



PUBLIC HEALTH  
**INFORMATICS**  
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ACTION

AUGUST 21 - 24, 2016 | ATLANTA, GEORGIA



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# Informatics-Savvy Organization in Public Health: Vision, Strategies and Resources

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For a list of resources, go to <http://bit.ly/2aK9cUb>



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## Learner Objectives

- Demonstrate best practices for public health leadership seeking to incorporate informatics into their agency's strategy.
- Describe three strategies your agency can use to assess your informatics capacity and develop an implementation or enhancement plan.
- Identify three strategic actions you can take in your agency to build or enhance informatics capacity.

## Our goals

- Provide an engaging and stimulating learning experience
- Spark new ideas and strategies
- Provide practical tools and tips

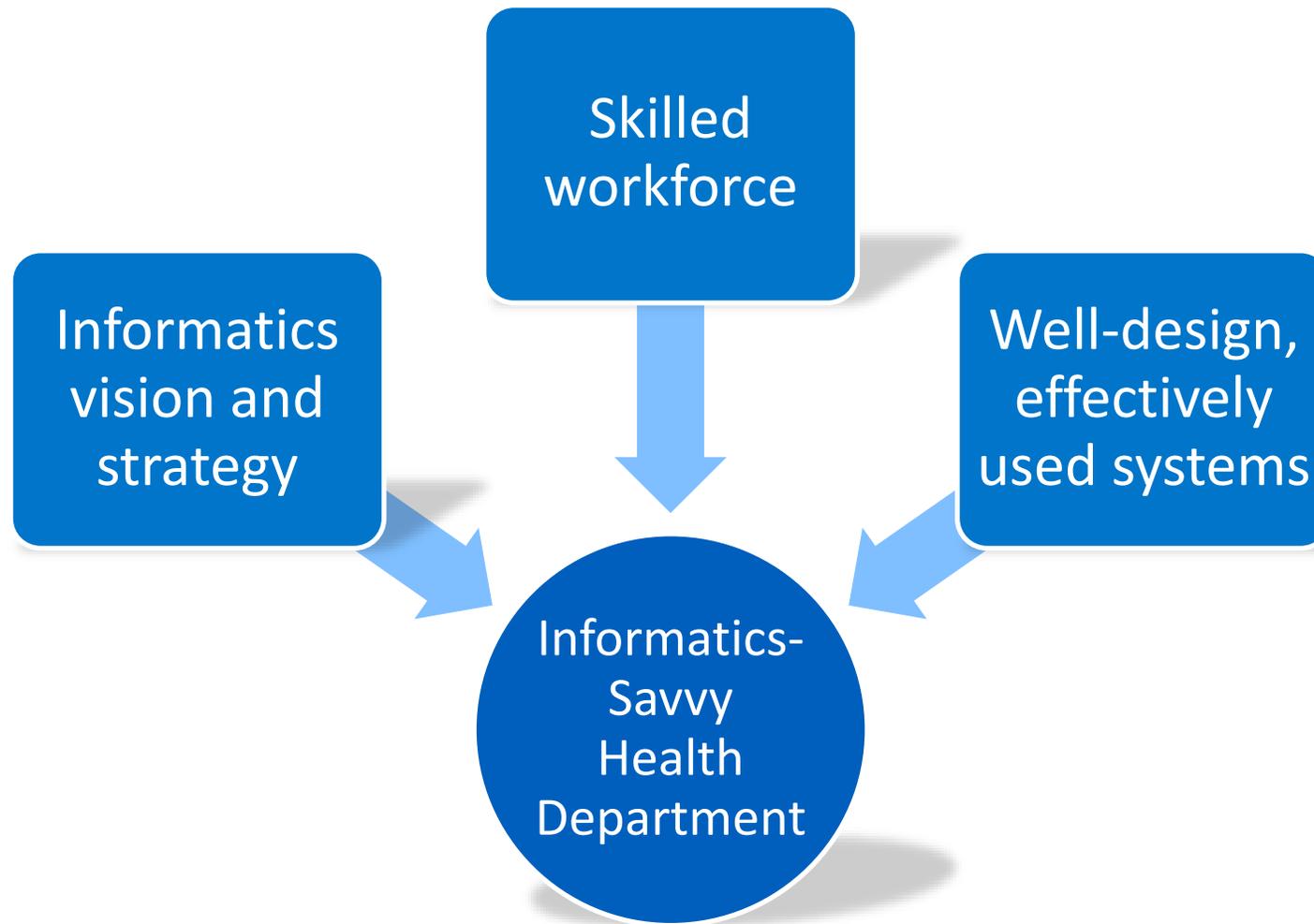
# Faculty and Contributors

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  - Minnesota Department of Health
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  - Utah Department of Health
- Special thanks to:
  - Bree Allen and Sam Patnoe, Minnesota Department of Health
  - Kim Peifer, Washington State Department of Health

# The Framework



# Defining “Informatics-Savvy Health Department”





# Defining “Informatics-Savvy Health Department”

## Informatics Vision & Governance

- How the agency uses information and IT
- Organizational approach to interoperability
- Effective relationship with community partners and IT
- Policies to ensure confidentiality, security and data integration

## Skilled Workforce

- Strategies to improve informatics knowledge and skills
- Informatics unit with agency-wide responsibilities
- Program managers with knowledge and skills in informatics principles, methods and tools

## Well-designed & effectively used systems

- Information systems effectively meet the information needs, workflows and practices of staff and programs
- Interoperable systems
- Sound project management principles guide IT projects

# The Format





**For each of the three components...**



- **Vision, governance, and leadership - WA**
  - One state response - MN
- **Skilled workforce - MN**
  - One state response - UT
- **Well designed, effectively used systems - UT**
  - One state response - WA

