

PUBLIC HEALTH DATA STANDARDS CONSORTIUM
~ 2011 BUSINESS MEETING OF MEMBERS ~
October 17-18, 2011, Hyattsville, MD

ONC S&I Public Health Reporting Initiative

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Assuring Health IT Standards for Public Health

On-going Projects



- **Laboratory Reporting Interface Initiative**
 - Laboratory Result Reporting to Public Health
- **ONC S&I Public Health Reporting Initiative** –
Community-based Initiative Started in July 2011

For the Standards and Interoperability Framework
Wiki Site, <http://wiki.siframework.org/Home>

ONC S&I Public Health Reporting Initiative

- Emerged from the S&I LRI Initiative
- Developed by the public health community at large during July-September 2011
- Described in the Charter Document as follows:

Charge

- The S&I Public Health Reporting Initiative will **develop and implement a standardized approach to electronic public health reporting from EHR systems to local, state and federal public health** programs that addresses the needs of various public health programs

Scope

- **Initial Public Health Event Report** from EHR system (inpatient and or outpatient) to public health agency (local or state or federal)

Deliverable

- **ONE Implementation Guide for Initial Report** that defines core data elements across multiple public health programs

Timeline

- **12 month** starting October 1, 2011

ONC S&I Public Health Reporting Initiative

- There is an interest at ONC to fund the PH Reporting Initiative
- There is an interest at ONC to collaborate with other agencies to support the Initiative (CDA, FDA and others)

ONC S&I Public Health Reporting Initiative

- ONC is looking for incremental deliverables – projects that can be finished in **9-12** months:
 - **One Implementation Guide** for Initial Report that defines core data elements across multiple public health programs
 - **One Use Case** with multiple user stories, e.g.,
 - Child Health (Hearing, Vital Records, Birth Defects, Others)
 - Communicable Diseases (Lab Reports and Case Reports)
 - Chronic Diseases (Lab Reports and Case Reports)
 - Adverse Event Reports (FDA Reporting)
- Need to describe the Initiative's Tasks/Deliverables/Timeline for the ONC Steering Committee in 2-3 slides

ONC S&I Public Health Reporting Initiative

By December 2011

Consensus-based PH Reporting HIT Standardization Framework

Consensus-based PH Reporting Definitions

Consensus-based Use Case Selection Criteria

Consensus-based **One PH Reporting Use Case** of the Initial PH Report with Multiple User Stories, e.g.,

- Child Health (Hearing, Vital Records, Birth Defects, Others)
- Communicable Diseases (Lab Reports and Case Reports)
- Chronic Diseases (Lab Reports and Case Reports)
- Adverse Event Reports (FDA Reporting)

By September 2012

One Implementation Guide for Initial PH Report that defines core data elements across multiple public health programs

ONC S&I Public Health Reporting Initiative

Milestones/Deliverables/Timeline

Initiation	Final version of the Charter ★	1. PH Reporting Definitions 2. PH Reporting Standardization Framework 3. PH Reporting Use Case with Use Stories	1. Func Reqs Analysis on the PH Reporting Use 2. Standards Selection 3. Guide Development 4. Guide's Public Review 5. Final Guide	5. Guide Testing 6. Resources (Tools) for PH Reporting 7. PH Reporting Certification 8. MU Stage 3 Proposed Objectives for PH Reporting
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Aug

Sept

Oct

Nov

Dec

January-May

June-September

2011

2012

Phase 1

(September-December 2011)

1. Charter has been finalized
2. Building a consensus on
 - PH Reporting definitions
 - PH Reporting HIT Standardization Framework
 - Use Case Selection Criteria
 - Selection of Use Case(s)
3. Development of detailed 9mos work plan (January - September 2012)
 - Define Tasks/Deliverable/Timeline
 - Form Workgroups as needed

Phase 2

(January-May 2012)

1. Conduct functional requirements analysis for the PH Reporting Use Case
 - Workflow and dataflow modeling
 - Core data elements mapping
2. Select Standards (gap/overlap analysis)
3. Develop PH Reporting Implementation Guide
4. Public Review of the Implementation Guide
5. Test PH Reporting Implementation Guide (reference implementation)
6. Establish PH Reporting Certification Process
7. Propose Public Health Objectives for Stage 3 MU

S&I PH Reporting Initiative

PH Reporting Health IT Standardization Framework

Proposal for Review

Acknowledgements:

- Public Health Data Standards Consortium (PHDSC)
- National Association of City and County Health Officers (NACCHO), USA
- Participants of the NACCHO Workshop on *Business Process Analysis in Public Health*, Salt Lake City, UT, December 2011
- Centers for Disease Control and Prevention (CDC), USA
- Quality, Research and Public Health Committee, Integrating the Healthcare Enterprise (IHE)
- Public Health and Emergency Response Workgroup, Health Level Seven (HL7)
- Structured Documents Workgroup, HL7

Assuring Health IT Standards for Public Health

NACCHO-funded Project

Business Processes of Local Health Departments project has developed a **Public Health HIT Standardization Framework** based on the common business areas, business processes, information system functions and data content

- **Resulted from** the 2010 PHDSC Annual Meeting
- Currently **under review** by the ONC S&I Public Health Reporting Initiative's participants as a potential **common framework** for Public Health HIT Standardization

