

**From Assessment to Action:**

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

**April 21, 2026**

**3:00 – 4:30 PM ET**



# Agenda

---

Welcome

---

General Information

---

Learning Objectives

---

Poll

---

CDC Foundation on WAI PHA Information Infrastructure Maturity Model

---

Local Health Perspective - Mecklenburg County, NC

---

Q&A

---

Facilitated Discussion

---

Evaluation

---

# 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.

- ✓ | Advocacy
- ✓ | Partnerships
- ✓ | Funding
- ✓ | Training and Education
- ✓ | Networking
- ✓ | Resources, tools, and technical assistance

# General Information



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



**Audio:** All participants 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.

# 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



#466489511



# Poll

Add



# 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 NU600E000104, funded by the Centers for Disease Control and Prevention through the Association of Public Health Laboratories.

Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention, the Department of Health and Human Services, the CDC Foundation or the Association of Public Health Laboratories.

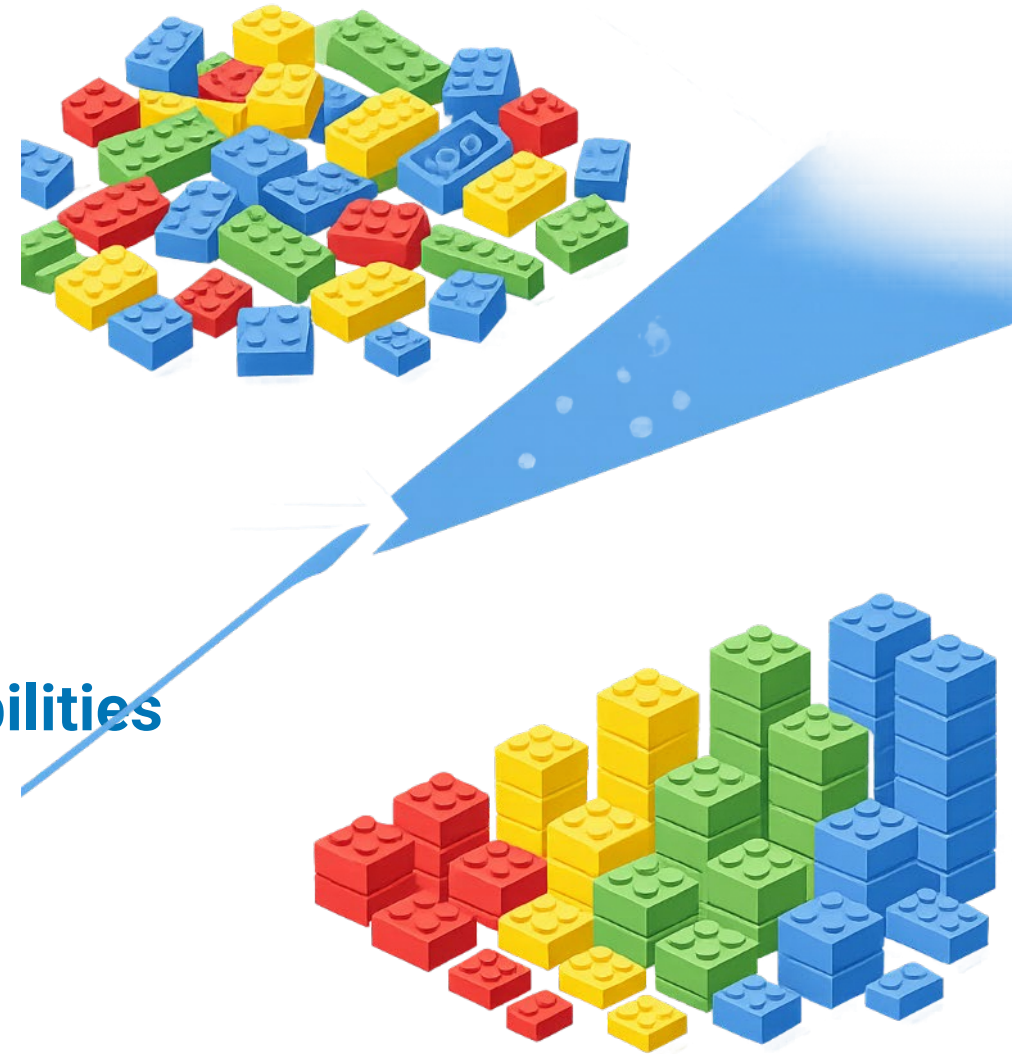
# Why Use Maturity Models?

- **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



# 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



# 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



# 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



# 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.

# 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.



# Information Systems Improvement (ISI) Strategy and Governance

N=47 WAI PHAs

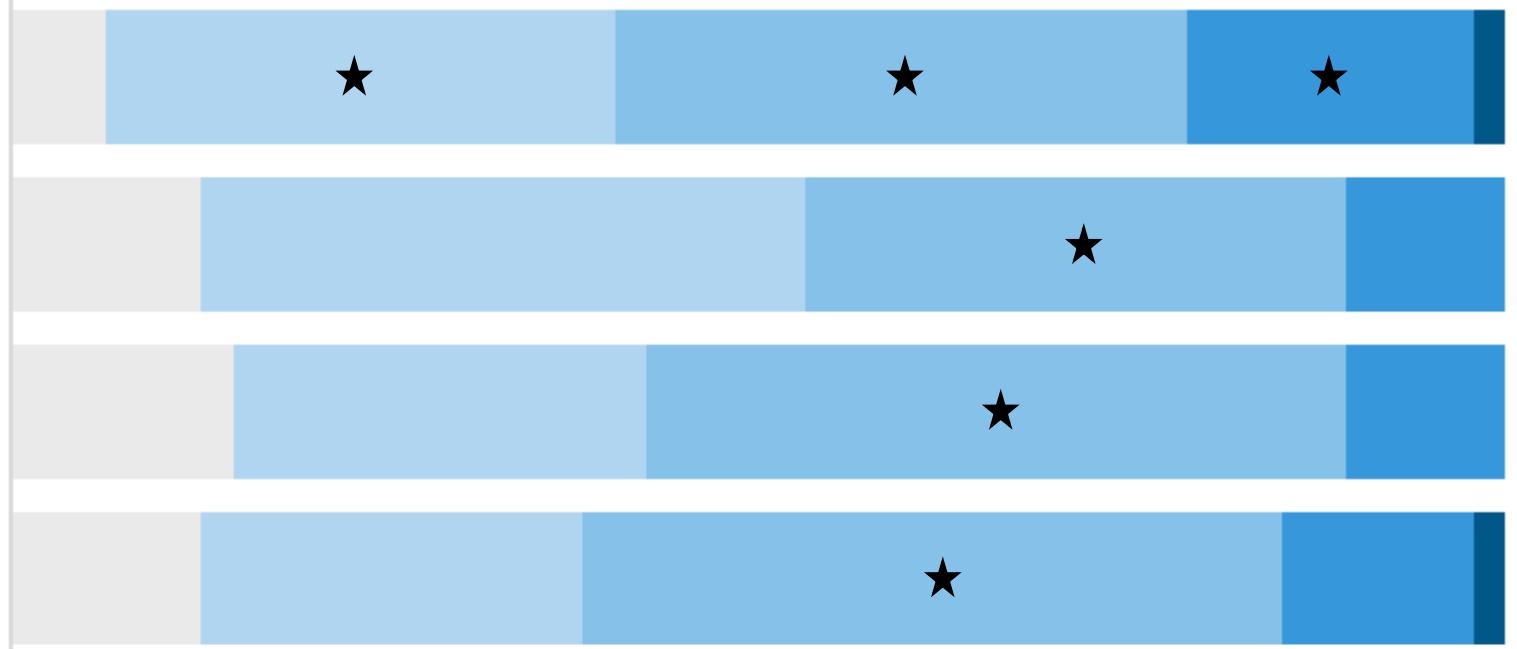
Not Started - - - - Ad Hoc - - - - Developing - - - - Integrating - - - - Integrated

ISI Vision and Strategy

Information Systems and Data Governance

Sustainable Funding

Future-facing and Scalable Information Systems

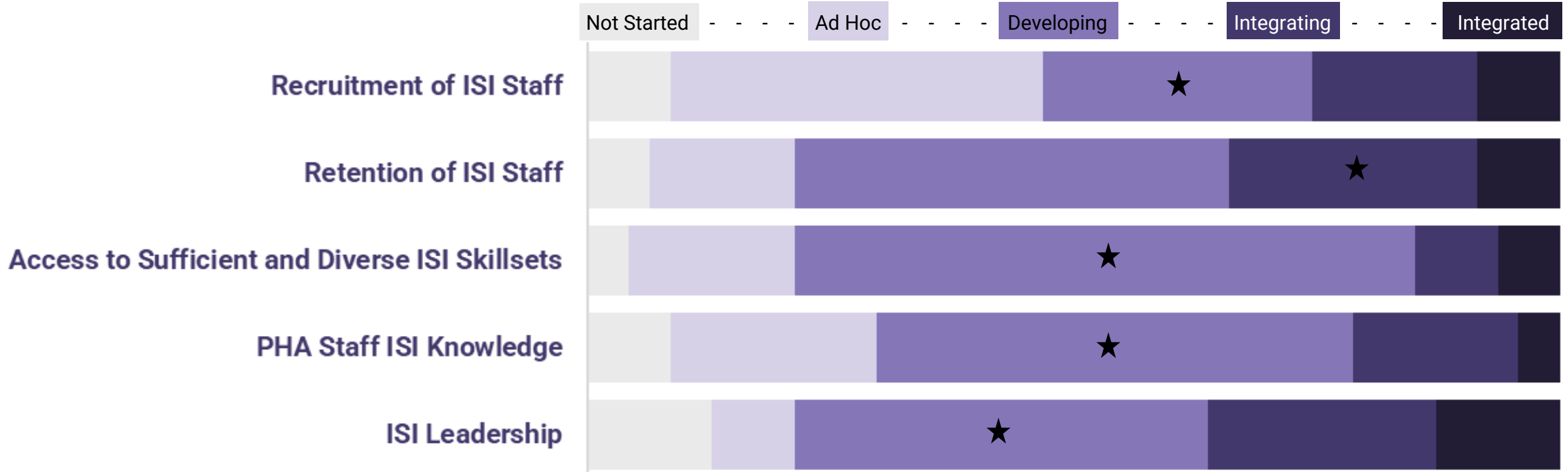


★ Most selected level among large, local WAI PHAs (LLPHAs) with more than 1 million people (N = 9 PHAs)