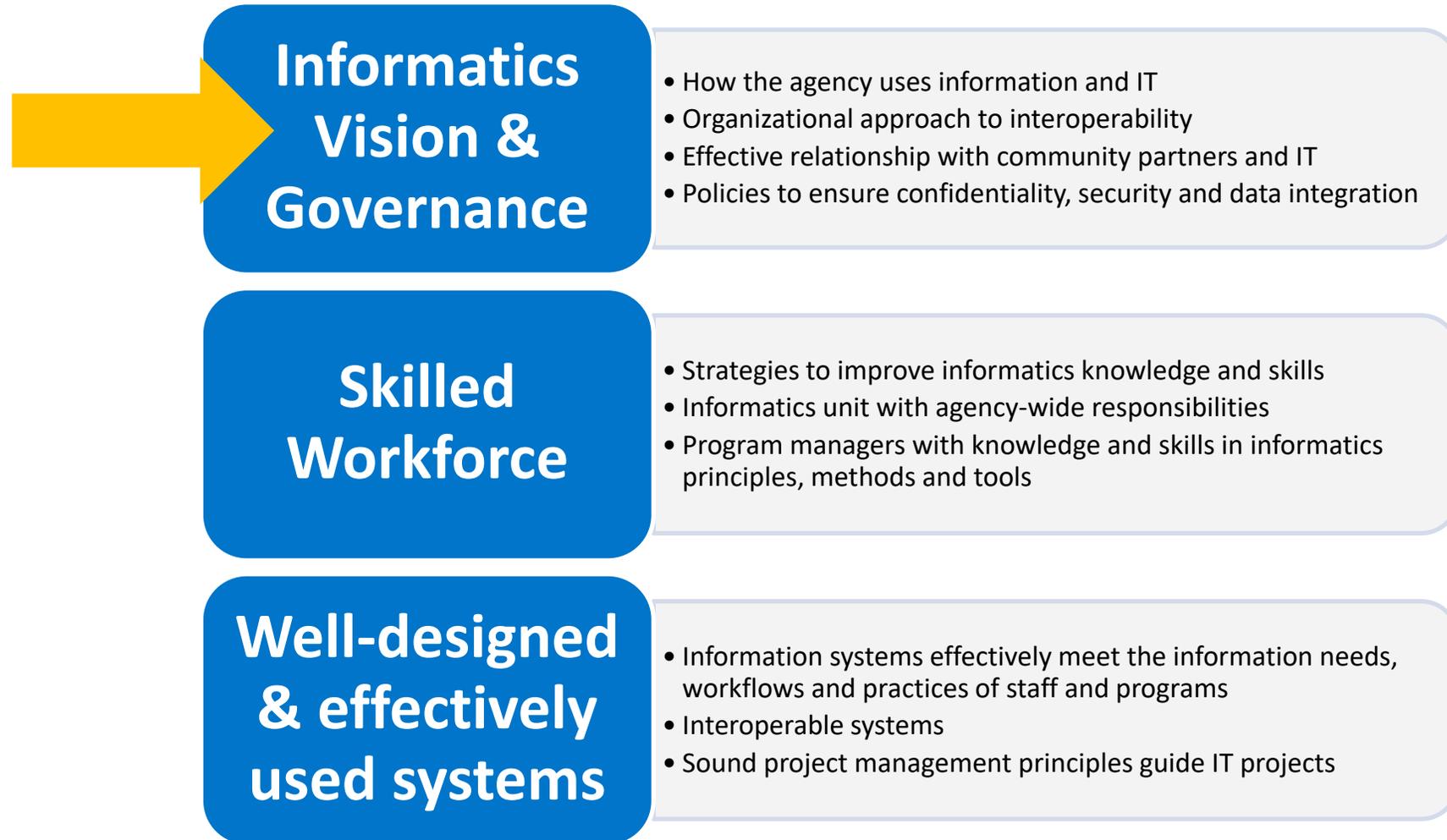


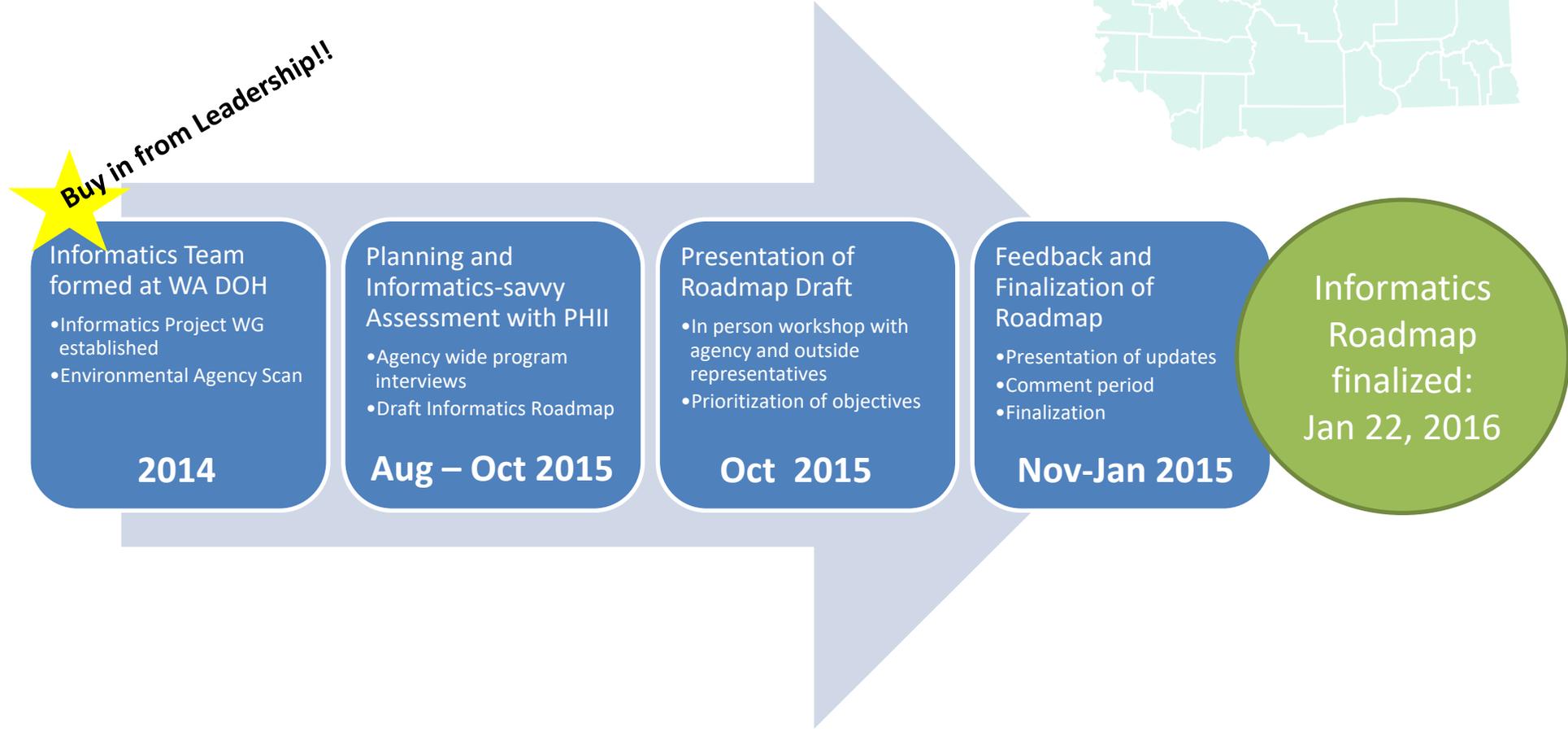
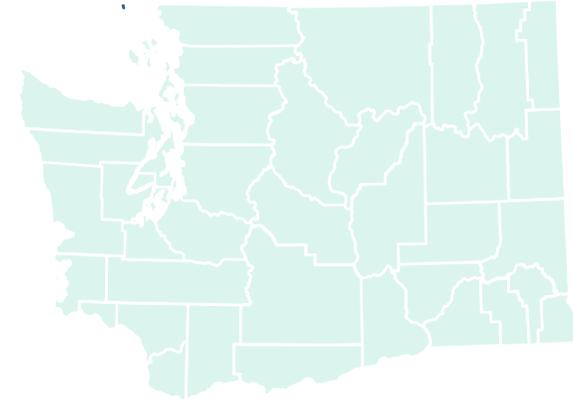
## Your role

- Be thinking critically about how you might apply the stories, tools and tips in your setting
- Record your idea on your Notes page
- Ask questions
- Review the resources when you get home
- Take action!



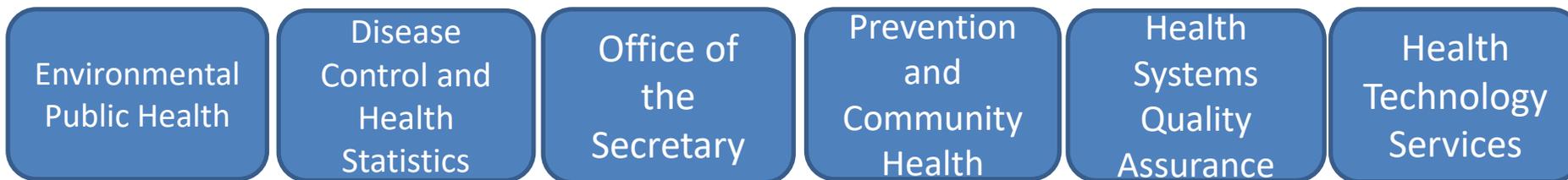
# Key Elements of an Informatics-Savvy Health Department





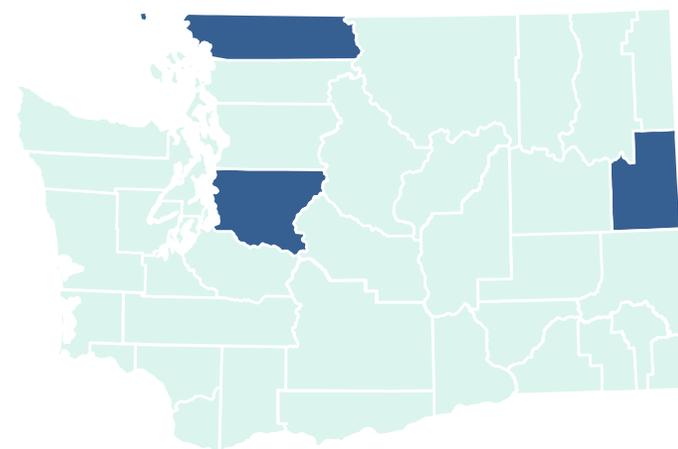
# Who did we “Assess”?

- Washington DOH Programs across the 6 divisions



- Local Health Jurisdictions

- Whatcom County
- Seattle & King County
- Spokane County

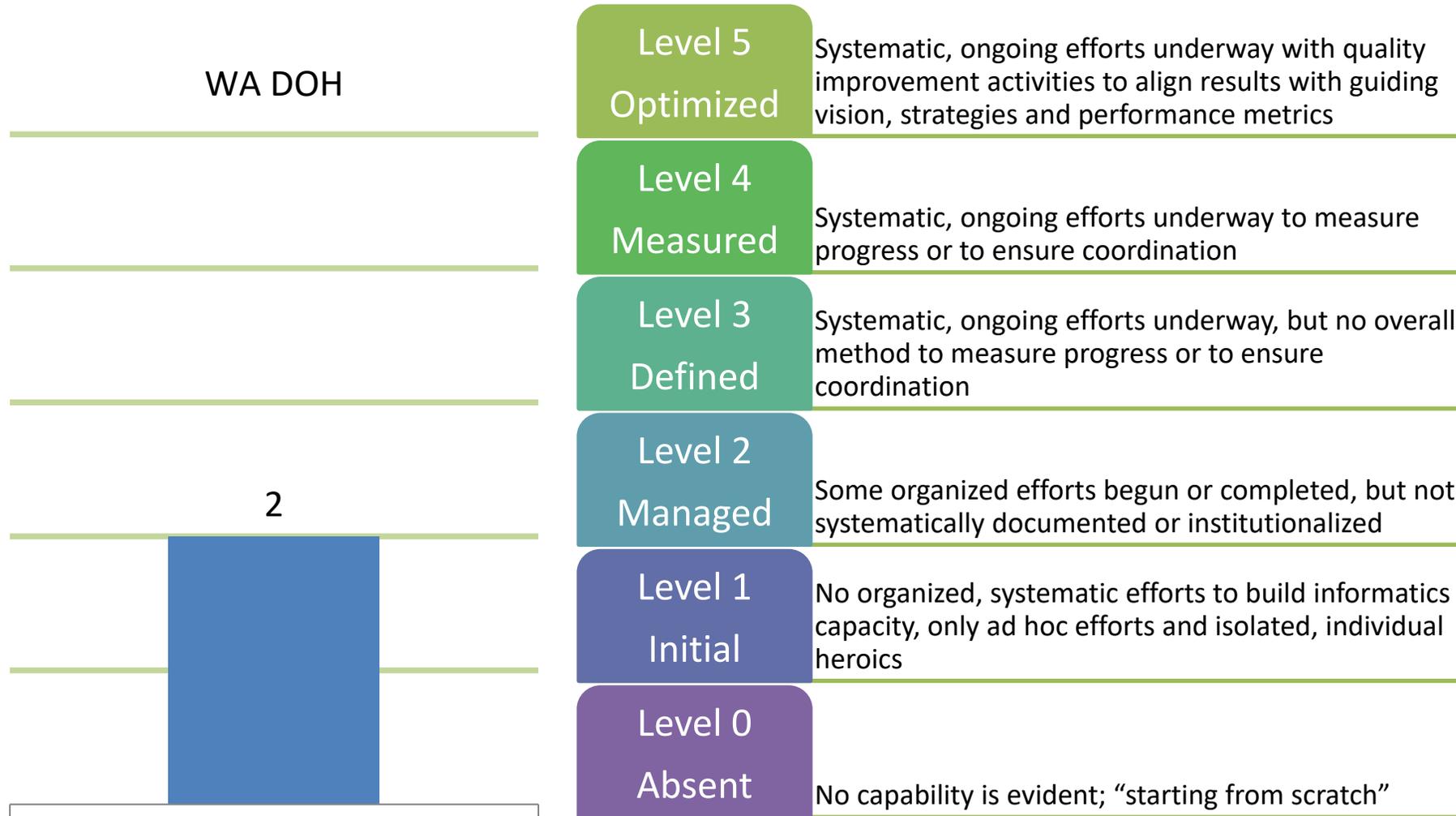


- Tribal Associations and Indian Health Services



# What did we find?

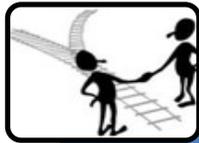
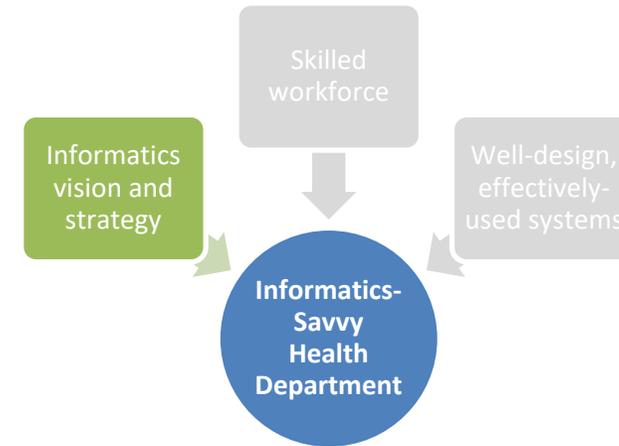
## Vision, Strategy, and Governance