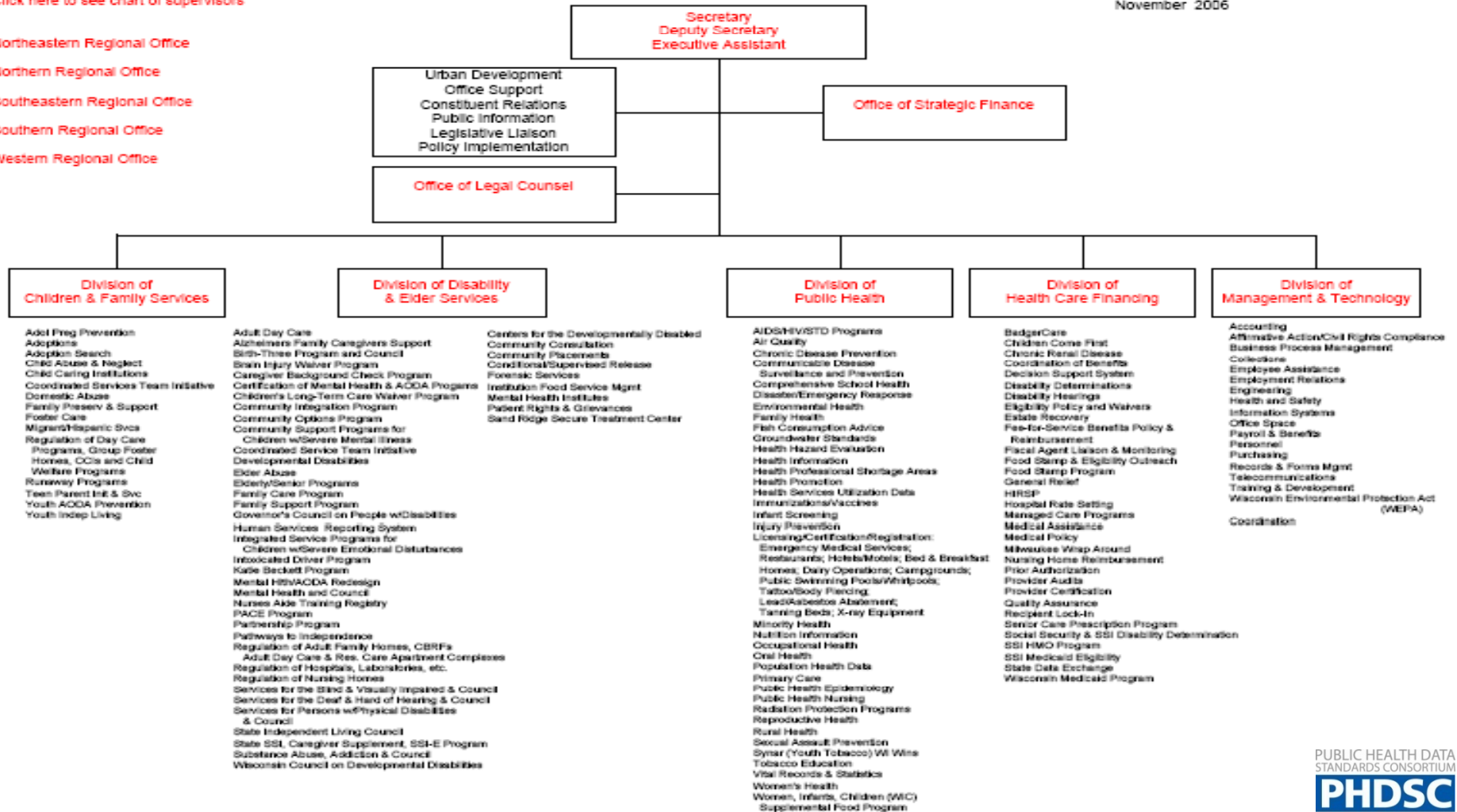
State Health Department Organizational Chart

