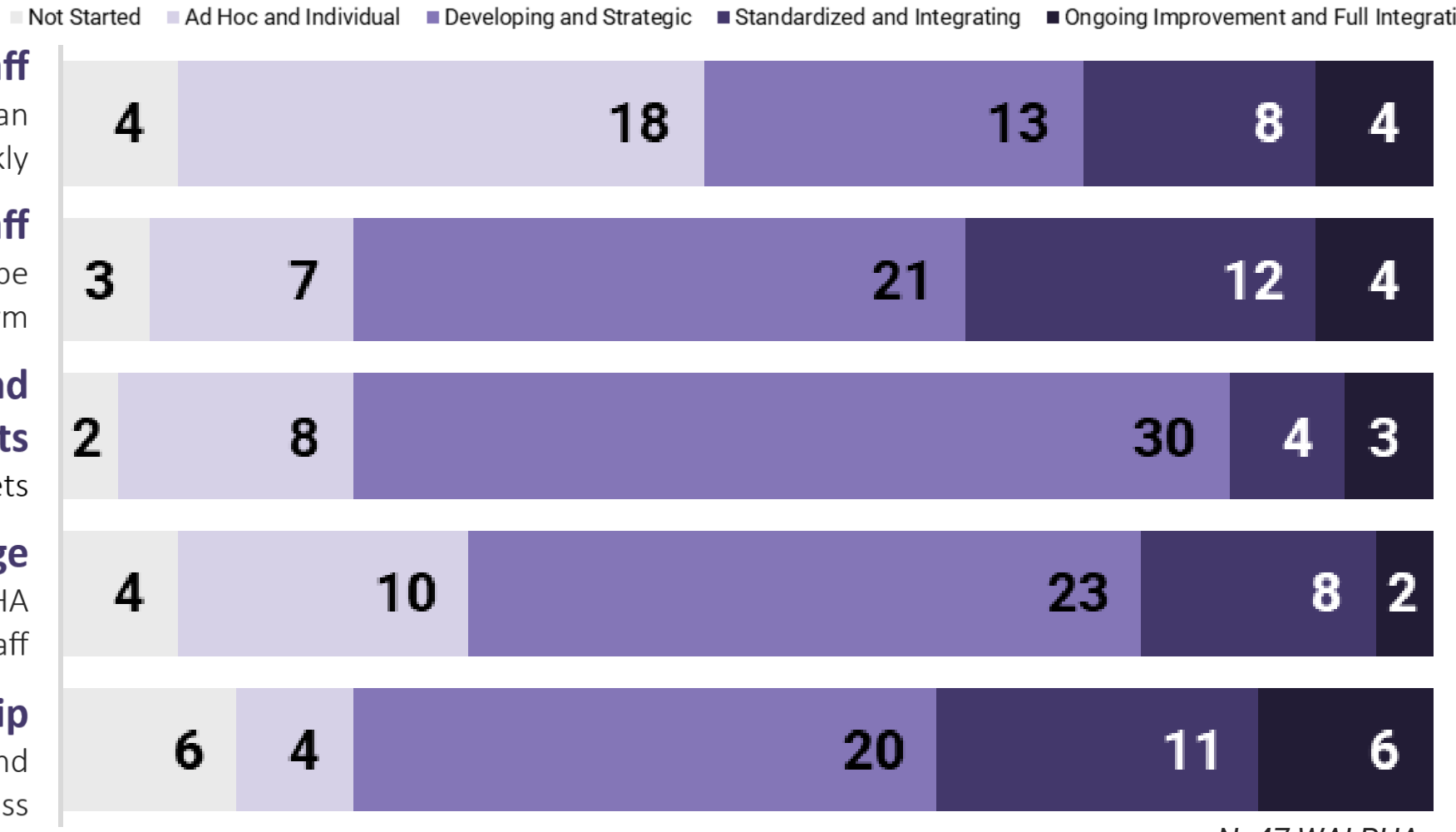
Workforce

PHA can recruit, hire and retain staff and contractors with the skills needed to carry out its vision and strategy.



N=47 WAI PHAs

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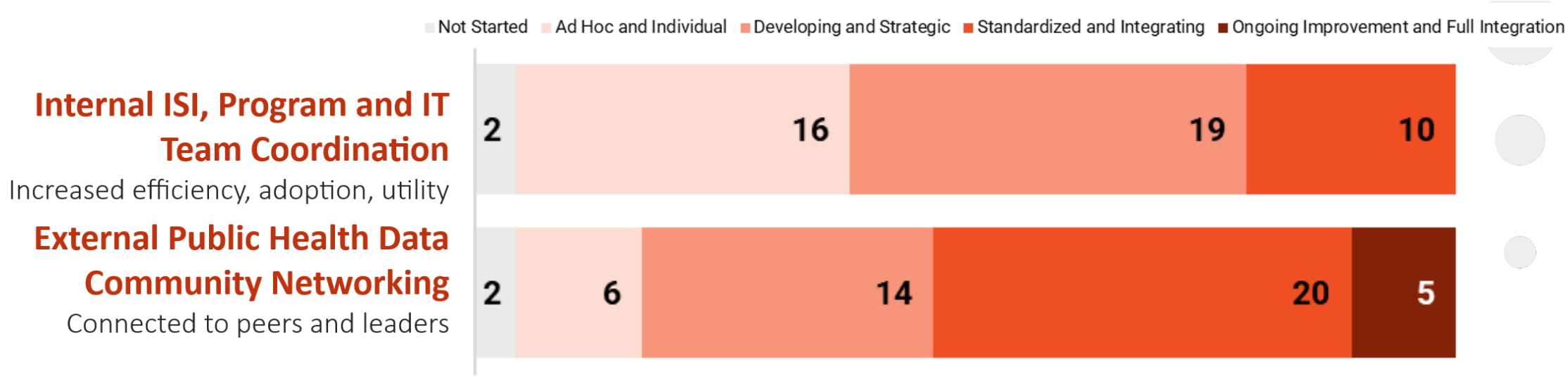
Partnerships and Networks

PHA leverages internal relationships to drive change and external networks to align with broad public health priorities.