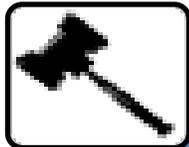
# Informatics Roadmap

## Goals: Vision, Strategy

## Governance



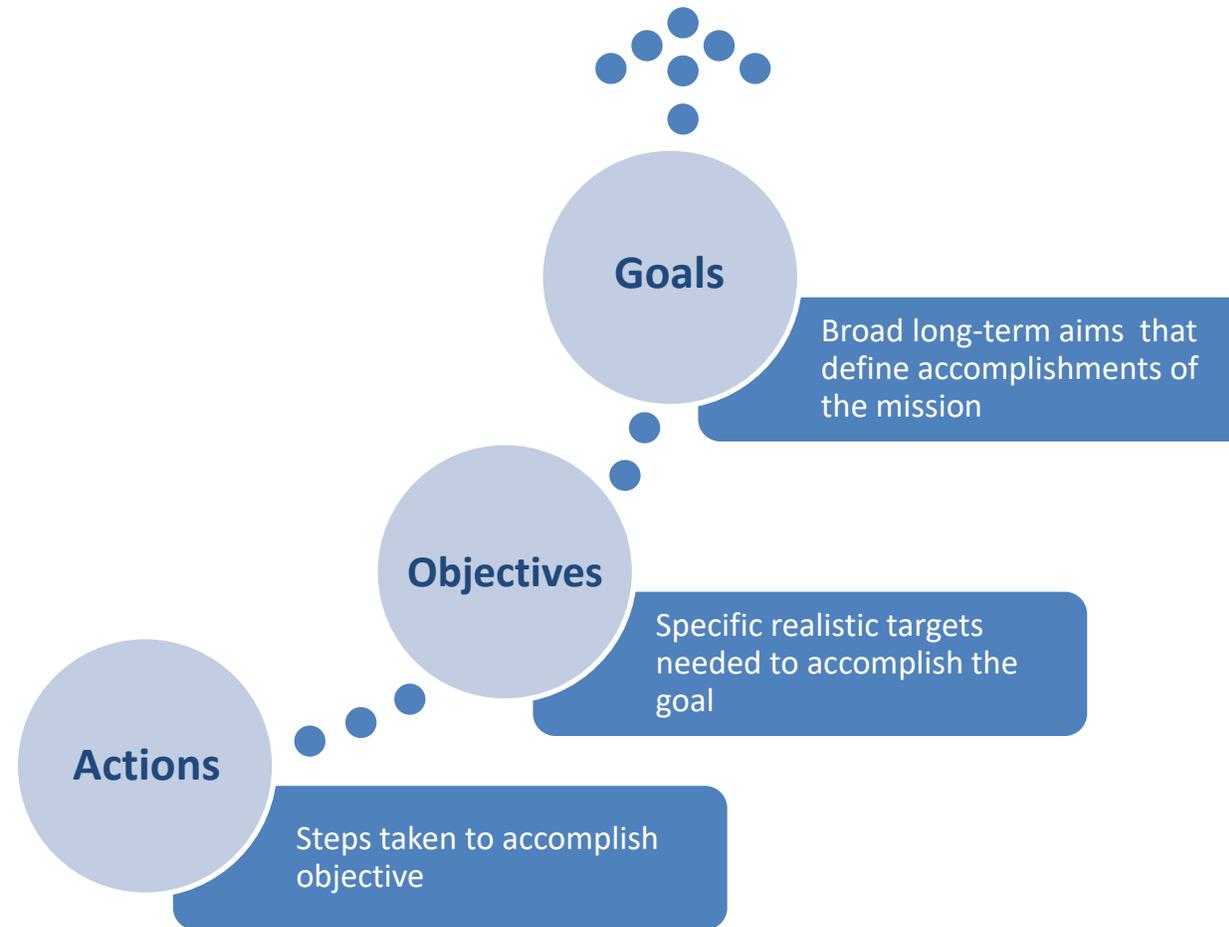
Improve efficiency of intra/inter-partner data exchange and effective use of data



Create an Information Governance framework that addresses multi-disciplinary information management

# Washington State Informatix Roadmap

Mission: To improve population health through timely and actionable information



# Tool

## Building an Informatics-Savvy Health Department Self Assessment

<http://phii.org/infosavvy>

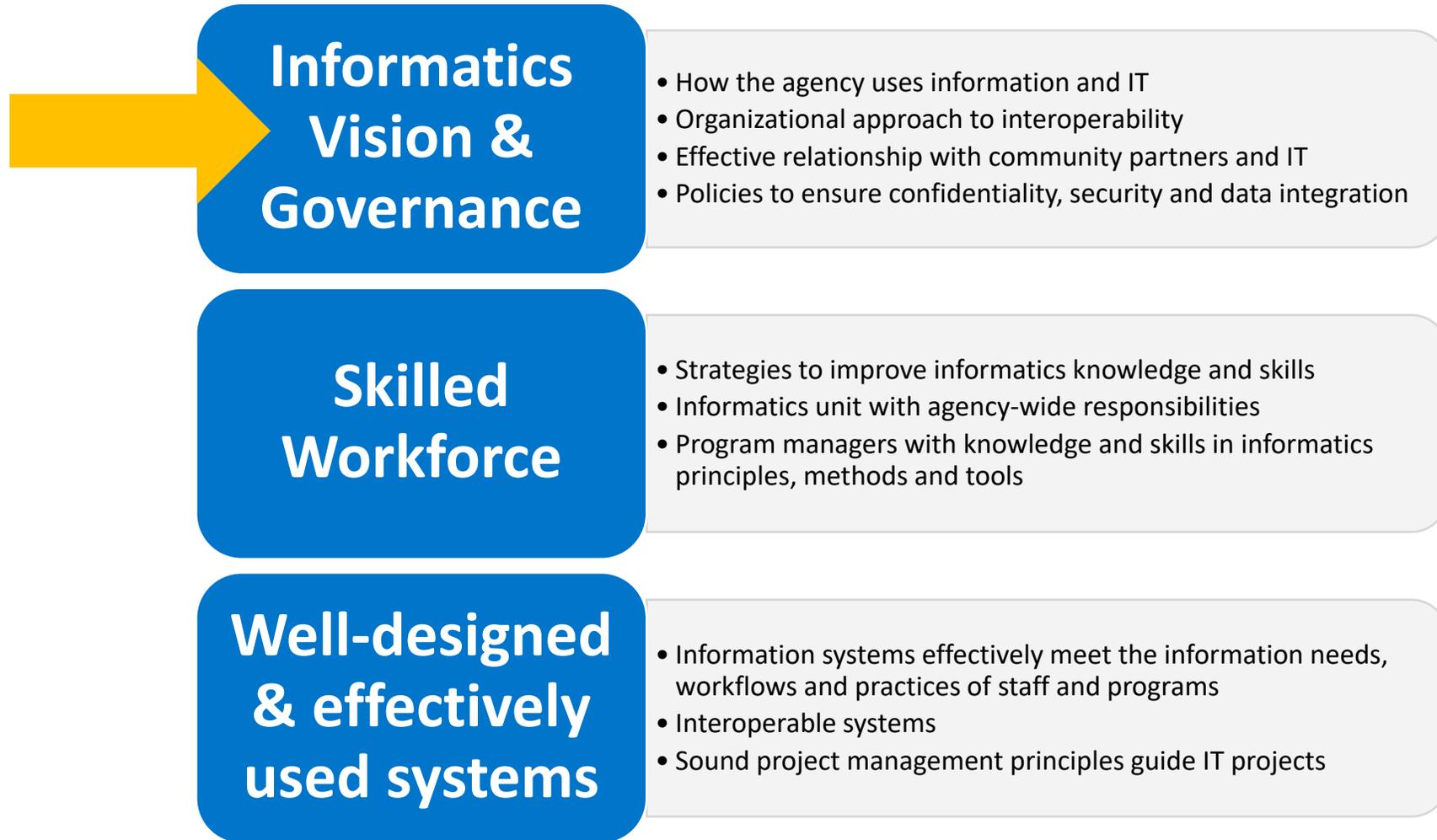
Resources for evaluating responses and creating a plan from assessment results – see “Informatics-Savvy Assessment Support” folder

<http://bit.ly/2aK9cUb>

# Tip: Assess “Effectively” and “Affectively”

1. **Assess across the agency**
2. **Value is in the discussion** – facilitate the assessments in person
3. **Have the right people in the room** – staff to management level

# Key Elements of an Informatics-Savvy Health Department





# Vision, Governance, and Leadership

- Establish leadership role/responsibility as the State Informatics Director
- Assess readiness for e-health and HIE
- Create an e-public health shared vision and strategic roadmap
- Accelerate informatics training and education
- Coordinate operational activities and set priorities
- Maintain a strong assessment and evaluation program

# What do we do?

## (Internal strategies)

### **Coordinate meaningful use (CMS incentive program) activities**

- Manage MU registration application and process
- Focus on a few programs – electronic lab reporting, immunizations, cancer reporting, newborn screening

### **Technical assistance**

- Respond to inquiries (e.g., standards, informatics training)
- Provide outreach and education