Department of Health and Family Services Functions

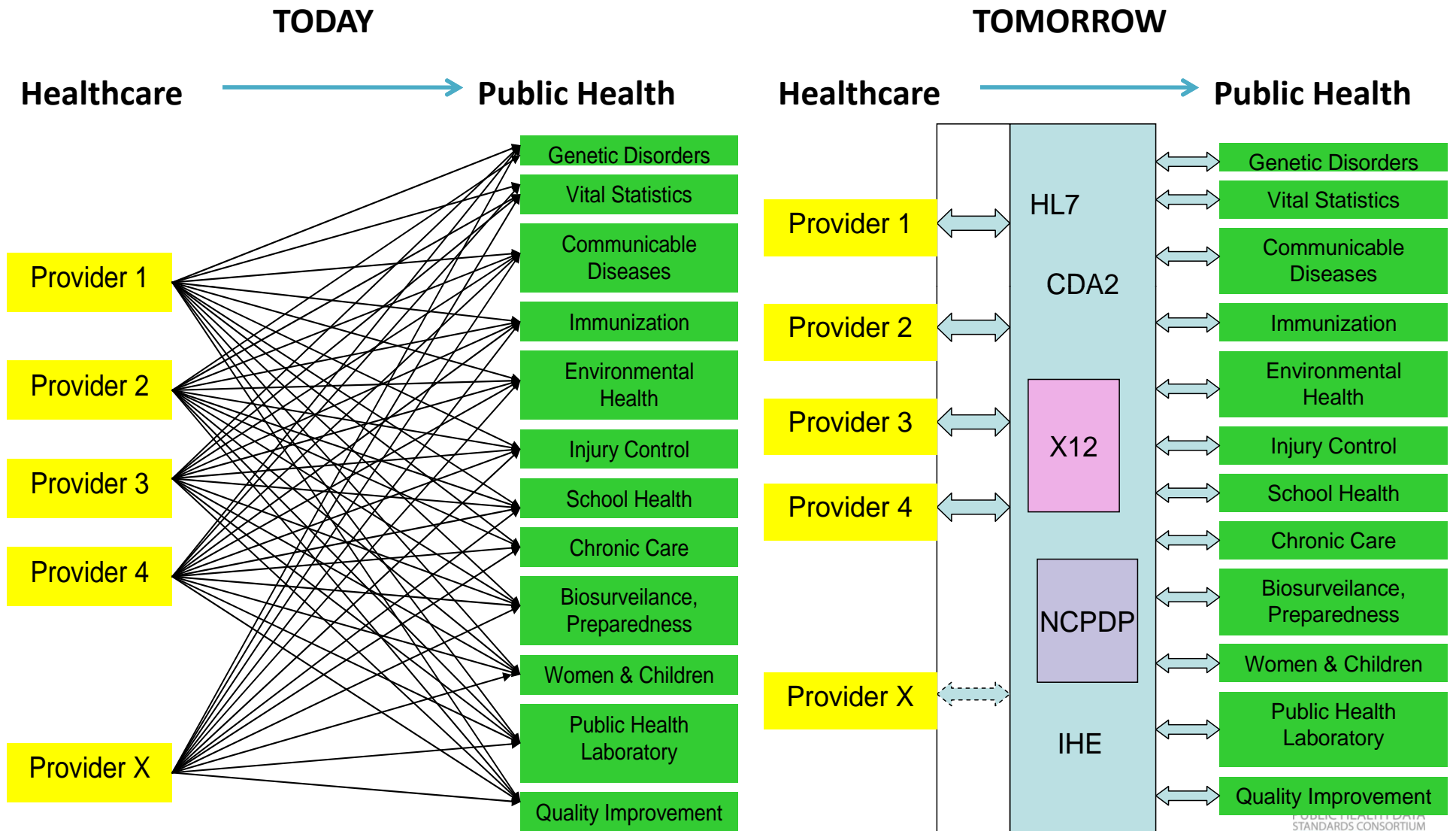
November 2006

[Click here to see chart of supervisors](#)

- Northeastern Regional Office
- Northern Regional Office
- Southeastern Regional Office
- Southern Regional Office
- Western Regional Office



From Connectivity to Interoperability



Harmonizing Public Health Operation across Various Domains/Programs

The operation of local, state and federal public health agencies under the core public health functions (assessment, policy and assurance) is focused on enabling resources and services for the public's health protection. The public health operates under the following **business areas**:

- **Population** – Know population that is served
- **Resources** – Know healthcare capacities and other resources available to the population
- **Environment** – Know the environment in the jurisdiction to prevent and control possible unhealthy exposures
- **Protection** – Protect the public in the jurisdiction from infectious diseases and exposure to disease risk factors, environmental and injury hazards and natural disasters
- **Healthy Development & Wellness** – Promote healthy pregnancy, child development, and ongoing wellness for the served population
- **Direct Care** – Enable access to care for underserved population and people with special needs
- **Agency Operation** – Enable program operation to provide services to the population in need
- **Research** – Conduct research to evaluate public health interventions and to develop new interventions

Business Processes: Patient & Population Level

Core Public Health Functions	Public Health Business Processes	
	Patient-level	Population level
ASSESSMENT	Event identification	Outbreak identification
	Event investigation	Outbreak investigation
	Event management	Outbreak management
ASSURANCE	Event management evaluation	Outbreak management evaluation
POLICY	Mitigation	Mitigation

Examples of Interoperability Standards by Information Systems Function

Information System Functions	Examples of Related IHE Profiles and Standards
Collect Data	RFD, XDS, LAB TF (XD*Lab, Lab message), QRPH content (EHDI, PRPH-CA, MCH, DSC), PCC Content (LDS, XDS-MS, XPHR, IC), RPE, RDA, XD* with HL7 CDA for PH Reporting Reporting Requirements (Pending HL7 work) Report Criteria Guideline Manager Practice Manager Data Source Workflow (XDW)
Manage Data (upload, maintain, delete)	Control Access (XUA, ATNA), records matching, anonymization/pseudonymization
Analyze Data	(Statistical methods, Aberration algorithms (DSUB, MPQ), Retrieve Medical Knowledge QRPH-29
Integrate Data	IT Infrastructure Profiles (PIX, PDQ, XDS, XDR, On-Demand Documents, XDW)
Report Data	PDF, Maps, Send Distribution QRPH-30

NACCHO-PHDSC Business Process Analysis for Public Health: Project Findings

**Public Health
Business Areas**

NACCHO-PHDSC Business Process Analysis for Public Health: Project Findings

Public Health Business Areas	Public Health Business Processes Individual/Population
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NACCHO-PHDSC Business Process Analysis for Public Health: Project Findings

Public Health Business Areas	Public Health Business Processes Individual/Population	Information Systems Functions
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NACCHO-PHDSC Business Process Analysis for Public Health: Project Findings