N=47 WAI PHAs

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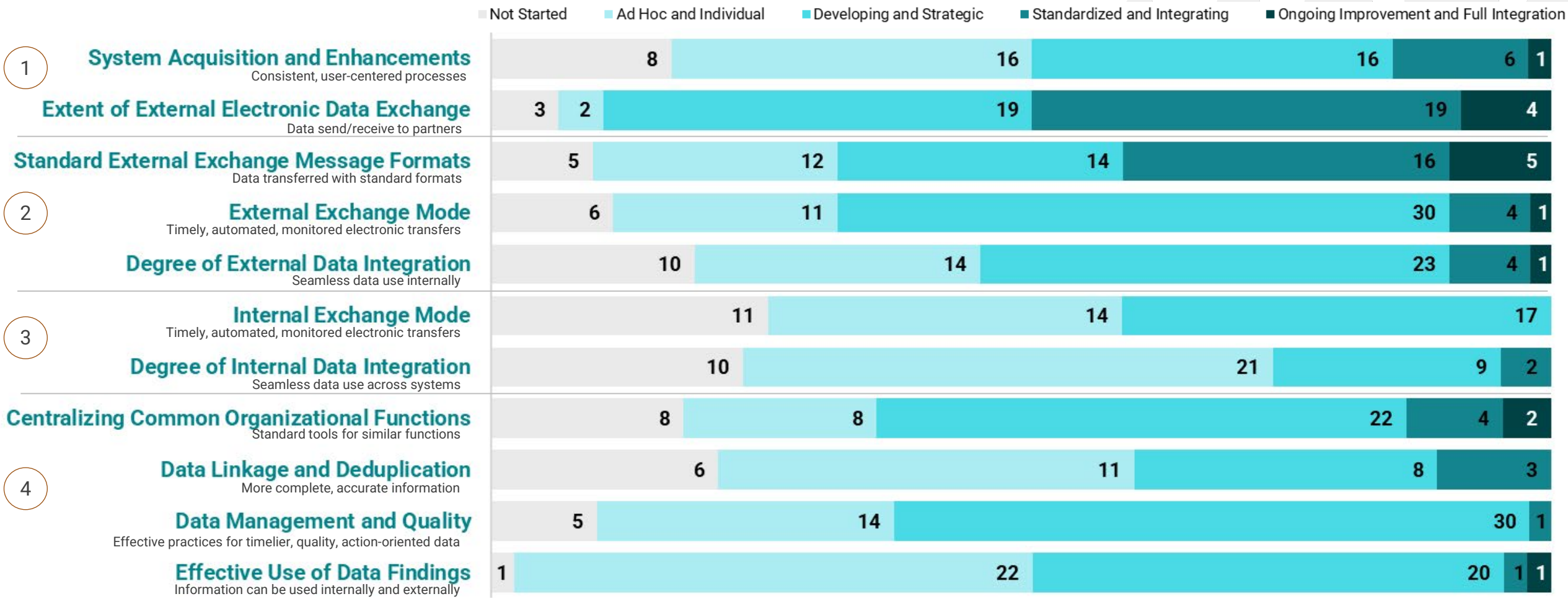
Technical Capabilities

PHA can take advantage of technology to enable real-time data that support mission-critical PHA functions.



N=See Footnotes

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CITY OF CLEVELAND
Mayor Justin M. Bibb
PUBLIC HEALTH

Using the Workforce Acceleration Initiative Maturity Model

Office of Epidemiology and Population Health

Vinh Trinh, MPH

Epidemiologist

May 21, 2026

Goals of this Presentation

- Small & medium local health departments and practical approaches to strengthening surveillance and informatics capacity
- Share real-world experiences using the **CDC Foundation's WAI Public Health Agency Information Infrastructure Maturity Model** to:
  - *assess current capabilities*
  - *identify achievable improvements*
  - *support planning and leadership conversations with limited staff and resources*
- Challenges encountered
- Strategies that worked
- Practical lessons learned

Our Context

City of Cleveland Open Data Policy & Governance Framework

City of Cleveland, OH

- Cleveland Department of Public Health
  - *Office of Epidemiology and Population Health*
- Information and Technology
  - *Office of Urban Analytics and Innovation*