### **Support informatics needs of other MDH programs**

- Offer training, assessment, and project support

# What do we do? (External strategies)

## **Coordinate and support the MN e-Health Initiative (public-private collaborative)**

- Manage workgroups to address specific issues
- Develop guidance documents
- Convene stakeholders to discuss issues and needs
- Assess and conduct studies

## **HIE oversight**

- Certify entities that provide HIE services
- Coordinate HIE infrastructure - MNHIN

## **Provide funding to providers/communities/partners**

- Administer MN SIM e-health grants

## **Technical assistance**

- Respond to inquiries
- Provide outreach and education

# Tool: Informatics Profile

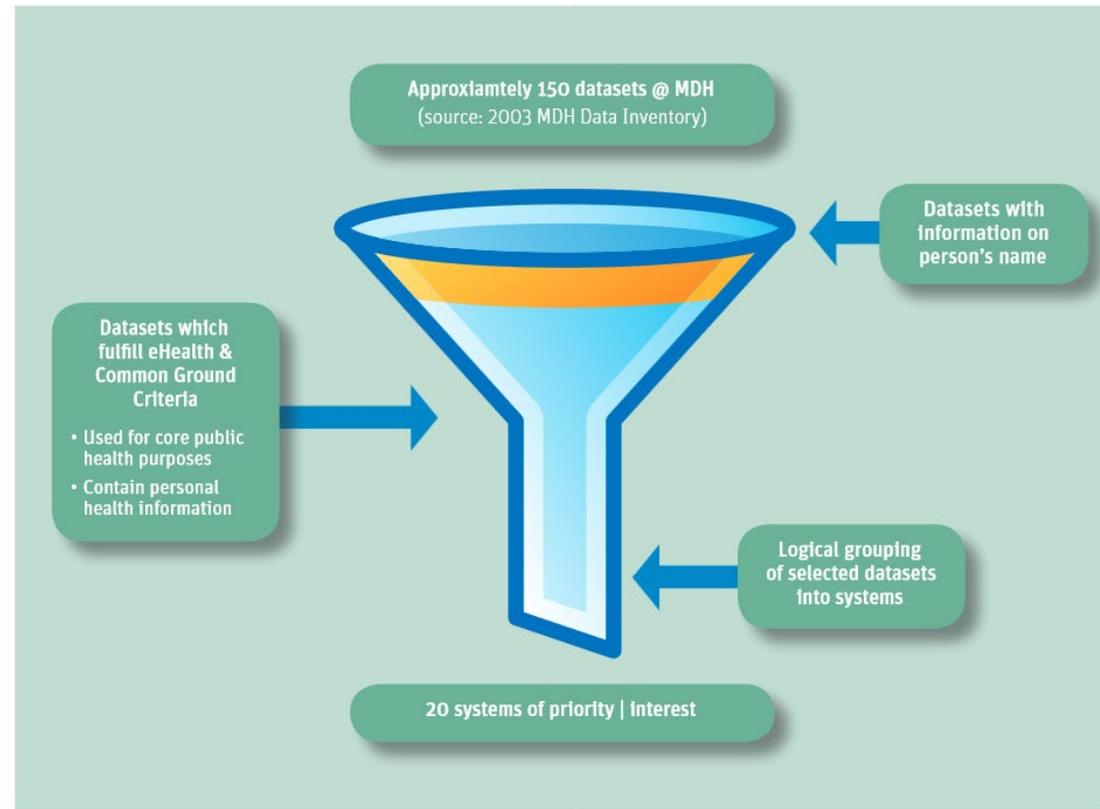
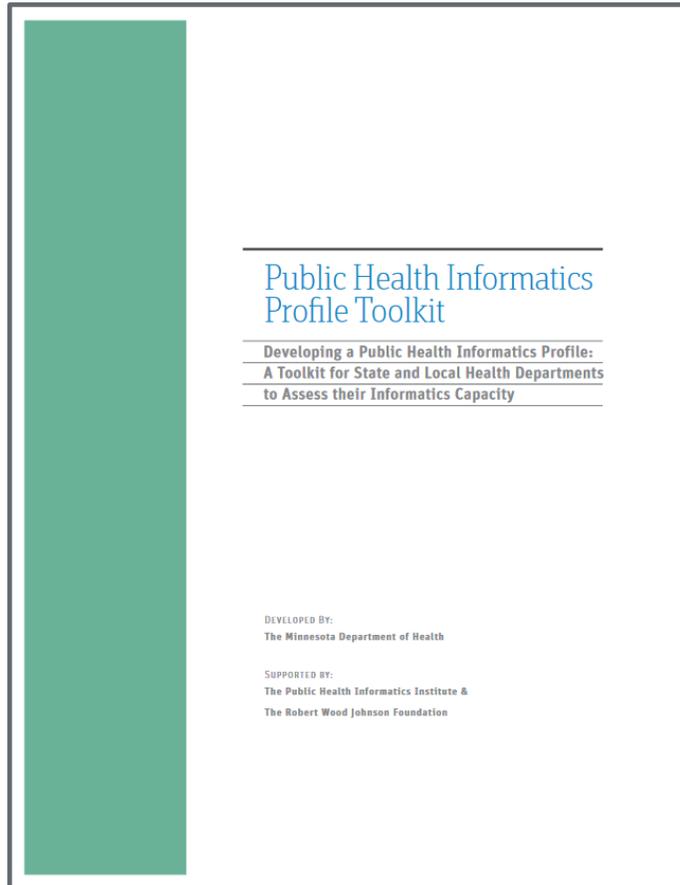


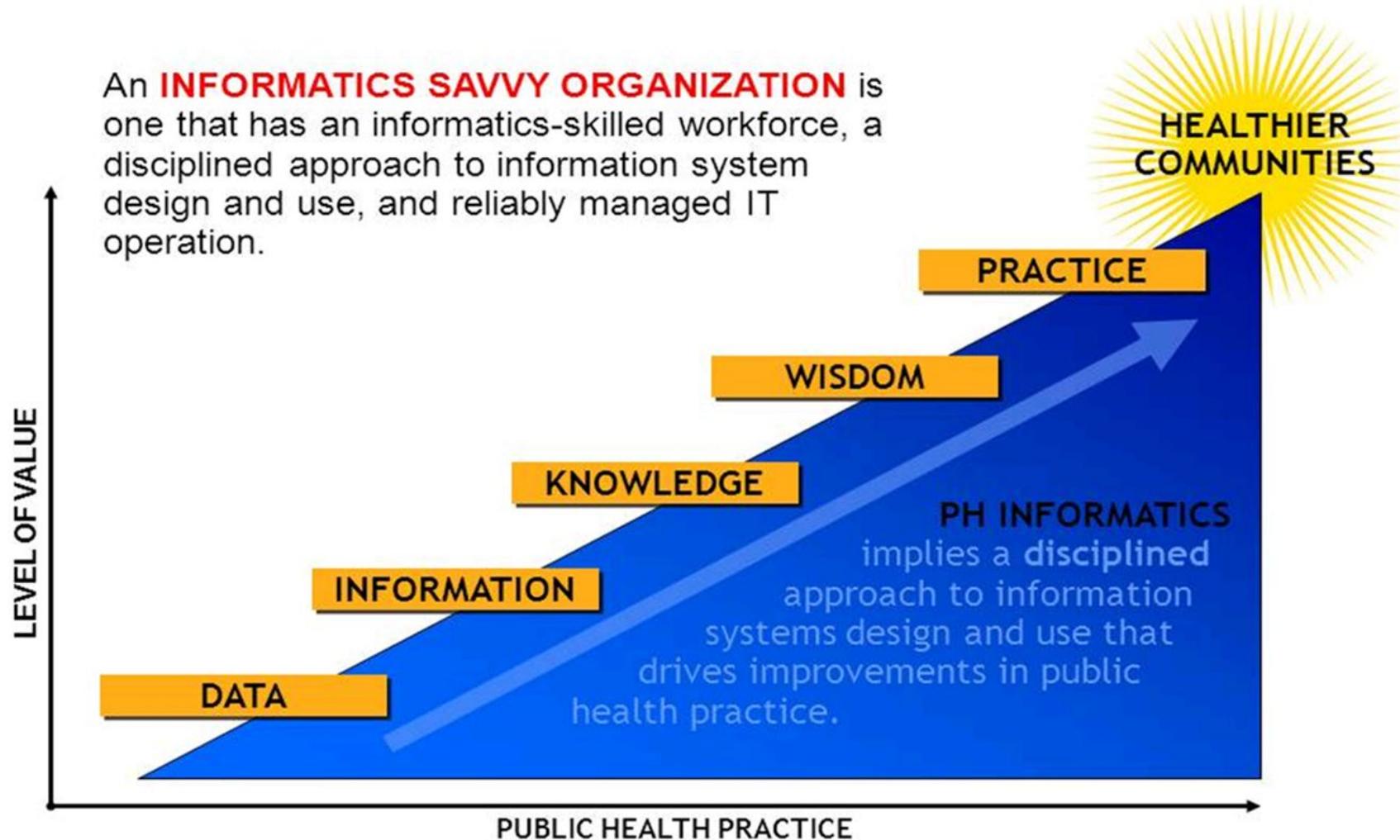
FIGURE 2: REPRESENTATION OF INCLUSION CRITERIA FOR MINNESOTA'S PROFILE

<http://www.phii.org/resources/view/150/public-health-informatics-profile-toolkit>

(also available in Dropbox: <http://bit.ly/2aK9cUb>)

# Tip: Using Informatics to Change Public Health Practice

An **INFORMATICS SAVVY ORGANIZATION** is one that has an informatics-skilled workforce, a disciplined approach to information system design and use, and reliably managed IT operation.