Public Health Business Areas	Public Health Business Processes Individual/Population	Information Systems Functions	Data Content
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Public Health Business Areas	Public Health Business Processes Individual/Population	Information Systems Functions	Data Content
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Population

Resources

Environment

Protection

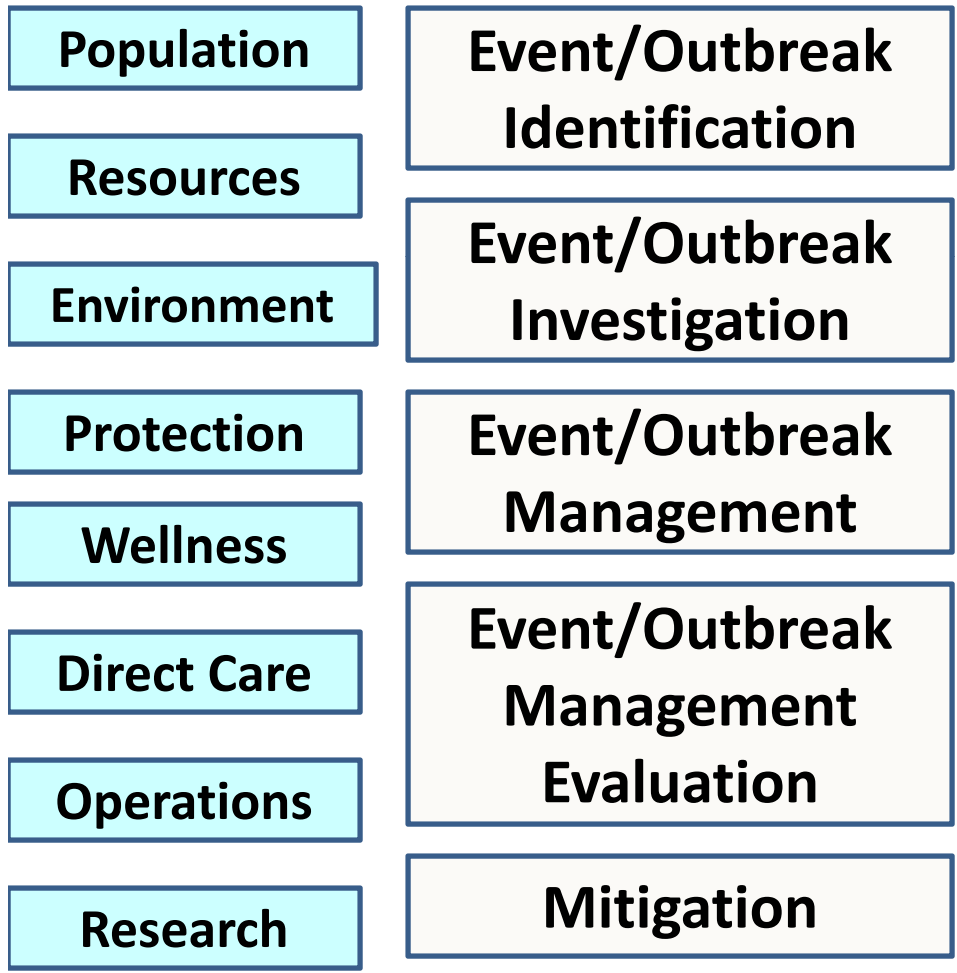
Wellness

Direct Care

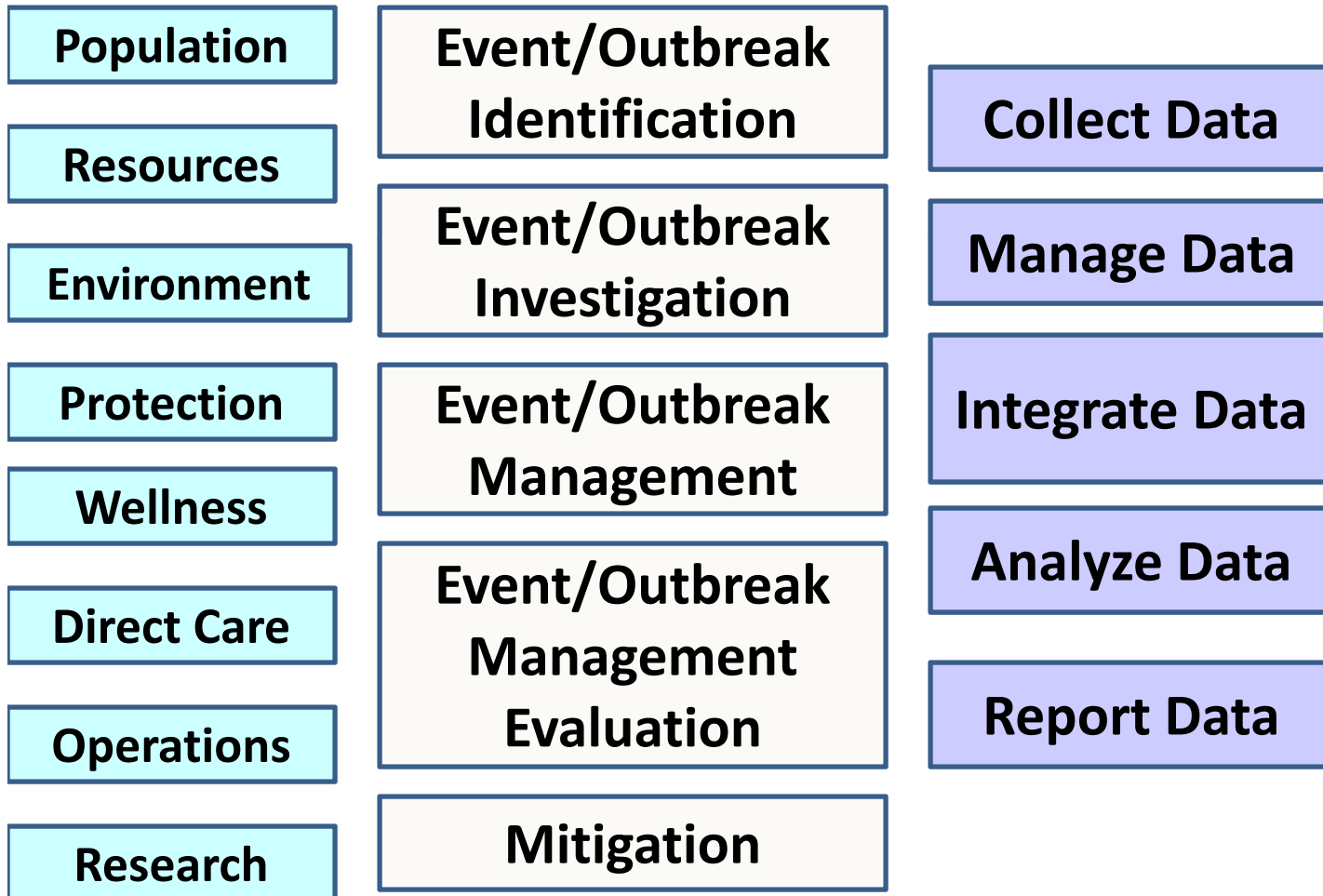
Operations

Research

Public Health Business Areas	Public Health Business Processes Individual/Population	Information Systems Functions	Data Content
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Public Health Business Areas	Public Health Business Processes Individual/Population	Information Systems Functions	Data Content