# Workforce

N=47 WAI PHAs

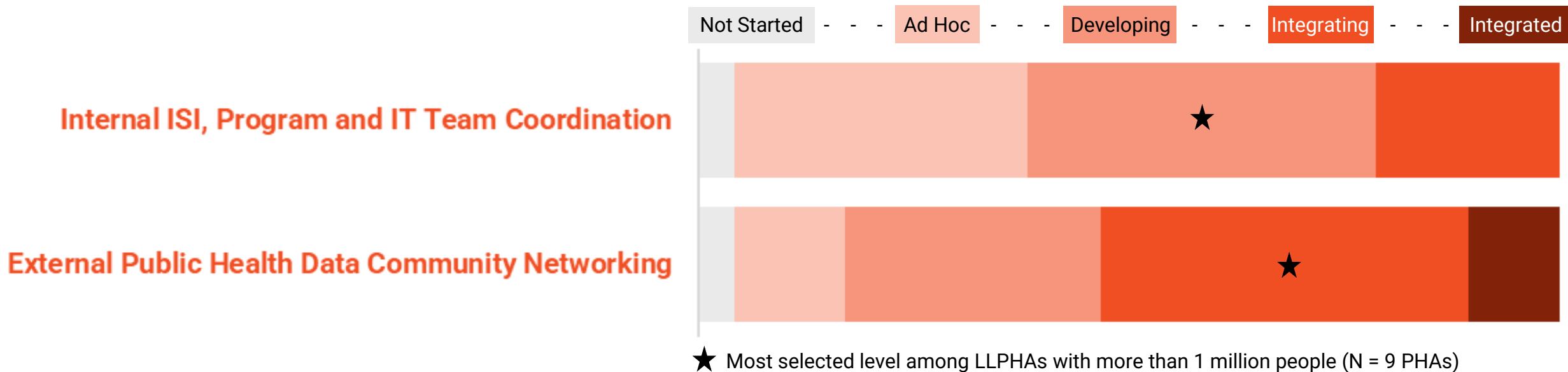


★ Most selected level among LLPHAs with more than 1 million people (N = 9 PHAs)



# Partnerships and Networks

N=47 WAI PHAs

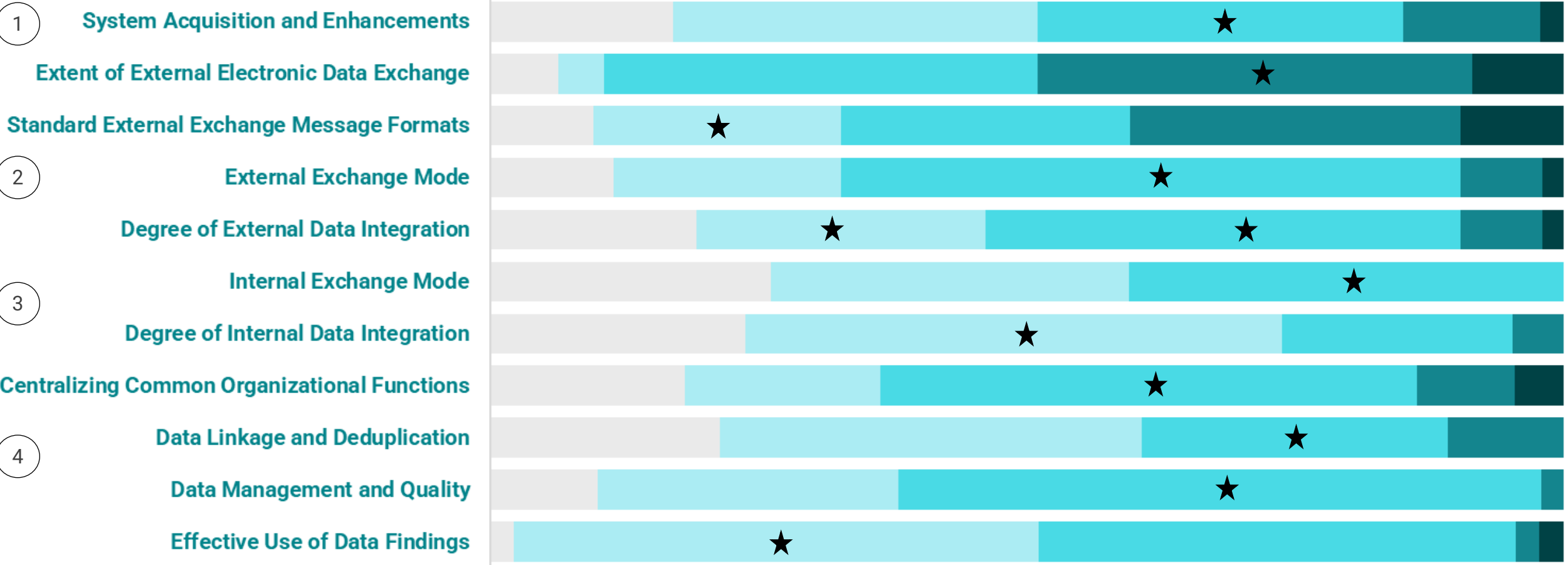




# Technical Capabilities

*N varies by capability, see footnotes*

Not Started - - - - - Ad Hoc - - - - - Developing - - - - - Integrating - - - - - Integrated



★ Most selected level among LLPHAS with more than 1 million people (N = 9 PHAs)

① N=47 PHAs (assessed by all WAI PHAs)

② External data exchange: N=52 projects across 33 PHAs; 12 projects across 8 LLPHAS

③ Internal data exchange: N=42 projects across 29 PHAs; 9 projects across 7 LLPHAS

④ N=44 centralizing, 28 linkage, 50 data management and 45 effective use projects across 45 PHAs; and 10, 6, 9 and 9 projects, respectively, across 9 LLPHAS

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

# WAI Maturity Model: Key Takeaways

- **For All 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

# 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)



# Resources: Model Development

1. Bloedorn EE, Kotras DM, Schwartz PJ, Chaney C, Chaney C, Patsis J. (2023). "The MITRE AI Maturity Model and Organizational Assessment Tool Guide: A Path to Successful AI Adoption." Accessed on 11/12/24. Available at: <https://www.mitre.org/sites/default/files/2023-11/PR-22-1879-MITRE-AI-Maturity-Model-and-Organizational-Assessment-Tool-Guide.pdf>.
2. Capability Maturity Model Integration (CMMI) Institute. (2020). "CMMI for Development, Version 2.0." Carnegie Mellon University. Accessed 09/17/24. Available at: <https://cmmiinstitute.com/> with scale levels available at <https://cmmiinstitute.com/learning/appraisals/levels>.
3. Deloitte. (2018). "Digital Maturity Model." Accessed on 11/12/24. Available at: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Technology-Media-Telecommunications/deloitte-digital-maturity-model.pdf>.
4. EDM Council. (2020). "Data Management Capability Assessment Model." Accessed 11/12/24. Available at: <https://edmcouncil.org/frameworks/dcam/>.
5. GSA IT Modernization Centers of Excellence. (N/A). "AI Guide for Government: Organizational Maturity Areas." Accessed on 11/12/24. Available at: <https://coe.gsa.gov/coe/ai-guide-for-government/organizational-maturity-areas/index.html#fn:1>.
6. Healthcare Information and Management Systems Society (HIMSS) Analytics. (2020). "Electronic Medical Record Adoption Model (EMRAM) Overview." Accessed 11/12/24. Available at: <https://www.himss.org/maturity-models/emram/>.
7. Koenders W. (2024). "Data maturity models – Why having the capabilities in place isn't enough." Accessed 08/01/24. Available at: <https://medium.com/@willemkoenders/data-maturity-models-why-having-the-capabilities-in-place-isnt-enough-30edd2634bf6>.
8. Open Data Institute. (2015). "ODI Maturity Model: Guide - Assessing your open data publishing and use." Accessed 11/12/24. Available at: <https://theodi.org/insights/reports/open-data-maturity-model/>.
9. Steenbeek I. (2018). "Data Management Maturity Models: A Comparative Analysis." Accessed 08/01/24. Available at: <https://datacrossroads.nl/2018/12/16/data-management-maturity-models-a-comparative-analysis/>.
10. Swann R and Coleman T. (2020). "The Federal Government Data Maturity Model." Accessed 07/17/24. Available at: <https://neweditions.net/sites/default/files/sites/default/files/ACLDDataCouncil/Federal%20Government%20Data%20Maturity%20Model.pdf>.
11. The Data Management Association (DAMA) International. (2017). "DAMA-DMBOK: Data Management Body of Knowledge." Technics Publications. Accessed 11/12/24. Available at: <https://www.dama.org/> and <https://technicspub.com/dmbok/>.
12. The Public Health Informatics Institute (PHII). "Building an Informatics-savvy Health Department: A Self-assessment Tool." Accessed 08/16/24. Available at: <https://phii.org/download/informatics-health-department-self-assessment-tool/>.