City of Cleveland Open Data Policy & Governance Framework

The City of Cleveland recognizes data as a strategic asset that is critical to meeting the demands of a modern government. By leveraging data as a strategic asset, the City can address challenges proactively, optimize resource allocation, improve service delivery, and increase transparency. And as a strategic asset, the City must proactively manage and maintain our data much like our capital and financial assets. This Open Data Policy and Governance Framework aims to accomplish those ends and is issued in accordance and in furtherance of Executive Order 2023-01. Through this policy, the City commits to managing data and information in accordance with current industry practices; increasing institution-wide understanding of our data assets and the purposes they serve; and using data to proactively plan for and meet the needs of an ever-changing city. At its core, the framework established through this policy appropriately manages data as a strategic asset of the City of Cleveland. All City of Cleveland departments must adopt this framework to support the ongoing, proactive management of data, and all City of Cleveland officials and employees are directed to abide by it. The framework includes:

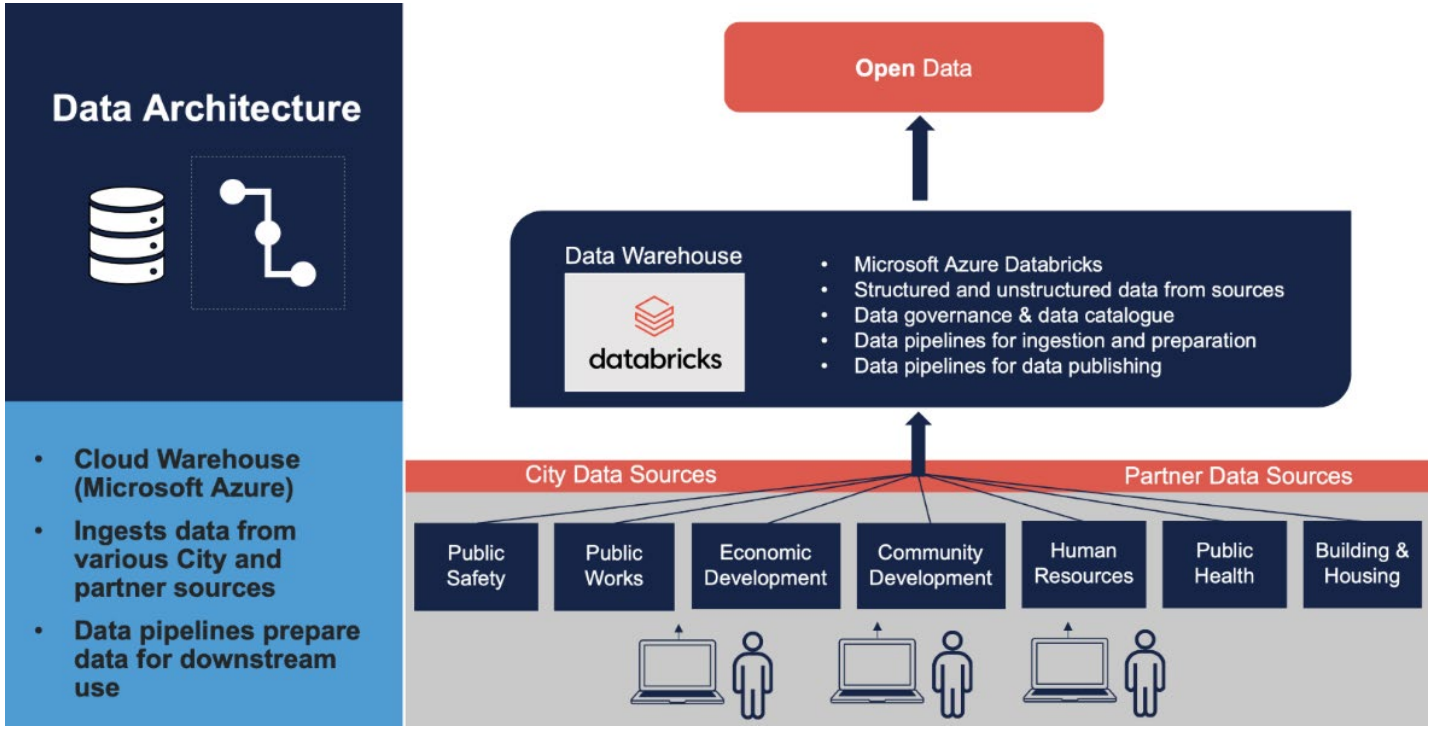
- Data Inventory: Identify and classify all city-owned and managed data in data sources and datasets as part of an annual inventory.
- Data Standard: Set standards for data including data quality, security, and sharing.
- Data Use & Infrastructure: Implement tools and processes to facilitate interdepartmental and public data sharing as well as the use of data for decision-making.
- Open Data: Implement standards, processes, and technology for appropriately sharing data publicly.
- Governance Board: Establish a Data Governance Board to provide thought leadership and advice related to the City's data.