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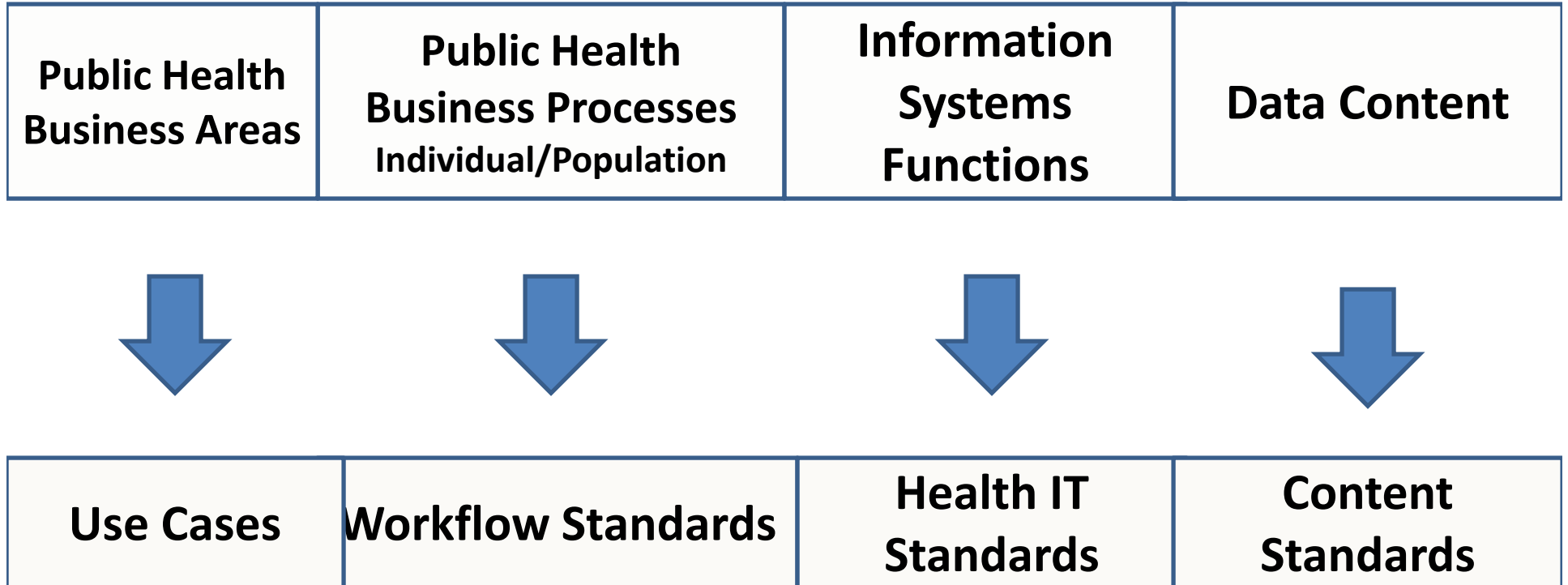
Public Health Business Areas	Public Health Business Processes Individual/Population	Information Systems Functions	Data Content
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Population	Event/Outbreak Identification	Collect Data	Guidelines
Resources	Event/Outbreak Investigation	Manage Data	Event/Case/Outbreak Reports
Environment	Event/Outbreak Management	Integrate Data	Lab Reports
Protection	Event/Outbreak Management Evaluation	Analyze Data	Care Plans
Wellness	Mitigation	Report Data	Alert & Notification
Direct Care			Quality Reports
Operations			Educational Materials
Research			