[cdcfoundation.org/workforceacceleration](https://cdcfoundation.org/workforceacceleration)

Contacts:

Pam Roesch: [proesch@cdcfoundation.org](mailto:proesch@cdcfoundation.org)

Joe Gibson: [jgibson@cdcfoundation.org](mailto:jgibson@cdcfoundation.org)

# Appendix – Extra Information

# [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.

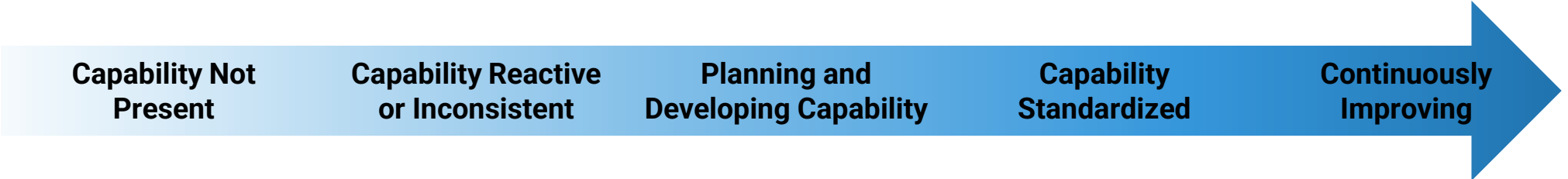
**Integrating:** Sends and/or receives electronic data with three or more external partners and for two or more data types.

**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

## Capability Development



## Organizational Adoption of Capability



Koenders W. (2024). "Data maturity models – Why having the capabilities in place isn't enough." Accessed 08/01/24. Available at: <https://medium.com/@willemkoenders/data-maturity-models-why-having-the-capabilities-in-place-isnt-enough-30edd2634bf6>  
 Software Engineering Institute. (1993). Capability Maturity Model for Software, Version 1.1. Pittsburg: Carnegie Mellon University.

# 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 and Individual  
 ■ Developing and Strategic  
 ■ Standardized and Integrating  
 ■ Ongoing Improvement and Full Integration

## ISI Vision & Strategy

ISI activities are guided by PHA-wide vision and strategy



## Information Systems and Data Governance

Standards ensure secured, quality data



## Sustainable Funding

Sustained funding effectively meets ISI resource needs



## Future-facing and Scalable Information Systems

Balanced ISI decision making

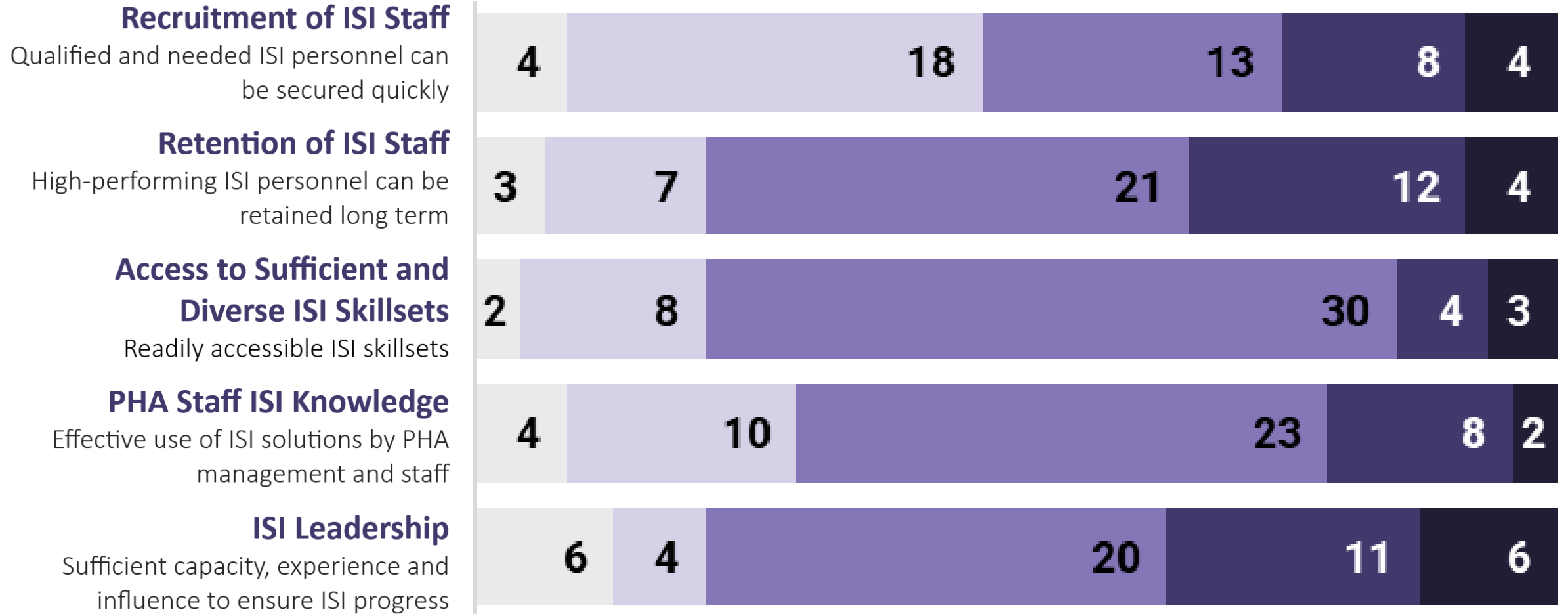


N=47 WAI PHAs

# Workforce

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

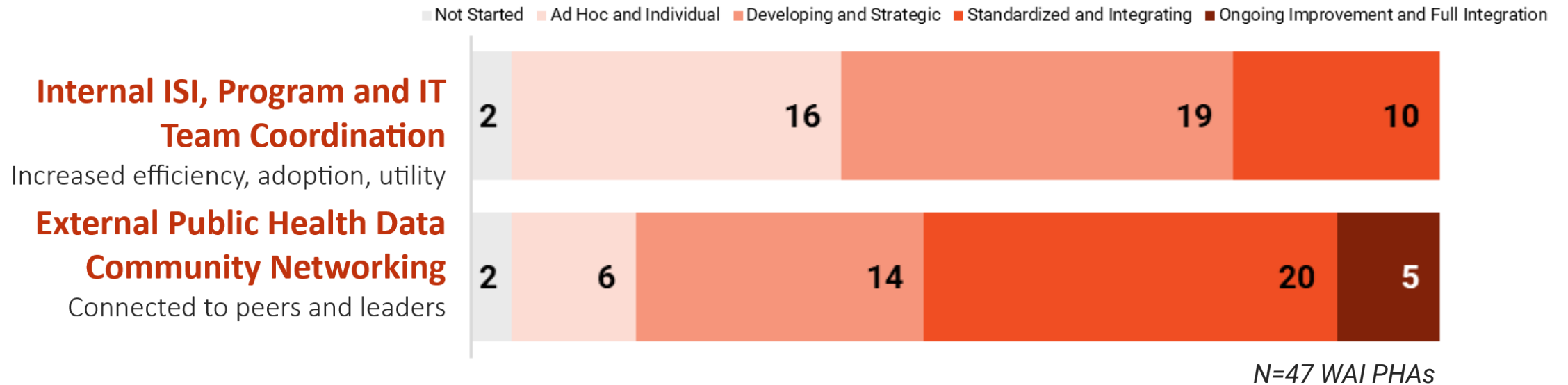
■ Not Started ■ Ad Hoc and Individual ■ Developing and Strategic ■ Standardized and Integrating ■ Ongoing Improvement and Full Integration