This policy applies to all information resources operated by City departments, offices, and commissions working on behalf of the City of Cleveland. This includes all data regularly maintained by, created by or on behalf of, and owned or licensed by a department in non-narrative, alphanumeric, geospatial or other relevant format. Data includes any subset of information, whether quantitative or qualitative, and all forms of data including those in electronic form and non-electronic form. Data is an asset independent of the systems or formats in which it resides.

https://data.clevelandohio.gov/documents/5e6a330f884b4705b0c94cf38325f6d9/explore

Office of Urban Analytics and Innovation

- Introduced centralized tools that would impact our office's work:
  - *Data Lakehouse*
    - Cloud provider: Azure Commercial
    - Data & Analytics Platform: Databricks
  - *Power BI*
  - *GitHub*
  - *Cleveland Open Data - ESRI's ArcGIS Online Hub*
- Focused on cross-departmental projects such as 311—a single number you can call to report non-emergency issues



Implications

- Systems improvement for CDPH was mandated at the enterprise level—all departments of the city required to organize under the new framework
- For Urban AI the initial years of work have been to build the tool, onboard and centralize critical enterprise data, and focus on data impacting city services to residents
- Urban AI's information systems improvements at CDPH included projects that focused on environmental complaints, housing-related datasets, and licensing (Divisions of Environment and Air Quality)
- Office of Epidemiology and Population Health (OEPH) ready for systems improvements but did not have the in-house skills to use the new tools
    - *Data on health statuses of populations and specific programs not prioritized initially*

WAI Project Overview

Current and Future State of Public Health Data at CDPH

Current	Future
Data are downloaded manually and stored onto network drives in various project folders	Data are ingested into data lakehouse with scheduled workflows and organized in the Unity Catalog
Epidemiologists spend considerable amounts of time on data management, data projects are managed using shared drives and can be lost in nested folders	Commonly produced metrics are automated; epidemiologists spend more time on subject matter expertise, analyses, and communication with partners
Sharing data with partners is ad hoc	Partners may self-serve commonly requested data through the open data portal

CDPH's Goals

1. Goal 1: Utilizing existing city infrastructure to warehouse data sources, automate linkages of health data to geocodes, and version control data management/visualization scripts for reports.
2. Goal 2: Accelerate use of automated solutions to support infectious disease case investigations and advance health equity through
    - *streamlining ancillary data-related work around disease investigations, infant birth and mortality data validation and linkage,*
    - *providing epidemiologists spending more time to build subject matter expertise over multiple health subjects instead of data cleaning, move beyond descriptive statistical reporting, and develop data collection methods to investigate questions not answered in existing surveillance datasets.*
3. Goal 3: Visualize and share insights to inform public health action by automating public health data onto the Open Data Portal and creating Power BI dashboards for public or internal use.
4. Goal 4: Advance more open and interoperable public health data by getting data onto Open Data Portal, linking public health data to other city data assets.

Projects

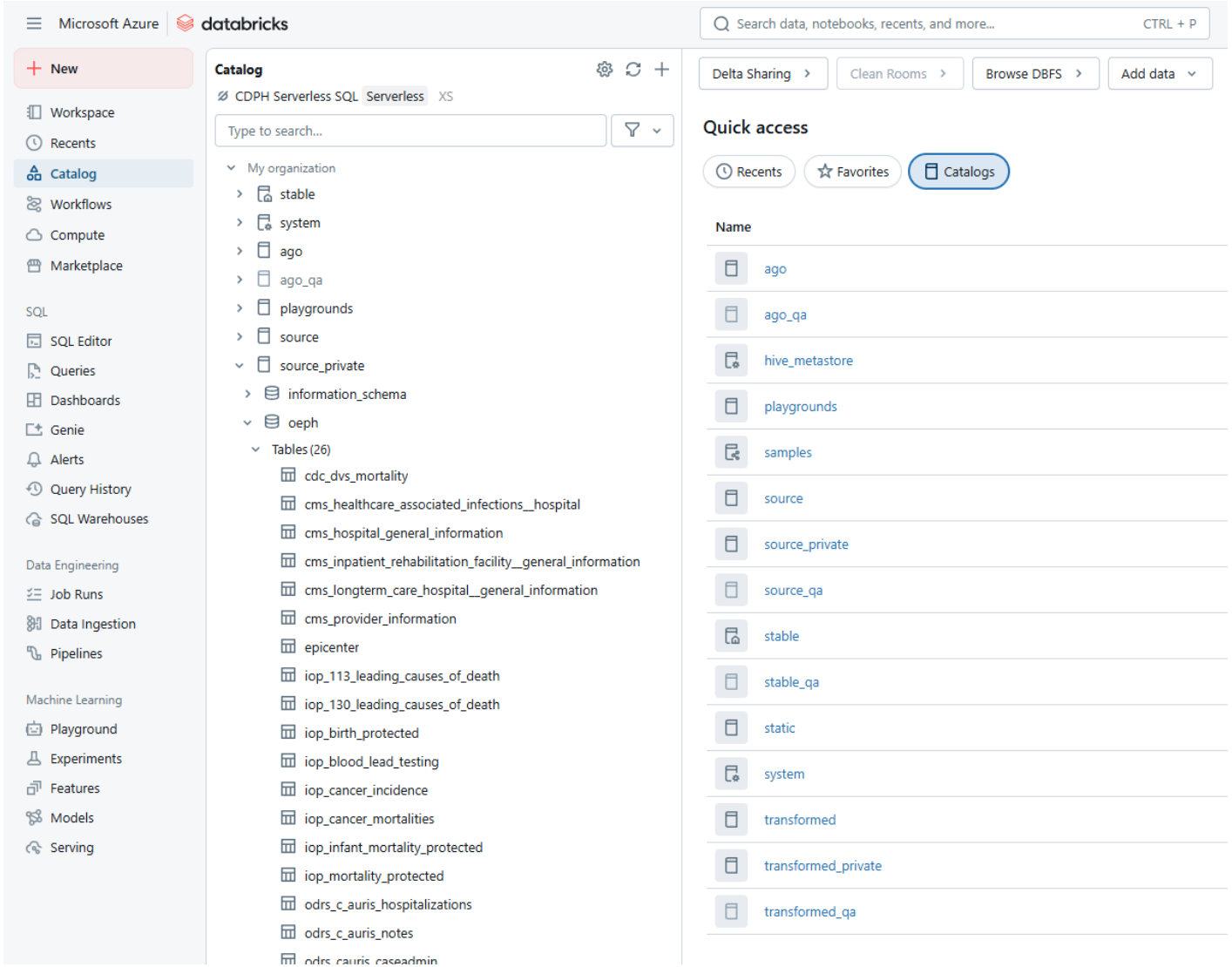
- Ingestion of surveillance data sources into Databricks
  - *ODRS*
  - *Vital Statistics*
  - *OCISS*
  - *Healthy Homes Lead Poisoning Prevention Program*
  - *EpiCenter (actually automated via secure file transfer protocol from Health Monitoring Systems)*
- Ingestion of publicly available data sources for standardization or comparisons
  - *American Community Survey*
  - *Center for Medicaid and Medicare Services*
  - *CDC WONDER datasets*