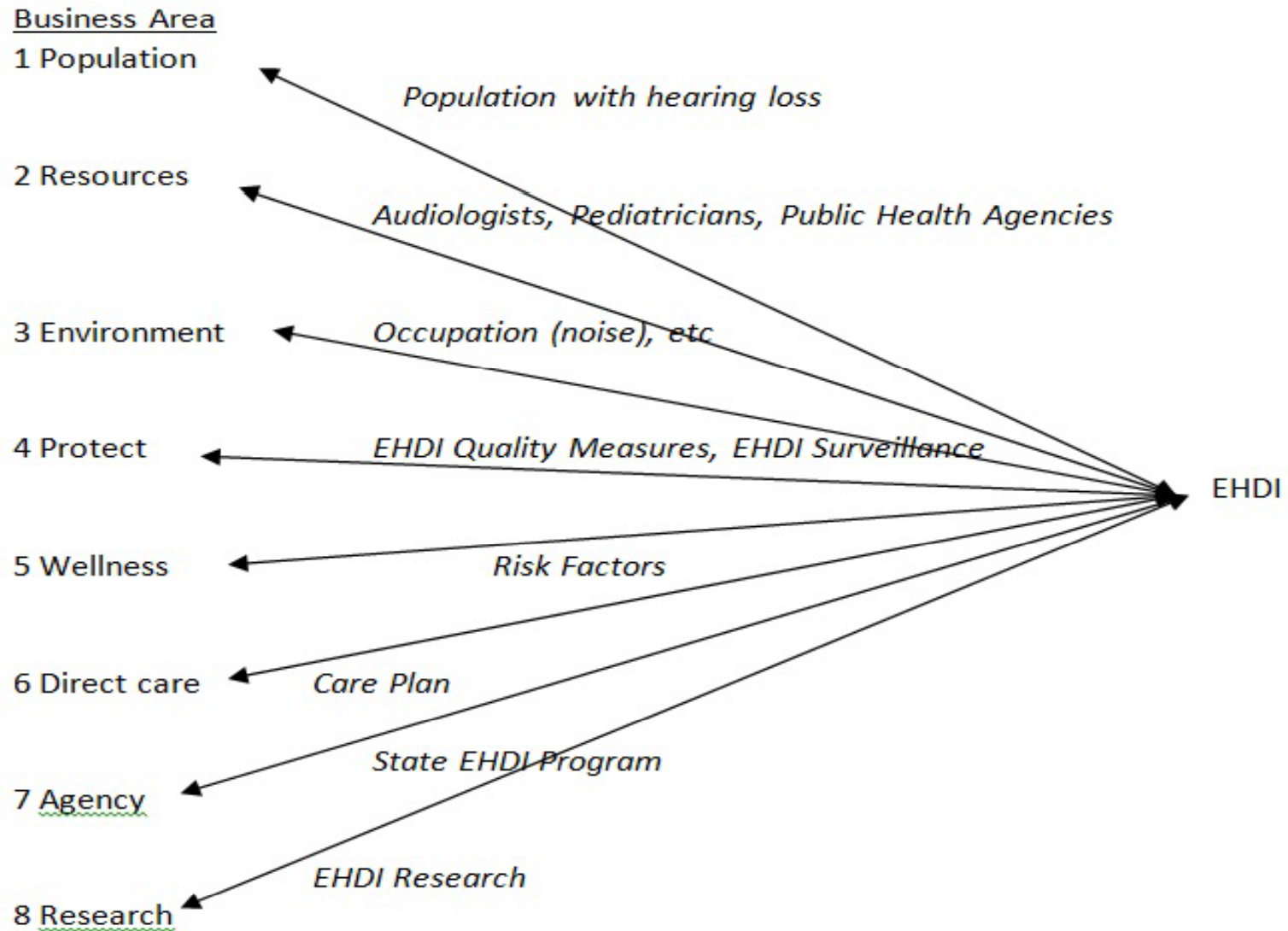
Public Health Program Examples:

Early Hearing Detection & Intervention (EHDI)
and
Public Health Laboratory (PH-Lab)