N=47 WAI PHAs

# Partnerships and Networks

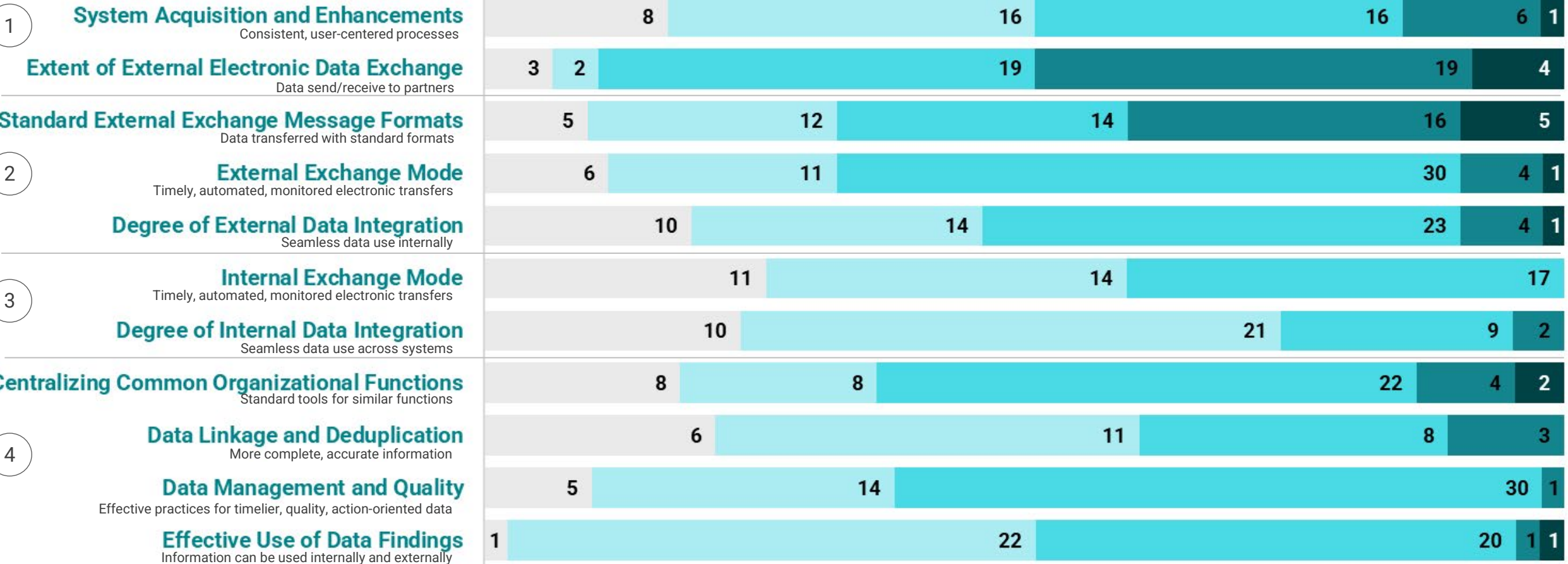
PHA leverages internal relationships to drive change and external networks to align with broad public health priorities.



# Technical Capabilities

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

■ Not Started   ■ Ad Hoc and Individual   ■ Developing and Strategic   ■ Standardized and Integrating   ■ Ongoing Improvement and Full Integration



N=See Footnotes

① N=47 PHAs (assessed by all WAI PHAs)

② External data exchange: N=52 projects across 33 PHAs

③ Internal data exchange: N=42 projects across 29 PHAs

④ N=44 centralizing, 28 linkage, 50 data management and 45 effective use projects across 45 PHAs

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



MECKLENBURG COUNTY  
North Carolina

Public Health

# Mecklenburg County Public Health Informatics Program Advancing Informatics Maturity: Strategy & Vision



**Jonathan Ong, MBA, PMP, CDMP**  
*Public Health Data Director  
Informatics and Data Analytics Program*



# Why Maturity Models Matter

Industry standards provide comparability, credibility, and a shared language across organizations.

This positions maturity models as tools for strategic planning, benchmarking, and continuous improvement.

# Strategic Roadmap

- **Short-term:** Workforce training & skill development
- **Medium-term:** System upgrades & interoperability improvements
- **Long-term:** Governance, sustainability, and equity-focused informatics culture

## Public Health 3.0 at Mecklenburg County Public Health

Gibbie Harris, Jonathan Ong

One of the key recommendations from the CDC for achieving Public Health 3.0 is access to timely, reliable, granular-level, and actionable data. An organization must build its informatics capacity to bridge the clinical and technological aspects of health for the 21st century. This is an evolving realm of technology and will continue to have public health and health care implications.

In "Public Health 3.0: A Call to Action for Public Health to Meet the Challenges of the 21st Century," the Centers for Disease Control and Prevention (CDC) recognizes that local public health is beginning to "pioneer a new Public Health 3.0 model in which leaders serve as Chief Health Strategists, partnering across multiple sectors and leveraging data and resources to address social, environmental, and economic conditions that affect health and health equity" [1]. These efforts require health department leaders to think differently about the needed skills of their workforce and the needed resources of their departments.

The five areas of specific action that are required for the 3.0 efforts to have the intended positive effects on the health of the community include embracing the role of chief health strategist; structured and cross-sector partnerships; enhanced accreditation requirements to support the 3.0 principles; timely, reliable, granular-level, and actionable data with clear metrics; and support and funding for the right leadership and prevention initiatives. Some of the key challenges to 3.0 for local public health are both federal and state regulatory requirements; absence of nonproprietary tools for data, analytics, and metrics; the lack of experience and skills in the current workforce; and often the current

### Benefits of Informatics

Without improvements in the availability, analysis, and interpretation of high-quality data, Public Health 3.0 will be challenging for local health departments. Public health informatics has been defined as the systematic application of information and computer science and technology to public health practice, research, and learning [1]. The potential opportunities is the e of challenges a actions to impro and efforts. Hav providing real-t and strategic w Health 3.0.

### Creation of M Program

MCPH redesi provide high-leve underway. The: development, c improvements i record system. report the impac the department in late 2017. E importance of a access to data if founded on 3.0 < 1/4 > to the si

FIGURE 1. Five Components to A Successful Informatics Program



Source. Ong J. Mecklenburg County Public Health Informatics Program.

<https://ncmedicaljournal.com/article/55118>



"Public Health Informatics is defined as the science of how to use data, information and knowledge to improve human health and the delivery of health care services.

**It's more about people and systems *than technology*."**

***Public Health Informatics Institute (PHII.org)***



# PHI Informatics Maturity Model

- **Purpose:** Helps agencies assess their informatics capacity across governance, workforce, and technical systems.
- **Key Features:**
  - Capability Maturity Model structure.
  - Self-assessment tools for informatics-savvy health departments.
  - Companion interoperability assessment for evaluating data exchange readiness.
- **Use Case:** Guides agencies in identifying gaps and prioritizing investments in informatics infrastructure.



# Introduction

- The “[Building an Informatics-Savvy Health Department: A Self-Assessment Tool](#)” was developed in 2014 by the Minnesota Department of Health with CDC support and is available from the Public Health Informatics Institute website as part of a toolkit
- The intent of the tool is to support Public Health Informatics by:
  - defining necessary informatics capabilities, and
  - providing a self-assessment that aids in planning and priority setting

# Capability Maturity Model Levels

<b>CMM Level</b>	<b>General Description</b>
<b>0 - Absent</b>	No capability is evident; “starting from scratch.”
<b>1 - Initial</b>	No organized, systematic efforts to build informatics capacity, only ad hoc efforts and isolated, individual heroics.
<b>2 - Managed</b>	Some organized efforts begun or completed but not systematically documented or institutionalized.
<b>3 - Defined</b>	Systematic, ongoing efforts underway, but no overall method to measure progress or to ensure coordination.
<b>4 - Measured</b>	Systematic, ongoing efforts underway to measure progress and ensure coordination.
<b>5 - Optimized</b>	Systematic, ongoing efforts underway with quality improvement activities to align results with guiding vision, strategies and performance metrics.

# MCPH Results (Self-Assessment)

	2017			2025		
	Self-Assessment	# of Q	Score	Self-Assesment	# of Q	Score
<b>Section 1: Vision, Strategy and Governance</b>	15	11	1.36	32	11	2.91
<b>Section 2: Skilled Workforce</b>	8	6	1.33	15	6	2.50
<b>Section 3: Effectively Used and Well-Designed Systems</b>	18	11	1.64	21	9	2.33
	<b>41</b>	<b>28</b>	<b>1.46</b>	<b>68</b>	<b>26</b>	<b>2.62</b>

# MCPH Results (Self-Assessment)

- Governance is now a strength
  - Built the foundation for sustainable modernization.
- Workforce development is accelerating
  - Investments in training, competency mapping, and role clarity are clearly working. This includes data literacy initiatives.
- Systems modernization is progressing but needs continued focus
  - Lags due to:
    - Capital investment
    - Vendor/Partner coordination
    - Interoperability work
    - Data quality improvement
    - Change management



# Findings, Themes & Lessons Learned

Following completion of the survey (7/25/25-9/19/25):

- Performed additional analysis on survey response results:
  - **Example:** Comparison of Informatics and IT staff responses as well as by number of years of experience everyone has with the MCHD Informatics Program
- Reviewed and summarized select comments from discussion
- Prioritized the results and utilize them for improvement in strategy, training, and system design
- Utilized the results of this work when developing the FY27 Health Department Strategic Plan

# Sample of 2025 Scoring Results

Everyone		Informatics		IT	
Section	Average Score	Section	Average Score	Section	Average Score
1	2.89	1	2.84	1	3.03
2	2.44	2	2.56	2	2.17
3	2.36	3	2.32	3	2.43
	<b>2.56</b>		<b>2.57</b>		<b>2.54</b>

Everyone	1 Year Experience	Everyone	4 Years	Everyone	6 Years	Everyone	8 Years
Section	Average Score	Section	Average Score	Section	Average Score	Section	Average Score
1	2.03	1	2.93	1	3.73	1	3.15
2	2.25	2	2.53	2	2.00	2	2.52
3	1.92	3	2.14	3	3.40	3	2.56
	<b>2.07</b>		<b>2.54</b>		<b>3.04</b>		<b>2.74</b>

# CDC Foundation Workforce Acceleration Initiative (WAI)

## PH Agency Information Infrastructure Maturity Model

- Purpose: Focuses on information **infrastructure and workforce development**.
- Key Dimensions:
  - **Strategy & Governance:** Vision, data governance, sustainable funding.
  - **Workforce:** Recruitment, retention, diverse skillsets, leadership.
  - **Partnerships & Networks:** Coordination across IT, programs, and external data communities.
  - **Technical Capabilities:** Scalable, future-facing systems.
- **Use Case:** Provides a roadmap for modernizing systems and strengthening workforce capacity.