Projects

- Dashboards and Open Data Releases
  - *Environmental Nuisance Complaints*
  - *Birth and Mortality*
  - *Influenza-Related Illnesses (in-progress)*
  - *Opioid & Overdose (starting)*
- Trainings
  - *Databricks*
  - SQL
  - *Python (PySpark)*
  - *Power BI*

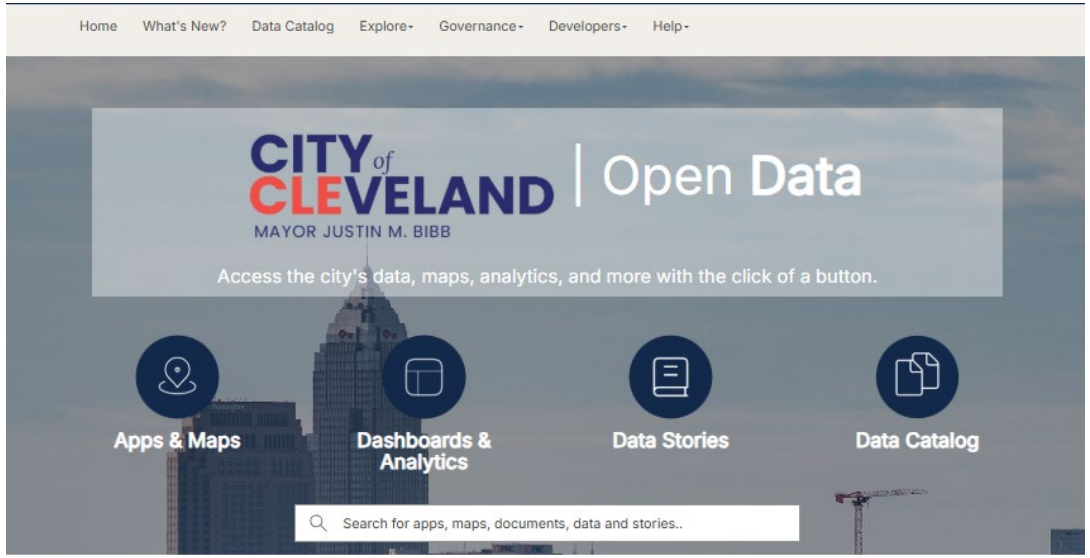
Data Platform: Databricks

- Catalog of data sources, transformations and aggregations, analytic subsets, etc.
- Workspace for writing code for data cleaning, transformation and analysis; connects with GitHub to organize and version control code
- Automation by scheduling jobs through Workflows
- Contains enterprise data such as EMS and Building and Housing—permission required for some