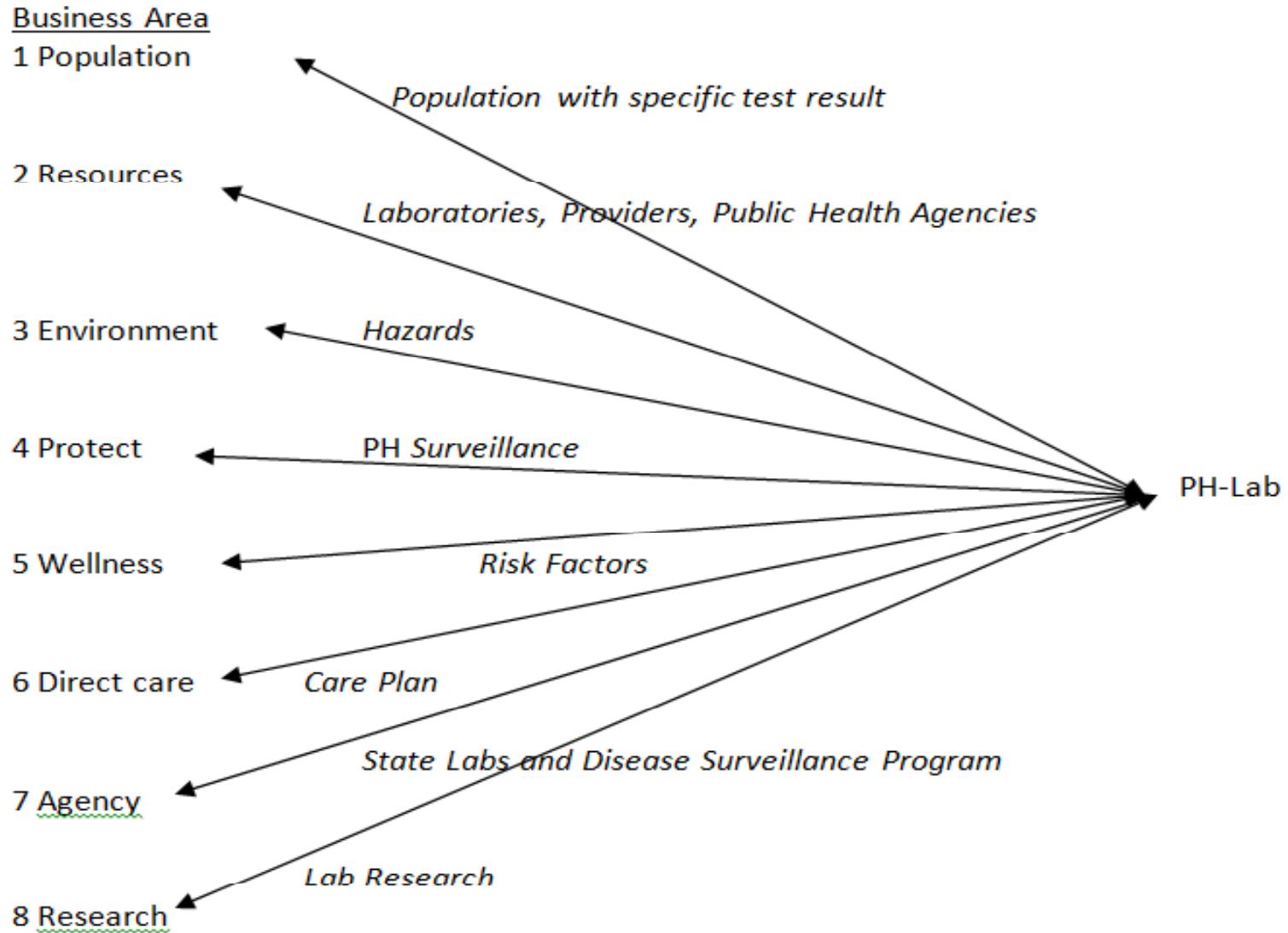
Guiding the HIT Standardization for Public Health



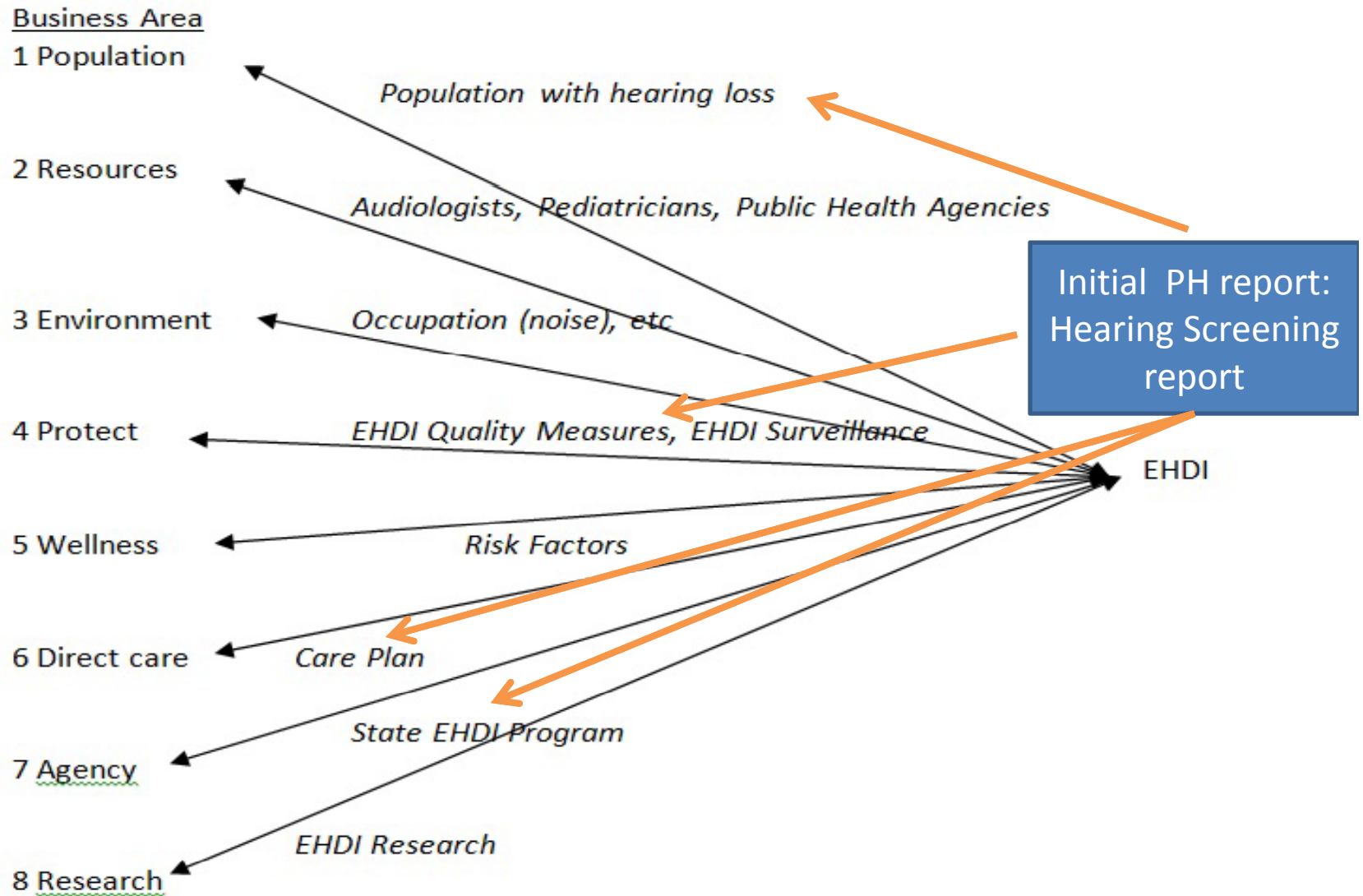
Business Areas: Early Hearing Detection & Intervention