# The WAI Maturity Model helps PHAs

- Understand their current information infrastructure maturity
- Identify gaps and opportunities
- Track progress over time
- Align foundational work with CDC's PHDS milestones
- Demonstrate the value and impact of WAI-supported projects
- Compare to similar PHAs
- Response was based off current project with the CDC Foundation's WAI Project

**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
<b>Recruitment of ISI Staff</b> Qualified and needed ISI personnel can be secured quickly		A	* T		
<b>Retention of ISI Staff</b> High-performing ISI personnel can be retained long term			A	* T	
<b>Access to Sufficient and Diverse ISI Skillsets</b> Readily accessible ISI skillsets			* T A		
<b>PHA Staff ISI Knowledge</b> Effective use of ISI solutions by PHA management and staff			* T A		
<b>ISI Leadership</b> Sufficient capacity, experience and influence to ensure ISI progress			* T A		

\* = MCPH

T = Most selected level across your PHA Type (large, local WAI PHAs with >1 million people, N=9 responses)

A = Most selected level across All WAI PHAs (N=47 responses)

# Additional Technical Capabilities\*

	Not Started	Ad Hoc & Individual		Developing & Strategic		Standardized & Integrating	Ongoing Improvement & Full Integration
<b>Centralizing Common Organizational Functions</b> Standard tools for similar functions		1					
<b>Data Linkage and Deduplication</b> More complete, accurate information	1	Early	Mature				
<b>Data Management and Quality</b> Effective practices for timelier, higher-quality, action-oriented data				Early 1	Mature		
<b>Effective Use of Data Findings</b> Data interpreted into information that can be used internally and externally		Early 1	Mature	Early	Mature		

1 = MCPH WAI Project #1: Customer Relationship Management (CRM) Tool for Office of Population Health

# WAI Maturity Model 5-Level Capability Scale Definitions

	Level 1	Level 2	Level 3	Level 4	Level 5
	Not Started	Adhoc and Individual	Developing and Strategic	Standardized and Integrating	Ongoing Improvement and Full Integration
<b>Component:</b> Capability Development	The capability is not present.	There is little alignment across the PHA around capability activities. Capability may exist in an adhoc, reactive and/or inconsistent fashion.	PHA is taking a more organized approach to plan and develop the capability. Planning considers implementation, strategies for PHA-wide adoption and evaluation. PHAs in this level may be testing solutions by developing use cases and conducting pilots.	Capability is standardized, documented and enhanced over time. The PHA has defined a PHA-wide strategy for the capability and has begun measuring adoption and impact.	PHA consistently measures adoption and impact. The capability is continuously monitored and improved based on performance data and engagement of affected parties.
<b>Component:</b> Capability Development (Interoperability Scales Only)	No data exchange between systems.	Some data is exchanged, but it is not standardized or reliable.	Some data exchange is standardized and automated, but integration is still limited.	Most systems are well-integrated, allowing for seamless data flow.	Real-time, bidirectional data exchange occurs in most places it is needed. The data exchange is continuously monitored and improved based on data and engagement of affected parties.
<b>Component:</b> Organizational Adoption of Capability	No one at the PHA has or is using the capability.	PHA has growing awareness around capability's importance; however, any efforts to adopt capability are individually organized.	Some areas of the PHA are beginning to implement the capability in alignment with PHA planning and development activities.	PHA projects, teams and systems are integrating the defined, PHA-wide strategy for the capability into their daily workflows.	Where applicable, all PHA projects, teams and systems use the capability and/or follow standards in daily workflows.

## Scale Functionality

<b>7 Point Scale</b>	L1	Early L2*	Mature L2	Early L3	Mature L3	L4	L5
<b>6 Point Scale**</b>	L1	L2	Early L3	Mature L3	L4	L5	
<b>5 Point Scale</b>	L1	L2	L3	L4	L5		

\* Within a capability where there may be meaningful progress made within one Level, the Capability may have two measures of progress within one Level.

\*\* For 6 Point Scales, Level 2, Level 3 or Level 4 may be broken down into early and mature. This shows an example where Level 3 is broken down into early and mature.



The **Applied Public Health Informatics Competency Model** was developed by the Informatics Academy at the Public Health Informatics Institute (PHII). It frames the knowledge, skills, and abilities that public health practitioners need to address the informatics challenges at their agencies.

# Informatics Proficiency Self-Assessment

- **Purpose:** Evaluates individual staff skills and competency in informatics (e.g., data analysis, interoperability, project management).
- **Value:** Complements organizational models by ensuring workforce skills align with organizational maturity goals.
- **Use Case:** Identifies training needs and supports professional development.
- **Applied Public Health Informatics Competency Model – PHII**  
<https://phii.org/resources/applied-public-health-informatics-competency-model/>

# Applied Public Health Informatics Competency Model

<b>Principles &amp; Strategy</b>	This competency focuses on aligning informatics initiatives with public health goals through strategic planning and application of informatics principles.	<ul style="list-style-type: none"><li>Align informatics initiatives with public health goals</li><li>Identify key stakeholders and map needs</li><li>Apply informatics methods to program development</li><li>Develop strategic implementation plans</li><li>Understand systems thinking in public health</li></ul>
<b>Standards &amp; Interoperability</b>	This competency involves knowledge and use of health data standards and practices that promote system interoperability and data exchange.	<ul style="list-style-type: none"><li>Apply data exchange standards (e.g., HL7, FHIR)</li><li>Use clinical vocabularies like SNOMED, LOINC, and ICD</li><li>Ensure system interoperability across agencies</li><li>Map data fields to standardized terminologies</li><li>Participate in data harmonization efforts</li></ul>
<b>Project Management</b>	This competency includes managing informatics projects using best practices in planning, execution, and stakeholder engagement.	<ul style="list-style-type: none"><li>Develop project charters and work plans</li><li>Manage timelines and resource allocation</li><li>Conduct stakeholder analysis</li><li>Monitor project progress and adapt plans</li><li>Perform risk assessments and mitigation planning</li></ul>
<b>Information Systems</b>	This competency covers the development, implementation, and maintenance of information systems in public health.	<ul style="list-style-type: none"><li>Gather user/system requirements</li><li>Support system selection and implementation</li><li>Maintain and troubleshoot public health information systems</li><li>Conduct user training and system onboarding</li><li>Document technical and operational procedures</li></ul>

# Applied Public Health Informatics Competency Model

## Communication

This competency emphasizes effective communication of informatics concepts and findings to technical and non-technical audiences.

- Translate complex informatics concepts for varied audiences
- Develop clear and concise data reports and summaries
- Facilitate stakeholder meetings and presentations
- Use storytelling and visualization to communicate insights
- Promote informatics value through advocacy

## Evaluation

This competency involves evaluating the effectiveness, efficiency, and quality of public health information systems and data use.

- Design and implement evaluation frameworks
- Conduct system usability and performance testing
- Assess cost-effectiveness and return on investment
- Analyze data completeness and timeliness
- Incorporate feedback for system improvement

## Analysis, Visualization & Reporting

This competency focuses on translating data into actionable insights through analysis, visualization, and reporting tools.