# Key Elements of an Informatics-Savvy Health Department



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## Skilled Workforce

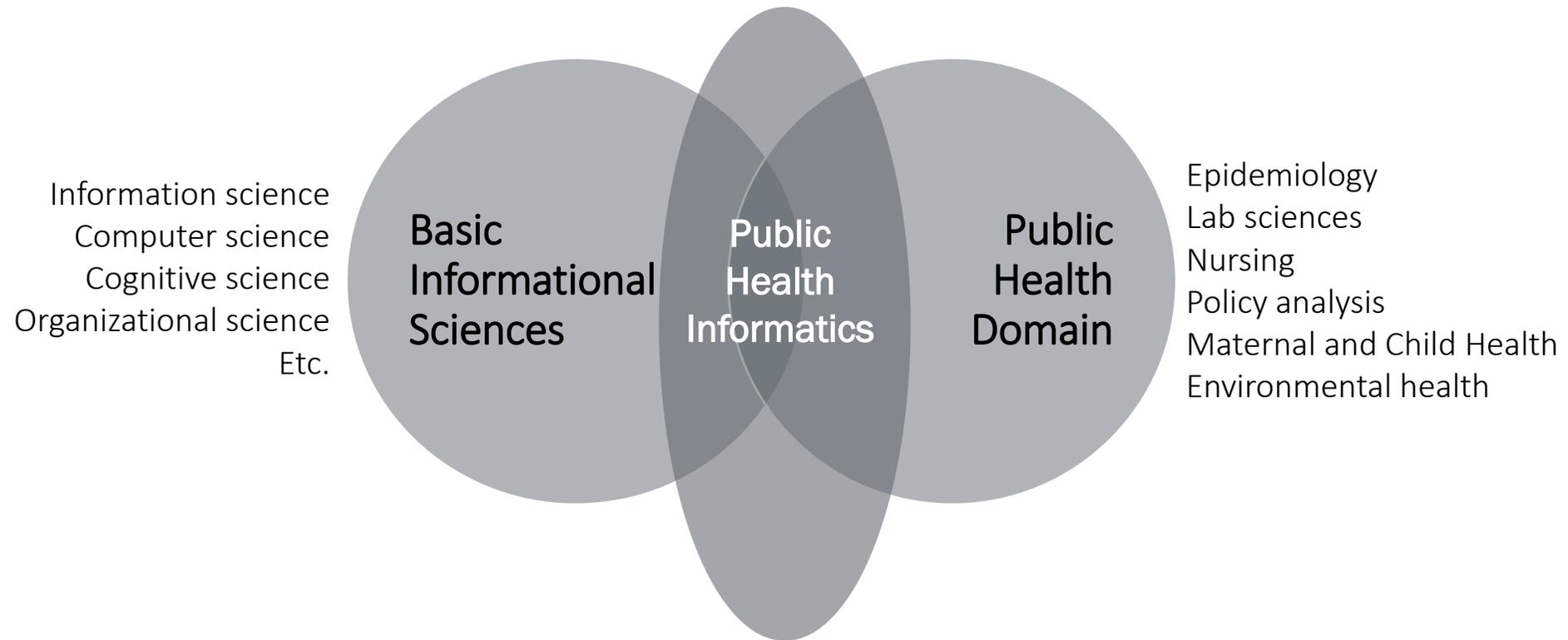
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## Well-designed & effectively used systems

- Information systems effectively meet the information needs, workflows and practices of staff and programs
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# What is Public Health Informatics?

## Informatics as Multi-Discipline Training



# Example Informatics Workforce Roles and Responsibilities

## Executive/Leadership Role

Plans, directs, and formulates policies, sets strategies, and provides the overall direction of agency's informatics activities.

## Manager/Program Leader Role

Directs, manages, and executes day to day operational objectives of public health programs.

## Professional Role

Applies specialized informatics knowledge, informatics theories, concepts, methods, and tools to ensure effective programmatic use of information and information technology.

## Health/Clinical (Licensure) Role

Applies informatics theory and practice to the design and use of clinical information systems within a public health agency, or in the design of public health information or decision support systems to better support health/care.

# PHI Training Opportunities



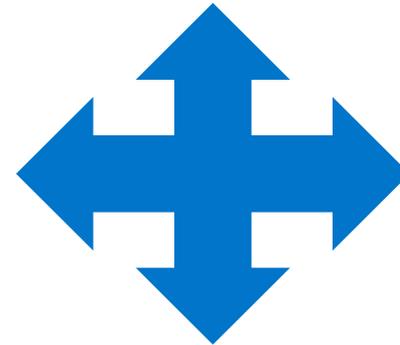
Academic degrees and certificates  
(Public Health Informatics Certificate, MHI, PhD)



Practice-based fellowships for new and existing staff (SHINE)



Partnerships and mentoring  
(student projects, collaborations with health departments)



Online, synchronous and asynchronous programs for existing staff and leaders (Informatics Academy)



# Minnesota Example Activities, 2004-2016

- **Academic degrees and certificates**
  - Graduate degrees in health informatics (MHI, PhD) from University of Minnesota School of Public Health
- **Online, synchronous and asynchronous programs**
  - AMIA 10x10 – Health Information Exchange for Population Health
  - PHII Informatics Academy: Business Process Requirements
- **Partnerships and mentoring**
  - Student mentoring/projects from University of Minnesota Nursing Informatics Program
  - Collaborative efforts with external partners – this workshop!
- **Practice-based fellowships**
  - SHINE Fellowships
    - Two current HSIPs and one I-TIPP

# Tool: Interoperability for Public Health Agencies

## Question 2.4 Training

Do staff members have regular and ongoing access to training for informatics or health information technology?

<i>Check Box</i>	<i>CMM Level Name</i>	<i>General Description</i>
<input type="checkbox"/>	0 - Absent	No capability is evident; "starting from scratch."
<input type="checkbox"/>	1 - Initial	No organized, systematic efforts, only ad hoc efforts and isolated, individual heroics.
<input type="checkbox"/>	2 - Managed	Some organized efforts have begun or are completed but not systematically documented or institutionalized.
<input type="checkbox"/>	3 - Defined	Systematic, ongoing efforts underway, but there is no overall method to measure progress or to ensure coordination.
<input type="checkbox"/>	4 - Measured	Systematic, ongoing efforts underway to measure progress and ensure coordination.
<input type="checkbox"/>	5 - Optimized	Systematic, ongoing efforts underway with quality improvement activities to align assessment results with guiding vision, strategies and performance metrics.

CMM: Software Engineering Institute. (1993). *Capability Maturity Model for Software, Version 1.1*. Pittsburg: Carnegie Mellon University.  
PHII Agency Interoperability Tool, 2016

# Tool: Interoperability for Public Health Agencies



**Interoperability for Public Health Agencies: A Self-Assessment Tool**

February 15, 2016



**Building an Informatics-Savvy Health Department: A Self-Assessment Tool**



Photo credit: Dawn Arlotta

# Tip: Apply for a SHINE Fellow



## ALL FELLOWS COMBINED



# Key Elements of an Informatics-Savvy Health Department



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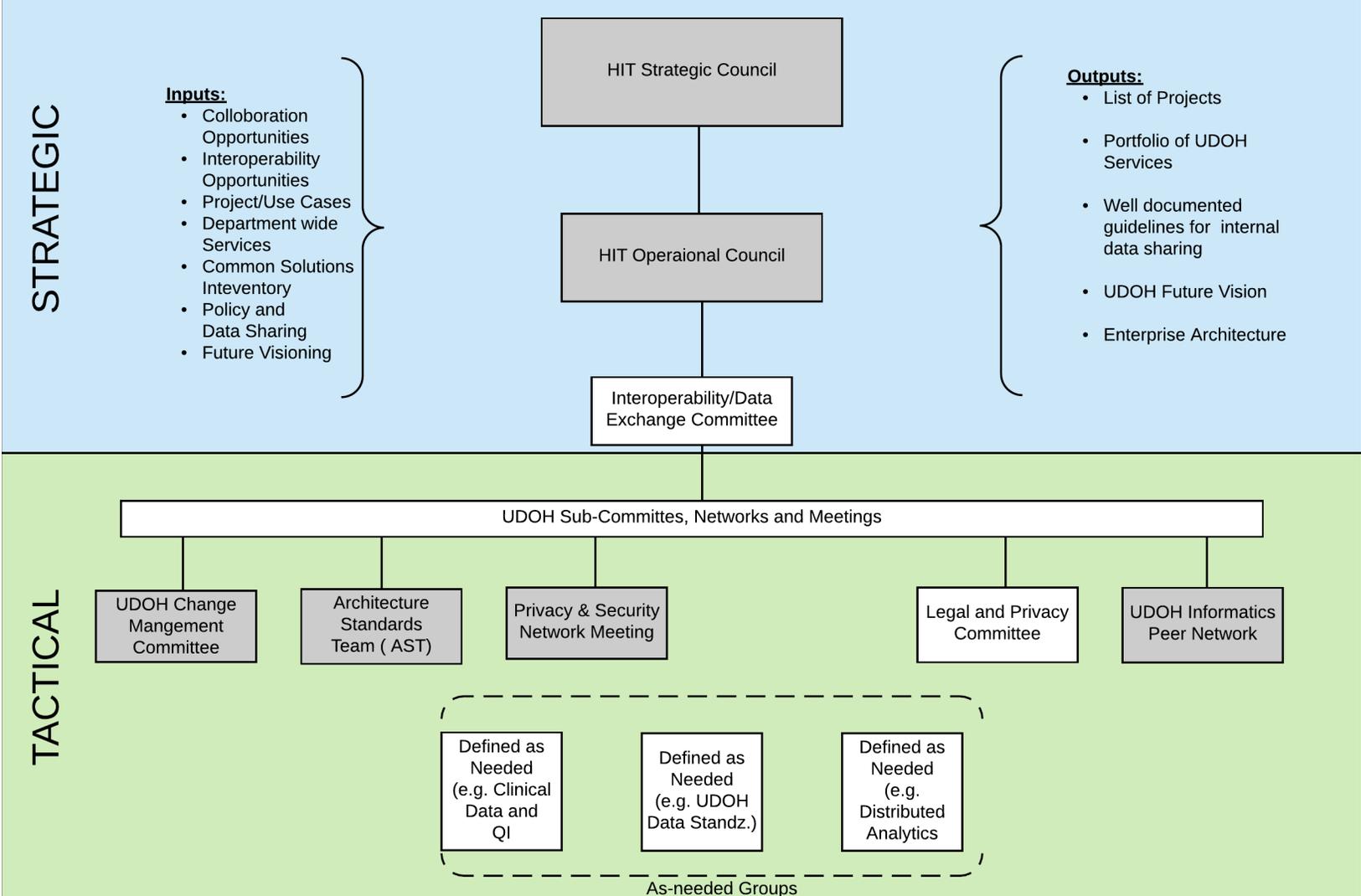
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- Department-level Informatics Office (2007)
- Informaticist Job Descriptions (2011)
- Health Informatics Managers (Division-level)
- Senior Health Informaticists (Bureau-level)
- Health Informaticists (Major System or Program-level)
- Information Security Officers hired under the informatics positions.