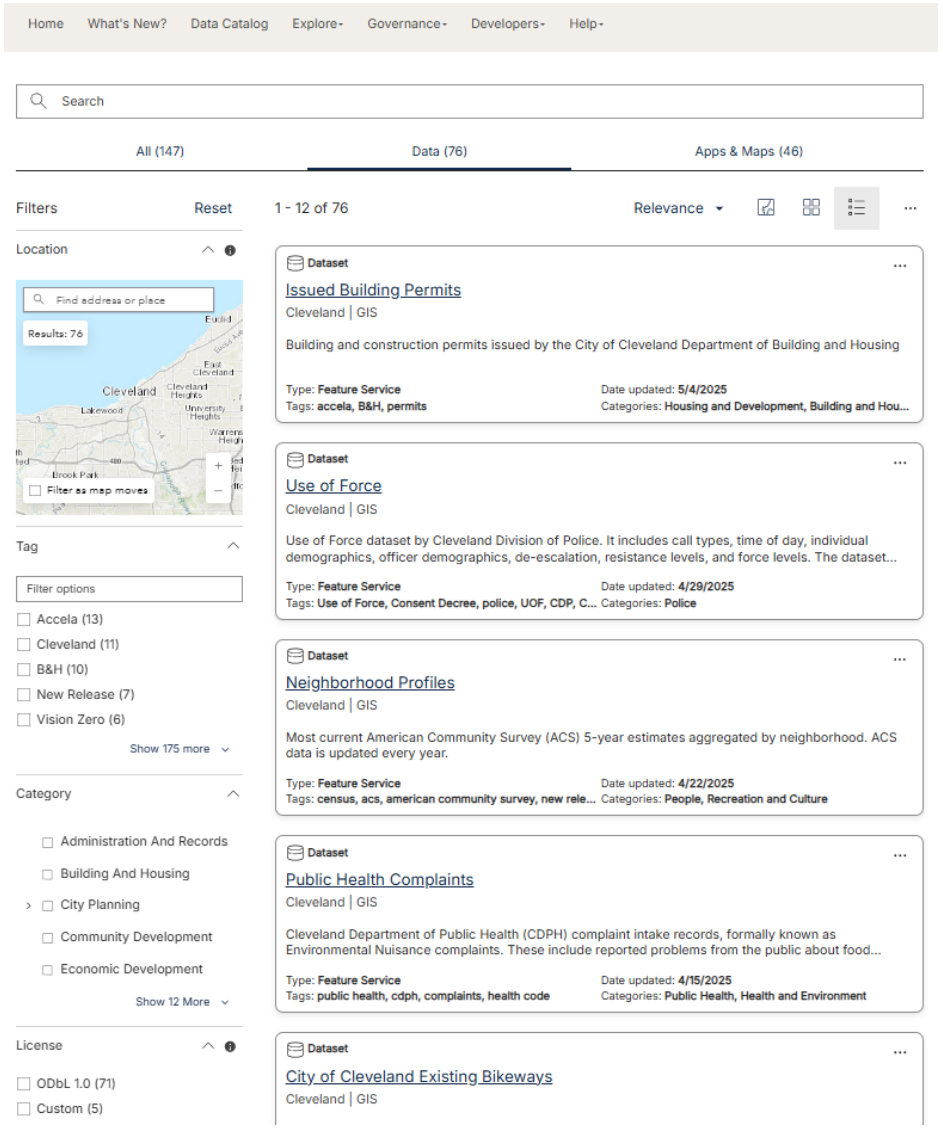
Cleveland Open Data

Landing Page



Cleveland Open Data

Datasets & Apps (Dashboards)



Sustainability

- Epi team gains knowledge on working alongside data engineers and analysts
- Have professionals with technical experience establish new automation workflows using city infrastructure and orient PHA staff to new workflows
- Build foundation for improved informatics work to continue at PHA independently

Using the Information Infrastructure Maturity Model

Maturity Model Section 1: Information Systems Improvement (ISI) Strategy and Governance

1.1 ISI VISION AND STRATEGY
Capability: Our PHA's information system improvement activities are guided by a PHA-wide vision and strategy that encompasses all major PHA information systems.

Scale:

◯ Not Started: No vision or strategy encompassing all major PHA information systems (i.e., PHA-wide vision and strategy) has been defined.
◯ Ad Hoc and Individual: A PHA-wide vision and strategy may be understood among those making decisions about the PHA's information systems but is not written and/or not informed by affected parties. PHAs within this category may have written strategies for individual systems or types of data but not a PHA-wide ISI vision and strategy.
◯ Developing and Strategic: The PHA is developing a PHA-wide ISI vision and strategy. This development is informed by feedback from affected parties. The planning process has leadership buy-in.
⊗ Standardized and Integrating: The PHA has developed a PHA-wide ISI vision and strategy and is implementing the vision and strategy. The strategy has leadership buy-in and has been communicated to affected parties within the PHA. The PHA is in the early stages of using the ISI strategy to guide PHA information system decisions and project workplans (e.g., not all program teams may be familiar with and/or using the ISI strategy).
◯ Ongoing Improvement and Full Integration: The PHA has implemented significant portions of the ISI strategy. Most or all PHA information system decisions and project workplans are guided by the PHA-wide ISI vision and strategy. The PHA uses relevant and engaged approaches to periodically assess and evolve the ISI strategy with input from affected parties.

Information Systems Improvement (ISI) Strategy and Governance

PHA ISI activities follow a strategic, agency-wide approach that is well-governed, sustainably funded and intentionally designed.

	Not Started	Ad Hoc & Individual	Developing & Strategic	Standardized & Integrating	Ongoing Improvement & Full Integration
ISI Vision & Strategy ISI activities are guided by PHA-wide vision and strategy		T	A	*	
Information Systems and Data Governance Standards ensure secured, quality data	T^	* T^ A			
Sustainable Funding Sustained funding effectively meets ISI resource needs		* T	A		
Future-facing and Scalable Information Systems Balanced ISI decision making		* T	A		

^ T listed in two levels for Governance because an equal number of PHAs selected each level.

Workforce

PHA can recruit, hire and retain staff and contractors with the skills needed to carry out its vision and strategy.

	Not Started	Ad Hoc & Individual	Developing & Strategic	Standardized & Integrating	Ongoing Improvement & Full Integration
Recruitment of ISI Staff Qualified and needed ISI personnel can be secured quickly		* T A			
Retention of ISI Staff High-performing ISI personnel can be retained long term		* T	A		
Access to Sufficient and Diverse ISI Skillsets Readily accessible ISI skillsets			* T A		
PHA Staff ISI Knowledge Effective use of ISI solutions by PHA management and staff			* T A		
ISI Leadership Sufficient capacity, experience and influence to ensure ISI progress	*	T	A		

Technical Capabilities

PHA can take advantage of technology to enable real-time data that support mission-critical PHA functions.