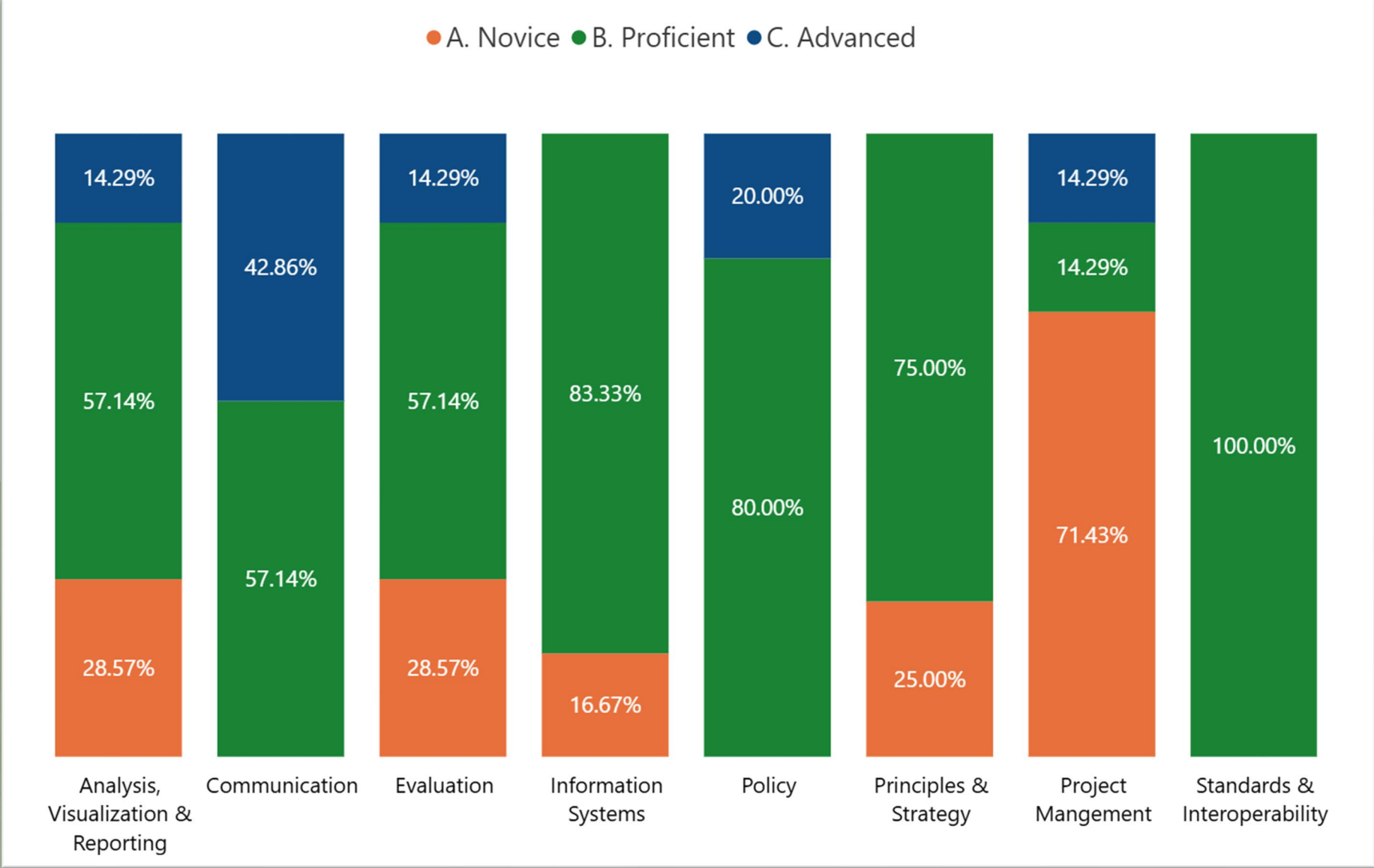
- Analyze large datasets for public health trends
- Create data dashboards and visualizations
- Generate automated and ad hoc reports
- Apply statistical or geospatial analysis techniques
- Use visualization software (e.g., Power BI, Tableau)

## Policy

This competency pertains to understanding and influencing public health policies that affect informatics and data practices.

- Interpret and apply laws and regulations (e.g., HIPAA)
- Contribute to data governance and sharing policies
- Advocate for informatics-friendly legislation
- Align data practices with organizational policy
- Support policy analysis and decision-making with data

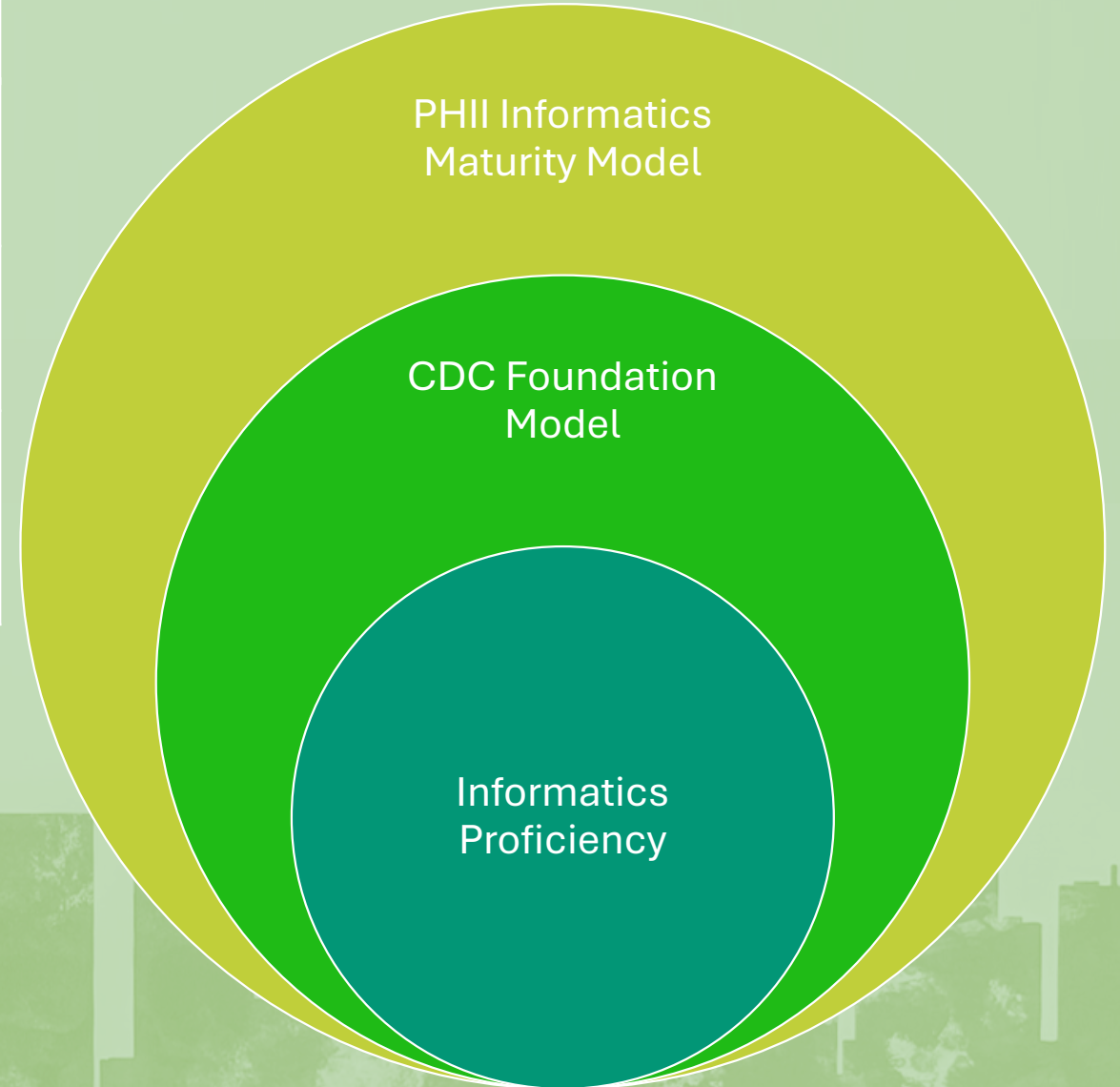
# MCPH Informatics Proficiency Self-Assessment\*



\*June 2025

# How They Relate to Each Other

Model	Focus	Contribution
<b>PHII Maturity Model</b>	Organizational capacity & interoperability	Identifies system-level strengths and gaps
<b>CDC Foundation WAI Model</b>	Workforce & infrastructure	Builds sustainable governance and workforce pipelines
<b>Proficiency Self-Assessment</b>	Individual skills	Ensures staff capabilities match organizational needs



## Integration:

- PHII → *Where the agency is today*
- CDC Foundation → *How to build sustainable systems and workforce*
- Proficiency Assessment → *Who needs training to get us there*

***Maturity models support a coordinated approach to formulating a vision and structuring the steps toward it, engaging employees along the transformation journey necessary for a digitally resilient public health system.***

Doctor, E., Eymann, T., Fürstenau, D. et al. A Maturity Model for Assessing the Digitalization of Public Health Agencies. *Bus Inf Syst Eng* 65, 539–554 (2023).  
<https://doi.org/10.1007/s12599-023-00813-y>





**MECKLENBURG COUNTY**  
North Carolina  

---

Public Health

*Let's connect*



*Jonathan Ong, MBA, PMP, CDMP  
Public Health Data Director*



# References

- **Public Health Informatics Institute**

- <https://phii.org/course/informatics-savvy-health-department-toolkit/>
- <https://phii.org/resources/applied-public-health-informatics-competency-model/>
- Public Health Informatics: Knowledge “Architect”
  - <https://www.youtube.com/watch?v=sofmUeQkMLU>

- **CDC Foundation**

- <https://www.cdcfoundation.org/programs/workforceacceleration>
- <https://www.cdcfoundation.org/WAIMaturityModel.pdf>