# Informaticians as Integrators

## Current and Proposed Structure to Enhance Interoperability



# Peer-to-Peer Training

- Department-wide Monthly Informatics Brown Bags **since 2007**
- Department-wide Informatics Peer Network **since 2013**
- On Job Training Through Common Responsibilities
  - Project management/Project Plan
  - Business Case Development
  - Use Case Development
  - Requirement Development
  - IT Contract Management
  - Analytics Development
  - IT Service Level Agreement Management
  - System Security Plan & Risk Assessment

# PHII Template Informatics Job Descriptions

- As the need for informatics expertise grows, so does the need for informatics job descriptions. PHII partnered with CDC, ASTHO and NACCHO to develop four template job descriptions, from entry level to Chief Informatics Officer for an agency.
- <http://www.phii.org/resources/view/6423/workfor-ce-position-classifications-and-descriptions>





- Set the upper limit of the salary high
- Help supervisors to understand what are and what are not Informaticians' responsibilities
- Provide across-agency communication forum for program-based informaticians.

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# Population Health Practice



## **Utah Department of Health's Definition of Population Health:**

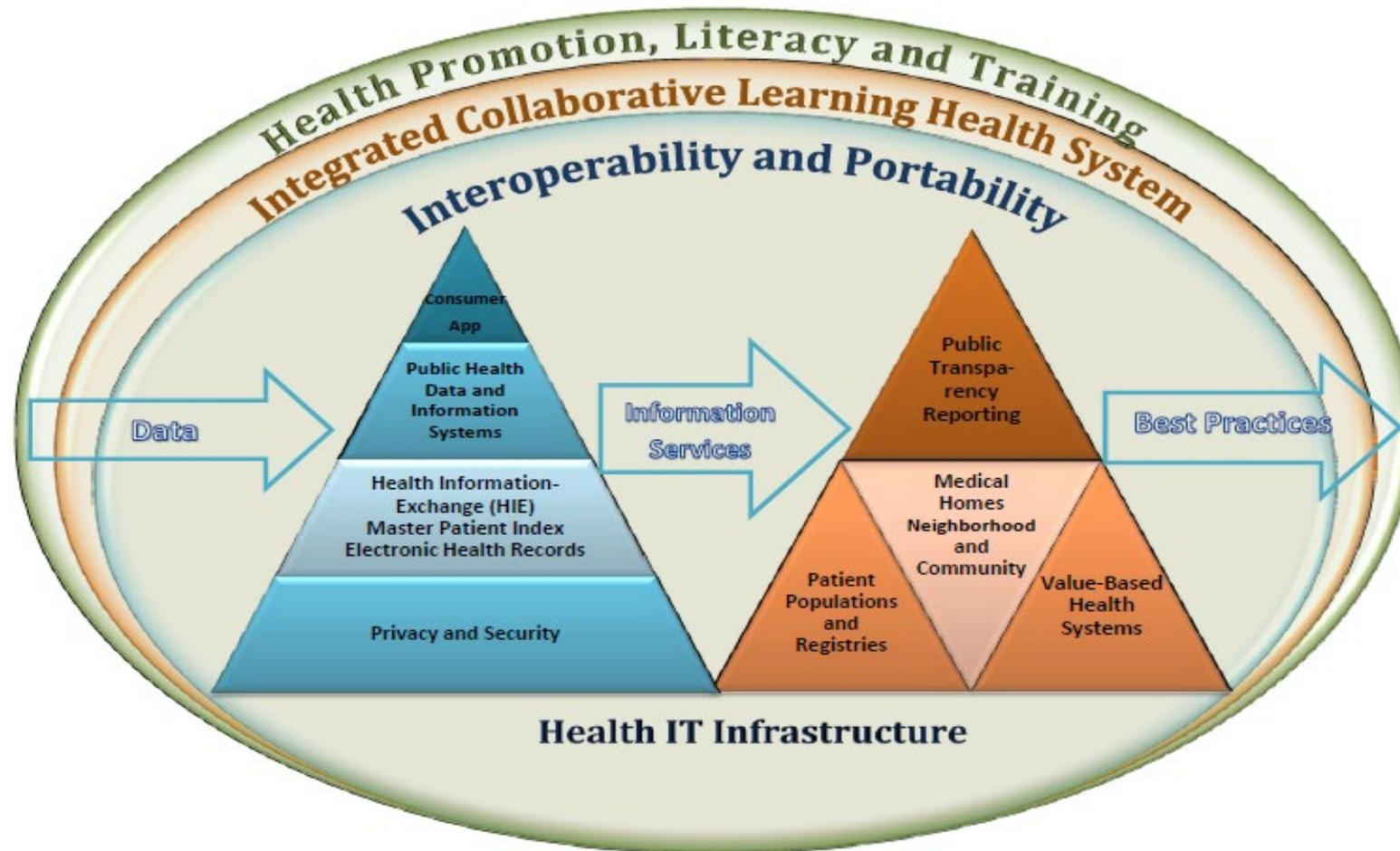
UDOH integrates its practice with health systems and payers to fully address determinants and outcomes of health in the Utah population and its sub-populations.

# PopHealth Informatics Needs

Domain	Public Health Informatics	Population Health Informatics
Data Source	Public health data	+ clinical & other sources
Data Model	Disease/event centric	+ person, people, community-centric, relational, integrated
Interoperability	Silo systems	+ linkage and real-time exchange are required
User	Public health professionals	+ diverse external users
Analytics	Standard public health measures, pre-defined conditions	+ flexible aggregations, user-defined measures and populations

# Statewide Interoperability Framework

Figure 1. Priority Framework of Health IT for Population Health and a Statewide Learning Health System in Utah



# Public Health Internal Interoperability Needs Assessment



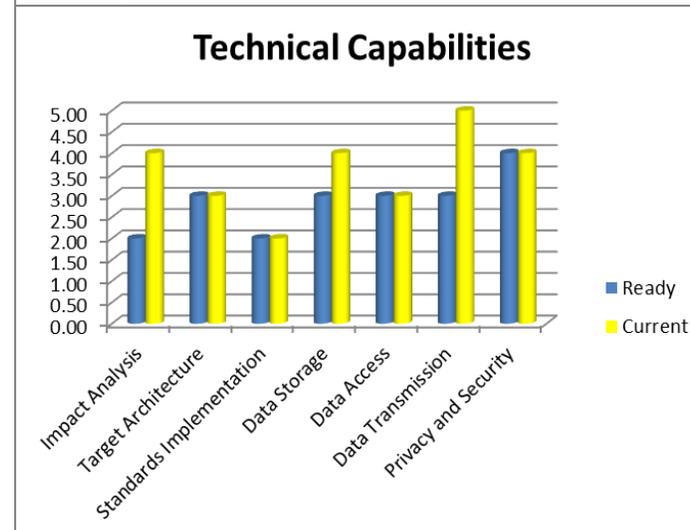
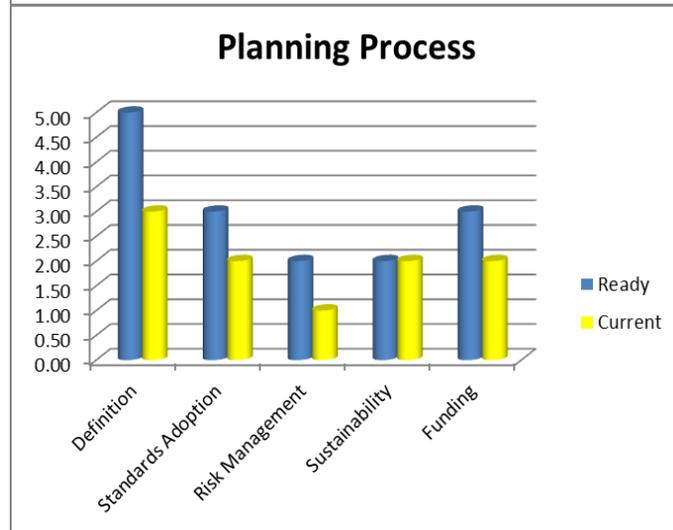
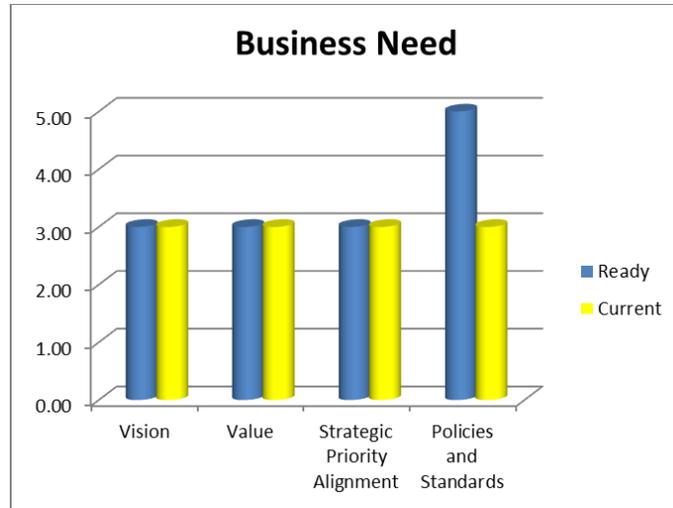
UDOH System Interoperability Level	Current Capability
<b>Level 1</b> Non electronic data- No use of IT to share information Examples include paper, mail, and phone call.	0
<b>Level 2</b> Machine transportable data Examples include fax, email, and unindexed documents.	5
<b>Level 3</b> Machine Organizable Data Structured messages, unstructured content. Human action required.	12
<b>Level 4</b> Machine interpretable Data Structured messages, standardized content- including HL7 messages No human action required.	6
<b>TOTAL ASSESSED MAJOR SYSTEMS</b>	23

Overall Score	
Core Capability	Scores %
Business Need	90.00%
Stakeholder Community	75.00%
Planning Process	68.67%
Technical Capabilities	100.00%

# UDOH Interoperable Assessment Results

>= 90% **Ready**  
< 90% **Capable**

Well-positioned to realize value of information sharing and exchange.  
 Capable of realizing value, but improvements are needed to realize full potential.