PHA-Wide Technical Capabilities

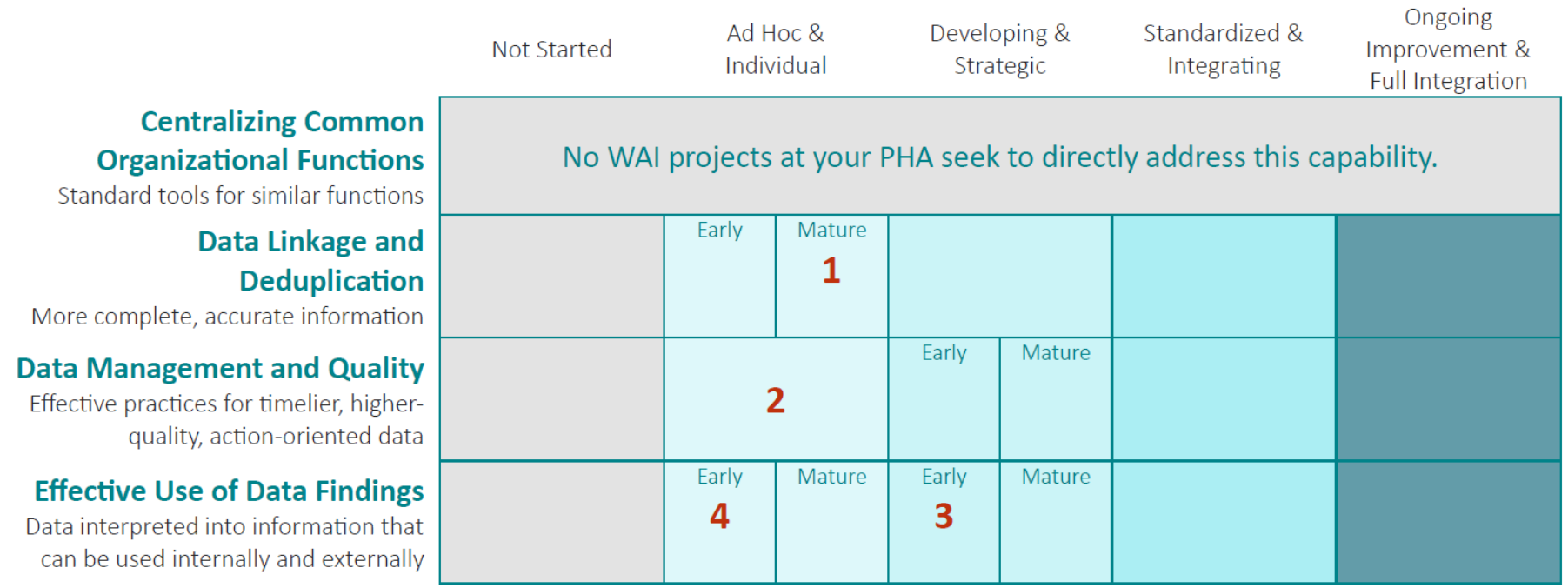
	Not Started	Ad Hoc & Individual	Developing & Strategic		Standardized & Integrating	Ongoing Improvement & Full Integration
System Acquisition and Enhancements Consistent, user-centered processes		* T A^	A^			
Extent of External Electronic Data Exchange Extent of data send/receipt to partners			Early * T^	Mature	T^ A	

^ A and T listed in two levels for capabilities where an equal number of PHAs selected each level.

Additional Technical Capabilities*

PHAs pursue improvements to make data more organized, accurate, timely and trustworthy for analysis and decision making. [a]

1 = Your WAI Project #1: **Automating Data Integration of different data sources into Cleveland Data Warehouse**
2 = Your WAI Project #2: **Standard Operating Procedures for data extraction, cleaning and storage**
3 = Your WAI Project #3: **Vital Statistics and Substance Use and Overdose public-facing dashboards and open datasets**
4 = Your WAI Project #4: **Healthcare Acquired Infections dashboard for tracking outbreaks**



[a] *Not all projects will be listed on every capability scale.*

Achievable Improvements

- Improvements that were required city-wide and facilitated by Office of Urban Analytics and Innovation
  - *Establish data governance board with representat to decide on policies*
  - *Create and regularly update data and systems inventories*
- Improvements epi team were responsible for
  - *Training and Skills Improvement—Epidemiologists become users of Databricks*
  - *Organize surveillance data sources in the Catalog—one-stop shop for all raw data, cleaned analytic subsets, and aggregations*
  - *Organize code in Workspace and GitHub*
  - *Turn frequently requested data into open datasets on Cleveland Open Data using the new data infrastructure*

We used the results of the aturity Model to:

- Frame conversations with leadership on information systems improvements
- Enrich our office's strategic planning with goals that move the needle

Challenges Encountered, Strategies that Worked, & Practical Lessons Learned

Challenges

- No “ISI leader” responsible for ensuring staff develop the appropriate informatics skillsets; informing and guiding ISI decisions made by programs, ISI staff and leadership; etc.
- Working with tech and data professionals from outside of public health, both from Office of Urban Analytics and WAI placements
- Upskilling PHA staff to become users—we had a new information system but not the training needed