# Operationalizing the Maturity Model: Real Examples

Change Management and Data Governance



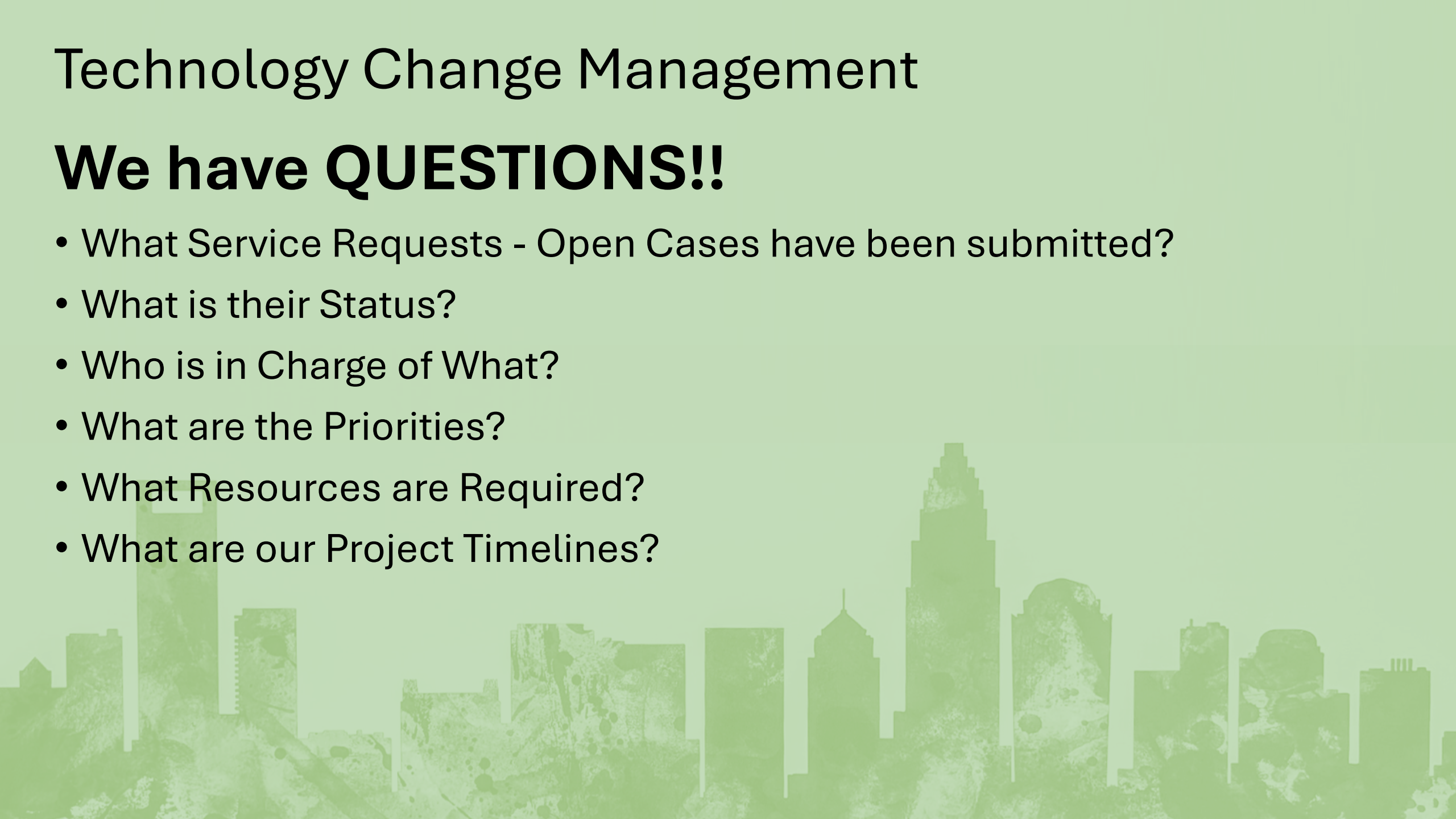
# Change Management

Using the Maturity Model to Drive Adoption, Alignment, and Sustainable Transformation



# Technology Change Management

## **We have QUESTIONS!!**

- What Service Requests - Open Cases have been submitted?
  - What is their Status?
  - Who is in Charge of What?
  - What are the Priorities?
  - What Resources are Required?
  - What are our Project Timelines?
- 

# Technology Change Management Flow

## Change Request

- PHIP Internal Service Request Form
- PHIP Projects E-Mail Inbox
- County Information Technology MeckSupport Ticket

## Documentation and Access

- SharePoint Tracker
- Available for view by all PH Staff

## TCM Weekly Meeting

- Regulations
- Fiscal Requirements
- Quality Improvement
- Administrative Compliance
- Clinical Guidance
- Resource Availability

## System Change / Change Deployment

- System Updates
- Training
- Documentation

*A weekly, feedback-driven technology change process that integrates stakeholder, SME, and executive input to ensure transparent documentation, informed decisions, and consistent system improvement.*

## Feed Back and Input

- Subject Matter Experts
- Stakeholders
- Vendors
- Executive Leadership Team

# The Informatics Funnel: Requests to Results

SYSTEM  
COMPLIANCE

1



**System compliance** ensures that all data processes and requests adhere to regulatory frameworks, policies, and standards required by federal, state and local entities. It encompasses HIPAA, FERPA, PHI compliance, grant requirements, fiscal policies and data governance.

DATA STANDARDS  
and INTEGRATIONS

2



**Data standards and integrations** are crucial for maintaining data integrity, accuracy, and interoperability across systems. This category focuses on applying standards and upholding data quality and ensuring consistent definitions and structures (databases). Adhering to these standards allows for seamless data integration and supports public health reporting and analysis

IMPACT ASSESSMENT

3



**Impact assessment** evaluates the effects of each request on people's, workflow, and resources. It includes resource needs, workload impact, training, and change management efforts along with measures for quality improvement. This ensures that requests support workforce capacity, data literacy, and efficient operational flow.

SUSTAINABLE PRACTICES

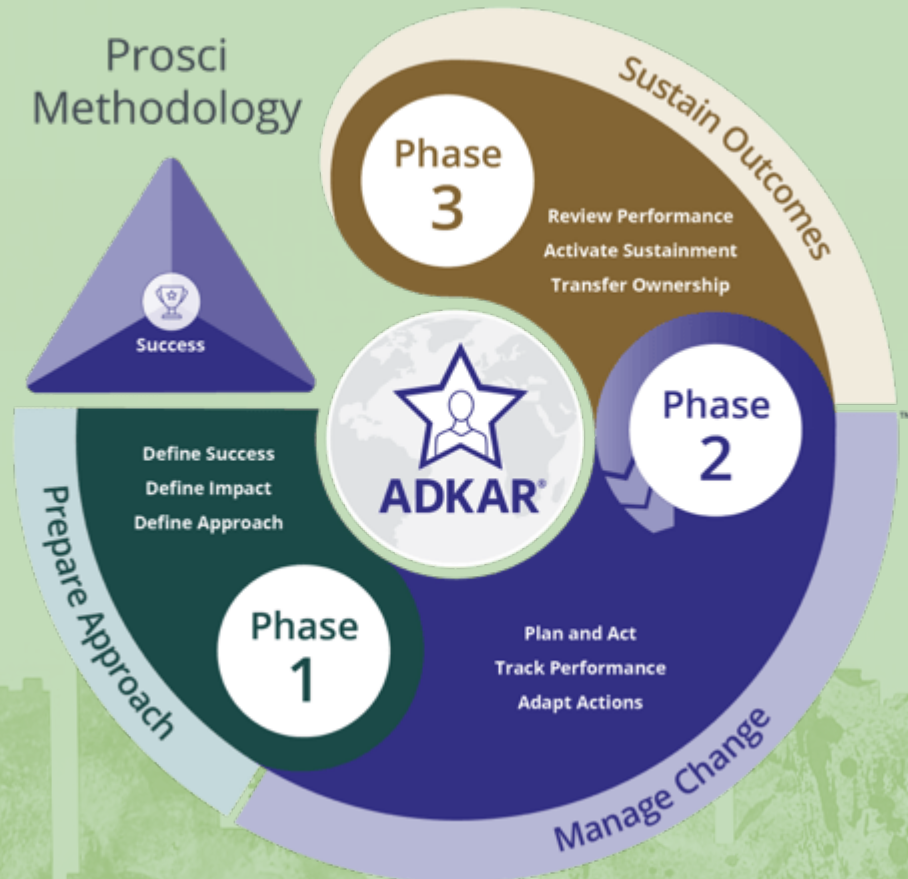
4



**Sustainable practices** focuses on long term viability, sustainable practices examining scalability, alignment with modernization initiatives, and innovation potential. This includes data exchanges, privacy standards, and collaboration needs, ensuring that change to design/workflow are not only efficient today but adaptable and relevant for future public health challenges.

# ADKAR Model of Change

- This powerful model is based on the understanding that organizational change can only happen when individuals change.



<b>A</b>	<b>Awareness</b> – Of the need for change
<b>D</b>	<b>Desire</b> – To Participate and support the change
<b>K</b>	<b>Knowledge</b> – On how to change
<b>A</b>	<b>Ability</b> – To implement required skills and behaviors
<b>R</b>	<b>Reinforcement</b> – To sustain the change

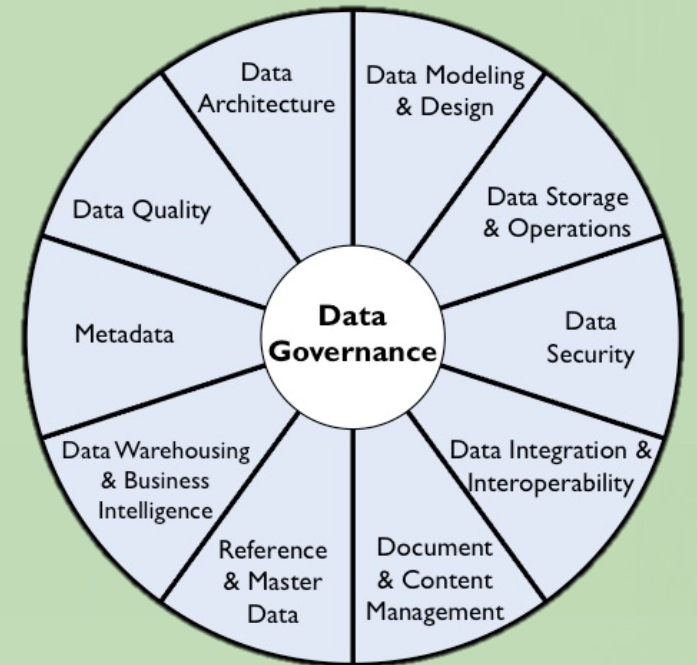
# Data Governance

Strengthening Trust, Quality, and Accountability Through a Maturity-Driven Governance Model