# Tools for Interoperability Needs Assessment



- The National Information Exchange Model (NIEM) Readiness Assessment Tool [https://www.niem.gov/aboutniem/roadmap/Documents/NIEM\\_Engagement\\_Process-ReadinessAssessmentTool\\_v1.0.zip](https://www.niem.gov/aboutniem/roadmap/Documents/NIEM_Engagement_Process-ReadinessAssessmentTool_v1.0.zip)
- Utah Department of Health Interoperability Needs Assessment Data Collection REDCap Tool ([kdavis@utah.gov](mailto:kdavis@utah.gov)) based on [Public Health Informatics Profile Toolkit](#) and [NIEM Interview Framework](#)
- The National Alliance for Health Information Technology and HIMSS uses the Center for Information Technology definition based on the original article: Walker, Jan, et al. "The value of health care information exchange and interoperability." *Health affairs* 24 (2005): W5. Additional definition starts under "Analytic Framework" page W5-11 <http://content.healthaffairs.org/content/early/2005/01/19/hlthaff.w5.10.full.pdf+html>





Helpful  
Tips

- Department-wide planning, coordination and management are key success factors.
- Well-designed shared services in
  - Metadata management
  - Terminology management
  - Common data model and standards
  - Master Person Index and Provider Directory

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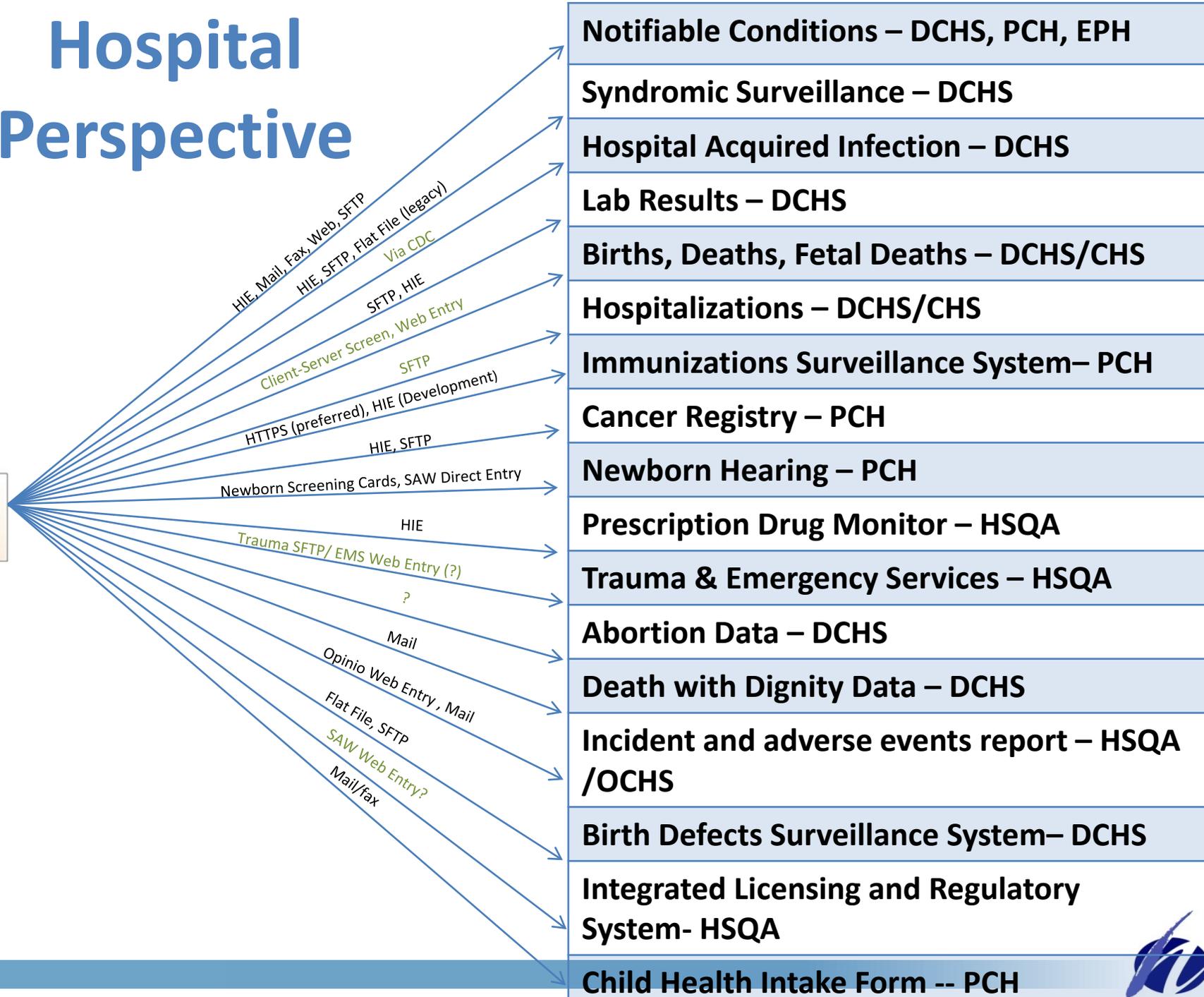
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# Hospital Perspective

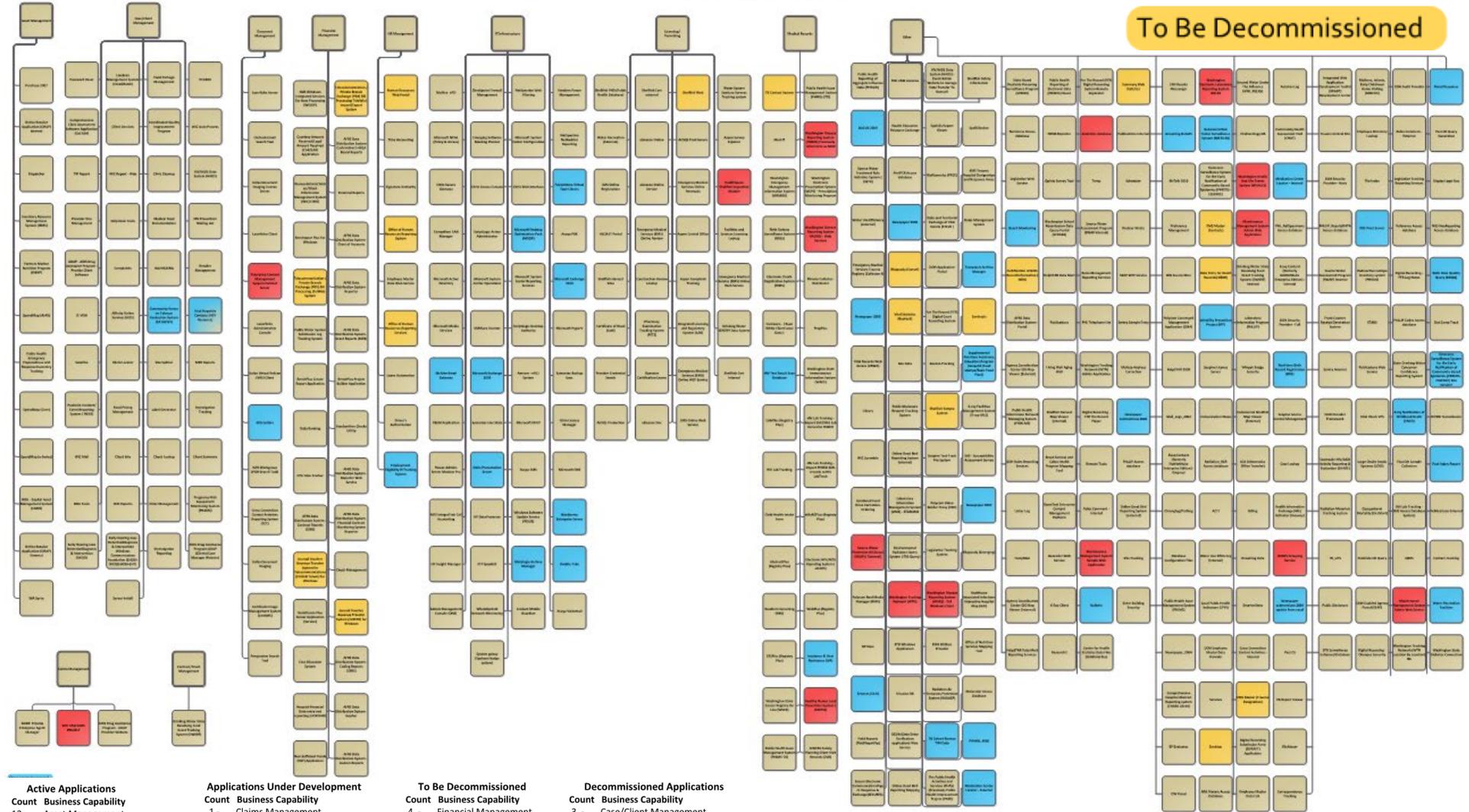


Decommissioned

Under Development

To Be Decommissioned

DOH Application Inventory By Business Capability



**Active Applications**  
 Count Business Capability  
 12 - Asset Management  
 42 - Case/Client Management  
 2 - Claims Management  
 1 - Contract/Grant Management  
 12 - Document Management  
 26 - Financial Management  
 6 - HR Management  
 40 - IT Infrastructure  
 29 - Licensing/Permitting  
 24 - Medical Records  
 184 - Other  
**378 - TOTAL**

**Applications Under Development**  
 Count Business Capability  
 1 - Claims Management  
 1 - Licensing/Permitting  
 3 - Medical Records  
 10 - Other  
**15 - TOTAL**