Practical Lessons Learned

- The data modernization conversation was too abstract
  - *I was asking for coordination on data when the other programs and divisions of the health department are operating in a mostly ad hoc fashion*
- We started with what we knew needed to improve, and a deeper understanding of data and systems maturity followed
  - *As we understood more, I slowly introduced the ideas and tools to other users in the department—informally shared things we were learning and doing*
- We stayed flexible
  - *Early on, I had a lot of plans for how I thought projects would go, but there were many novel challenges that we hadn't encountered before that were specific to how we receive data and how our organization's new tools functioned*

Practical Lessons Learned

- Workforce Development
  - *I spent a year with WAI's data engineer and business analyst. The rest of my team has not.*
  - *We hosted an in-house workshop, DataFest, to give everyone the skills to use the data platform: Databricks, SQL, PySpark, Power BI.*
  - *Practical lesson: you have to teach the User Interface. It makes learning everything else harder if you're fighting the UI.*
  - *Practical lesson: analogies to the existing process*
  - *Practical lesson: team needed protected time to learn*

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Ask the audience

Structure: Four Dimensions, 22 Capabilities

Information Systems Improvement (ISI) Strategy and Governance

- Vision and Strategy
- Governance
- Funding
- Future-ready, Scalable

Workforce

- Specialist Recruitment
- Specialist Retention
- Sufficient and Diverse Skillsets
- General Staff Knowledge
- Leadership

Partnerships and Networks

- Coordination with Programs and IT Teams
- External Partnerships

Technical Capabilities

- Acquisition
- Internal and External Data Exchange
- Tool Centralization
- Data Linkage, Management and Quality
- Analysis and Use of Findings

Capability Scale Levels

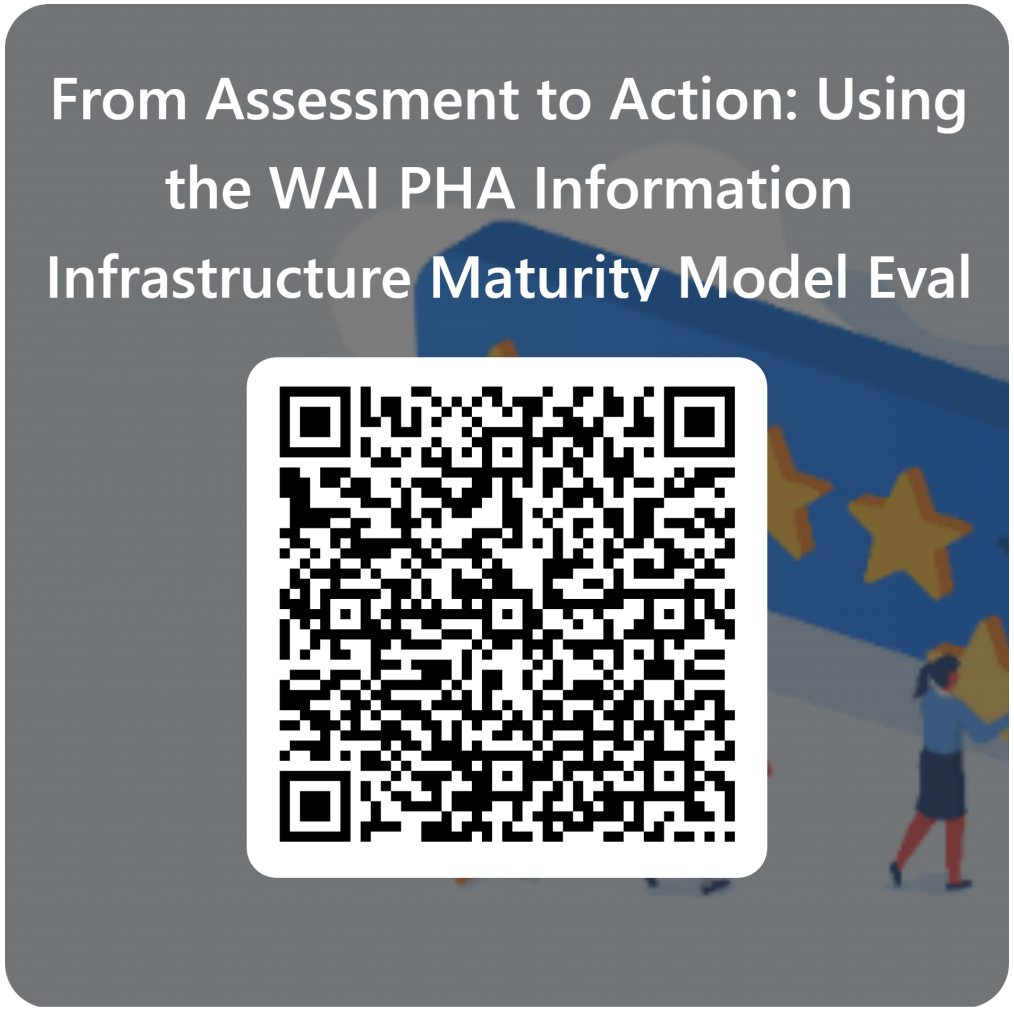
1. **Not Started**
2. **Ad Hoc,** Program-specific
3. **Developing** Strategically PHA-wide
4. **Integrating** PHA-wide, Standardized
5. **Integrated** PHA-wide, Continuous Improvement

What additional dimensions would you like to see included in the WAI PHA Information Infrastructure Maturity model?

Ask the audience

What are the challenges for the next step?

Evaluation



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Closing

Thank you!

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