# Data Governance: Maturity Overview

- Data Governance is the foundation of **trustworthy, interoperable, and actionable public health data.**
- **The DAMA Wheel (Governance Framework)**
  - Serves as our functional maturity guide
  - Contains 11 knowledge areas demonstrating key topics to review and apply governance to
    - Currently, 6/11 areas are applicable to our org
- **Program Overview**
  - Established in Mar 2023 (*approaching 3 yr mark*)
  - 2 Gov. Groups: Data Stewards & Gov. Council
  - Since Jan 2024, provided data literacy pilot sprints

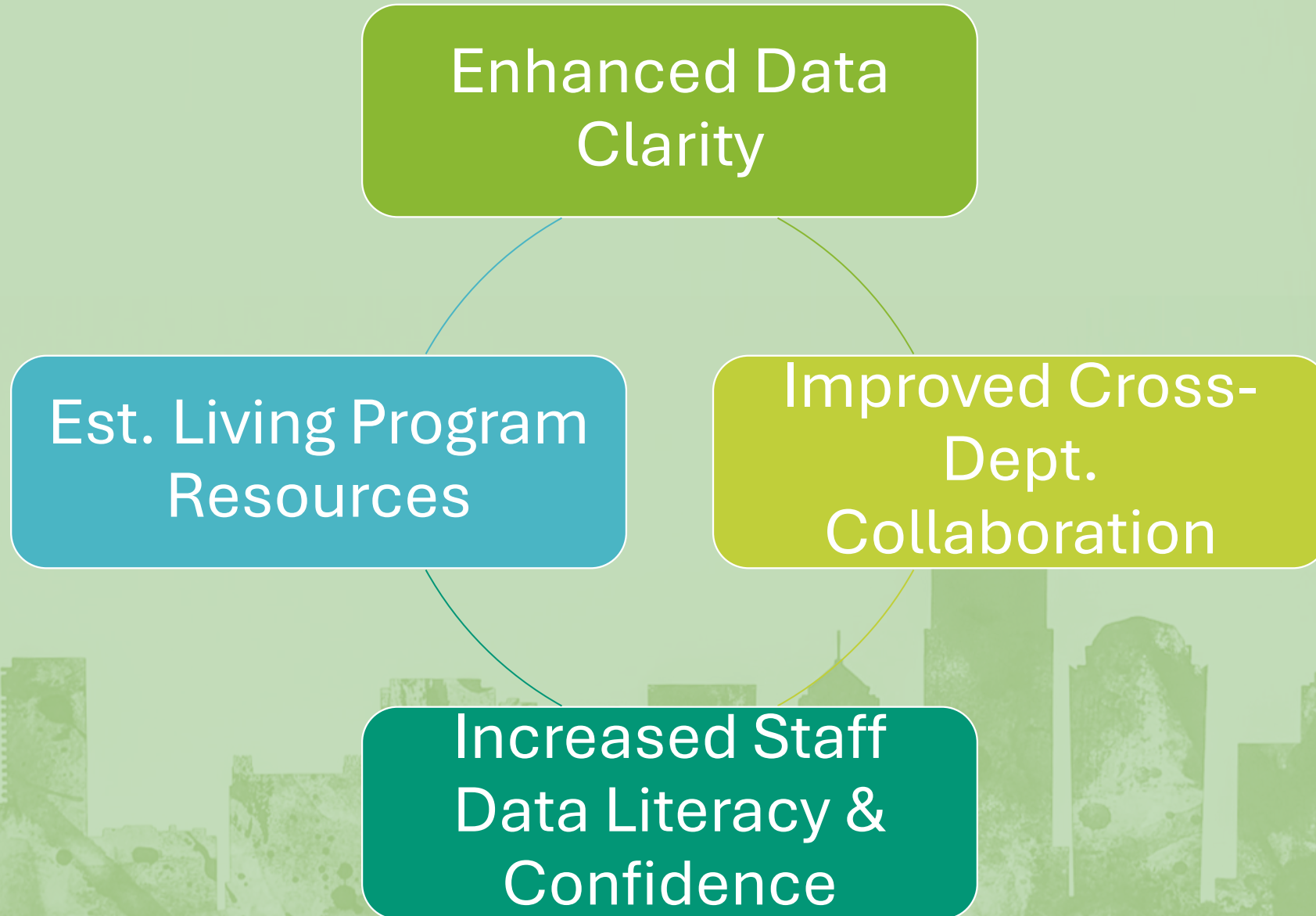


The DAMA Wheel Framework



Data Literacy Pilot Sprints coined 'Health Tech & Data Hub'

# Data Governance: Outcomes Achieved



# Evidence of Impact: Culture & Capability

## Enhanced Data Clarity

- Defining and documenting shared definitions and standards (ex. patient demographics)
- Availability & transparency
- Identification of gaps

## Improved Cross-department Collaboration

- Enhanced alignment on common language and processes
- Staffed gov. groups w/ diverse expertise (front-line staff to advanced data users)
- Shared ownership to ideate and problem-solve together
- Enhanced alignment and communication (ex. Data concerns)

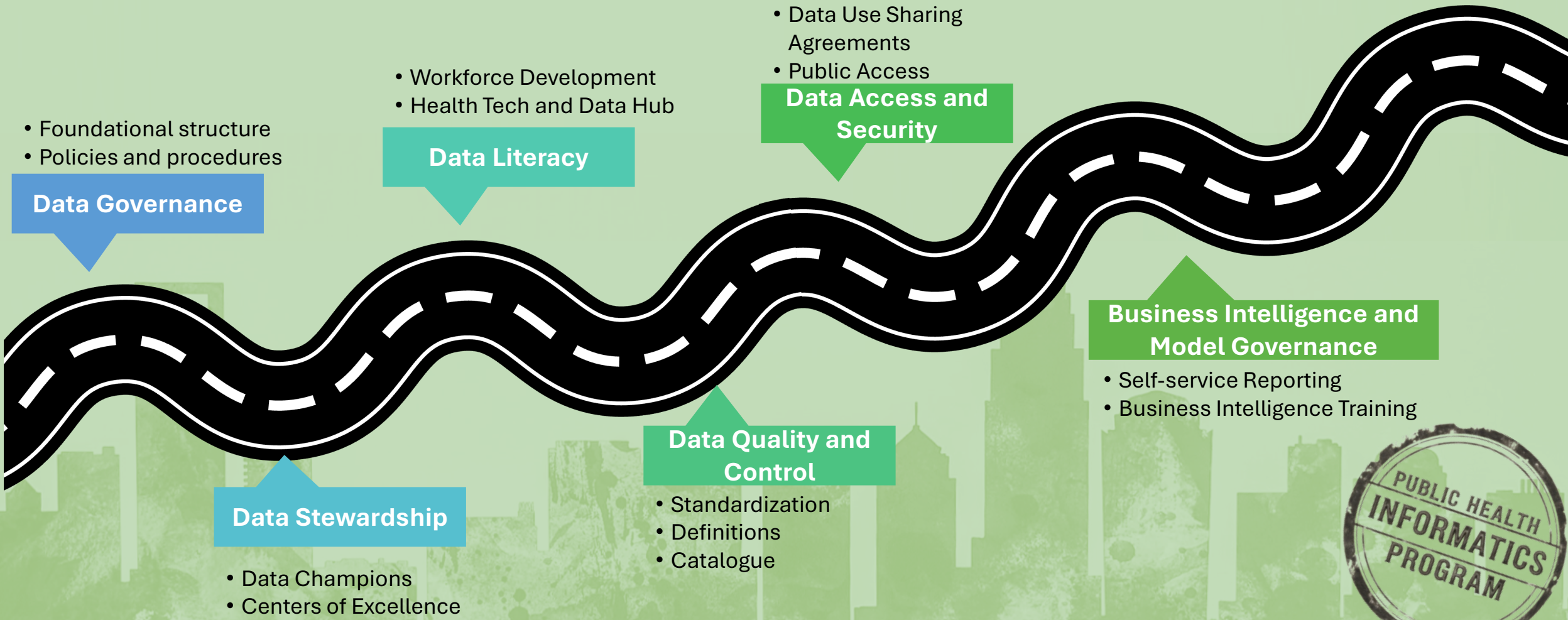
## Increased Staff Data Literacy and Confidence

- Greater ability to interpret, question, and apply data in decisions

## Established Living Program Resources

- Ex. Program charter, data standard (patient demographics), dept. data inventory, data dictionary

# Roadmap to Data Maturity



# How Our Program Groups Work Together



**Mecklenburg County Public Health  
DATA STEWARDSHIP PROGRAM**

- Discusses and investigates known issues/concerns
- Brainstorms and aligns new/improved data standards, policies, and/or procedures across programs



Exchange of work



**Mecklenburg County Public Health  
DATA GOVERNANCE COUNCIL**

- Reviews proposed recommendations
- Works with our policy committee to implement new data standards, policies, and/or procedures

**Topics We've Covered:** Data Standards, Data Inventory, Data Requests,





**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?**



# What are the challenges for the next step?

# Evaluation

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



# Closing

**Thank you!**