**To Be Decommissioned**  
 Count Business Capability  
 4 - Financial Management  
 2 - HR Management  
 3 - Financial Management  
 1 - Document Management  
 1 - Financial Management  
 1 - HR Management  
 10 - Other  
**18 - TOTAL**

**Decommissioned Applications**  
 Count Business Capability  
 3 - Case/Client Management  
 1 - Document Management  
 1 - Financial Management  
 1 - HR Management  
 9 - IT Infrastructure  
 2 - Medical Records  
 28 - Other  
**70 - TOTAL**

# Surveillance Functions

## Registry

Identifiable data used to track health diagnoses, vital status, and/or procedures for defined patient population

*Example: Cancer Registry, Syndromic Surveillance*

## Case Management

Identifiable data;  
Longitudinal management of a case-patient

*Example: Disease Surveillance System*

## Care Delivery

Identifiable data used primarily for clinical decision support; Requires bi-directional exchange w/ healthcare system

*Example: Prescription Monitoring Program, Immunization Information System*

## Survey

De-identified data used to track population health

*Examples: BRFSS*

## Licensing

Data tracked for regulatory purposes to grant licenses

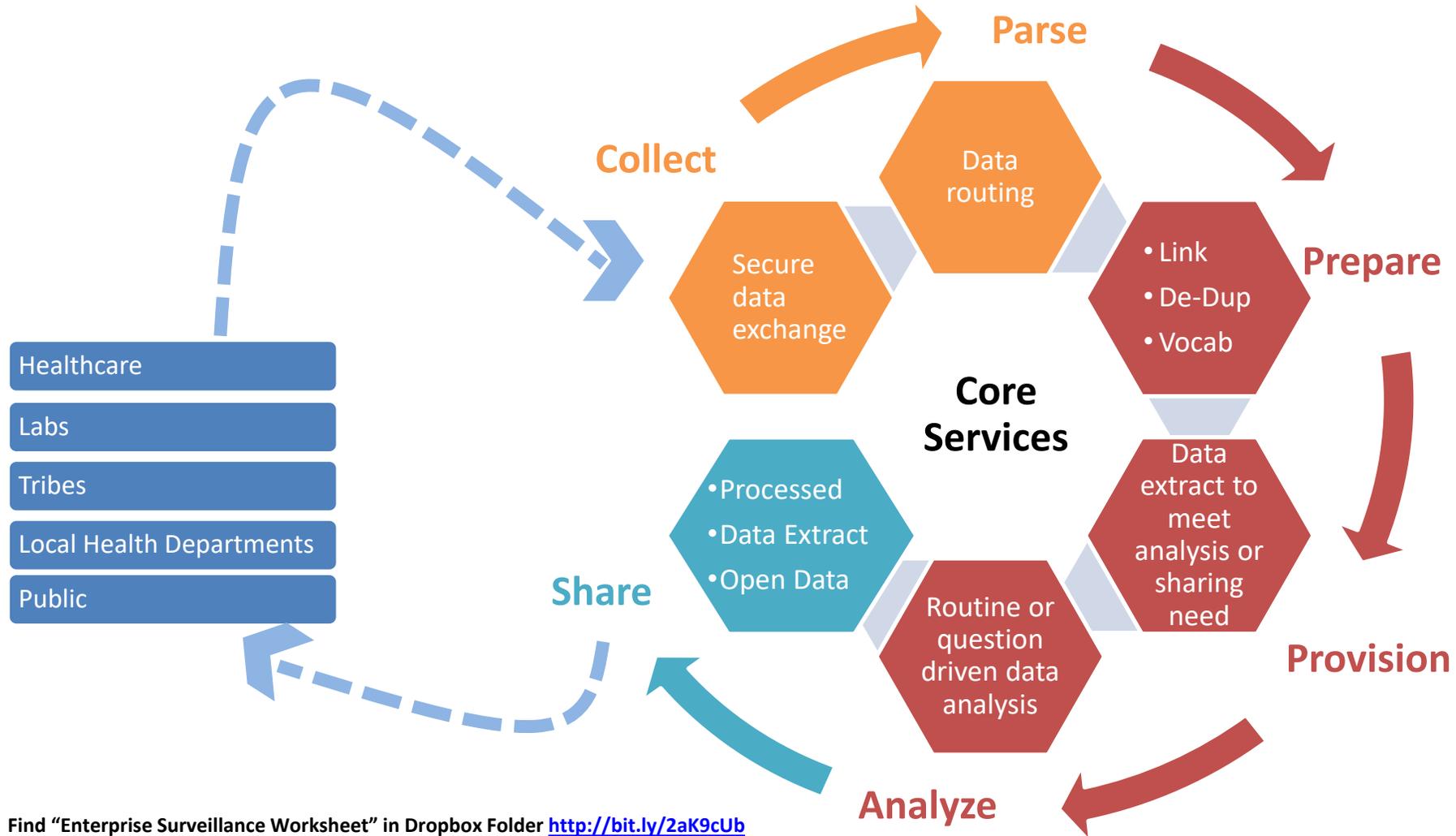
*Examples: Integrated Licensing and Regulatory System*

## Environmental Health Data

Geographically organized data (non person-based)

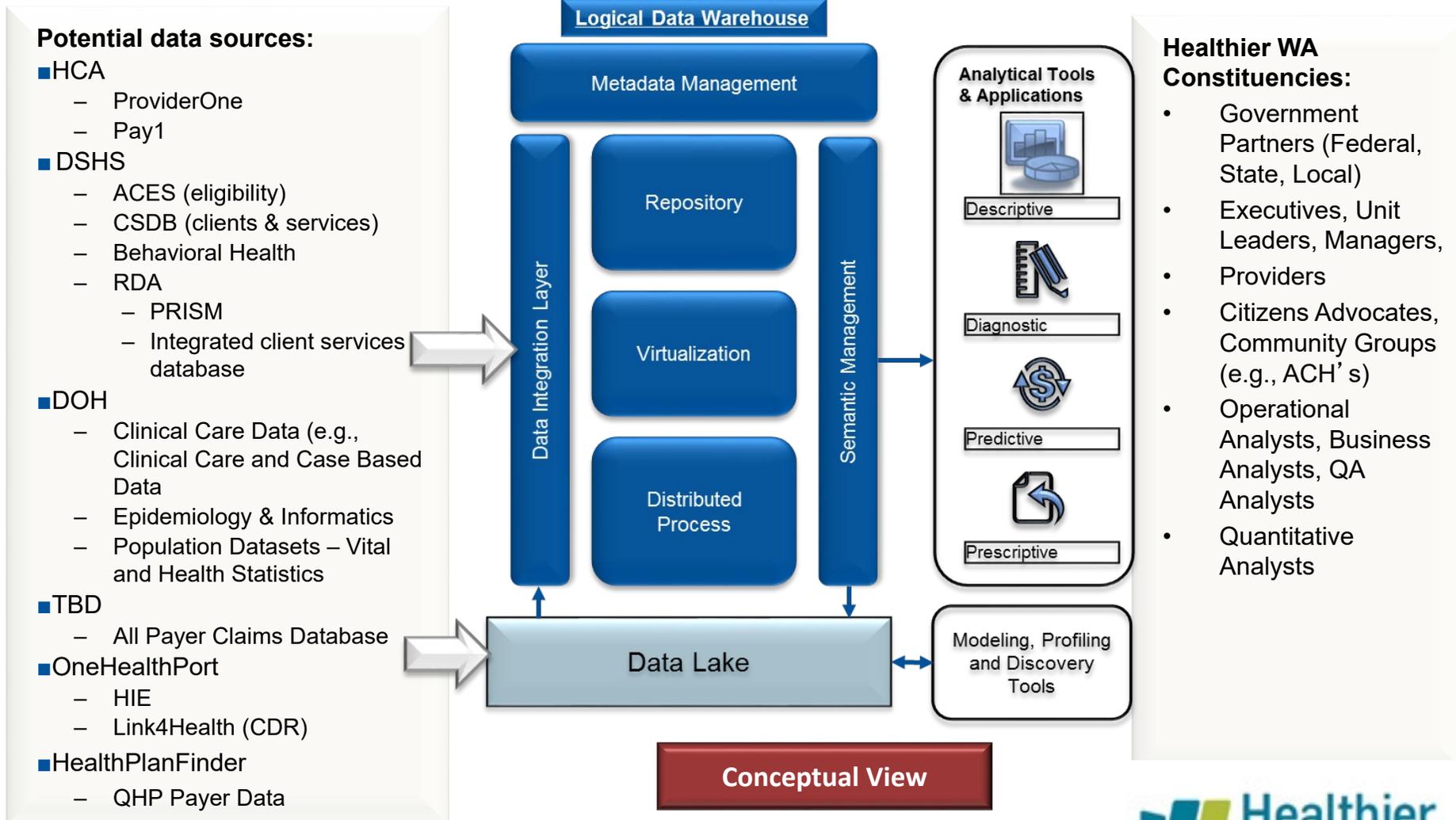
*Example: air quality data*

# Tool: Enterprise Surveillance



Adapted from CDC "Surveillance Data Platform (SDP) Shared Services" Presented to Joint Public Health Informatics Task Force, June 15  
Brian Lee, Chief Public Health Informatics Officer, Office of Public Health Scientific Services, CDC

# Analytics, Interoperability and Measurement (AIM) Healthier Washington (SIM award).



## Reflections

What are the opportunities to incorporate informatics into your agency's priorities?

What do you *least* know about your agency's informatics capacity?

What are the next steps *you* will take to build capacity?

For a list of resources, go to <http://bit.ly/2aK9cUb>

## Final thoughts

- Remember to review the list of resources
  - <http://bit.ly/2aK9cUb>
- The framework is a work in progress; please share your ideas
- There is no one perfect way to build and organize informatics in your health department; the key is to continually identify the next best step to take, whether large or small.



# Thank you!

- Bill Brand, [bbrand@phii.org](mailto:bbrand@phii.org)
- Bryant Karras, [bryant.karras@doh.wa.gov](mailto:bryant.karras@doh.wa.gov)
- Marty LaVenture, [martin.laventure@state.mn.us](mailto:martin.laventure@state.mn.us)
- Wu Xu, [wxu@utah.gov](mailto:wxu@utah.gov)

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