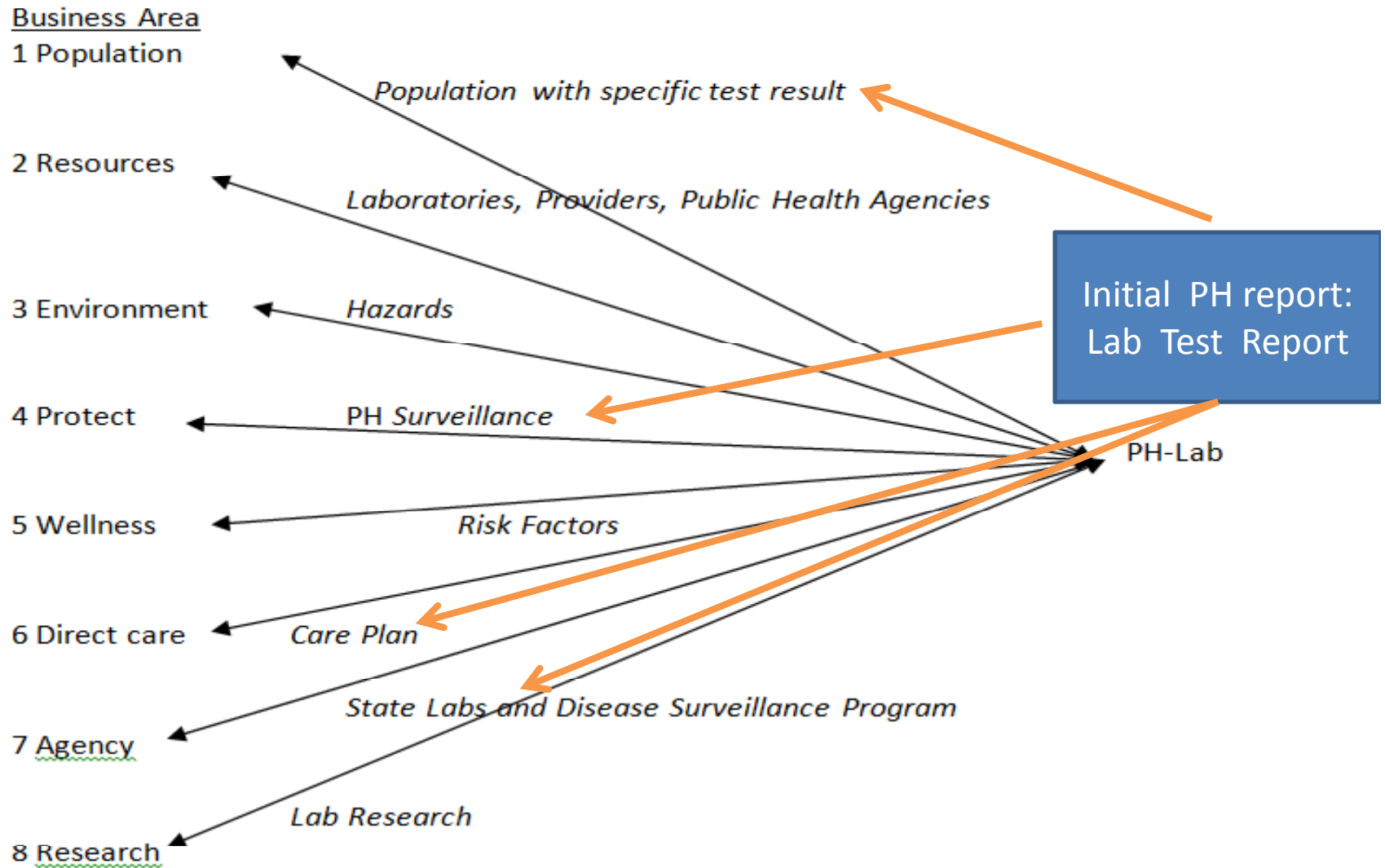
Business Areas: Public Health Laboratory



Business Areas: Early Hearing Detection & Intervention



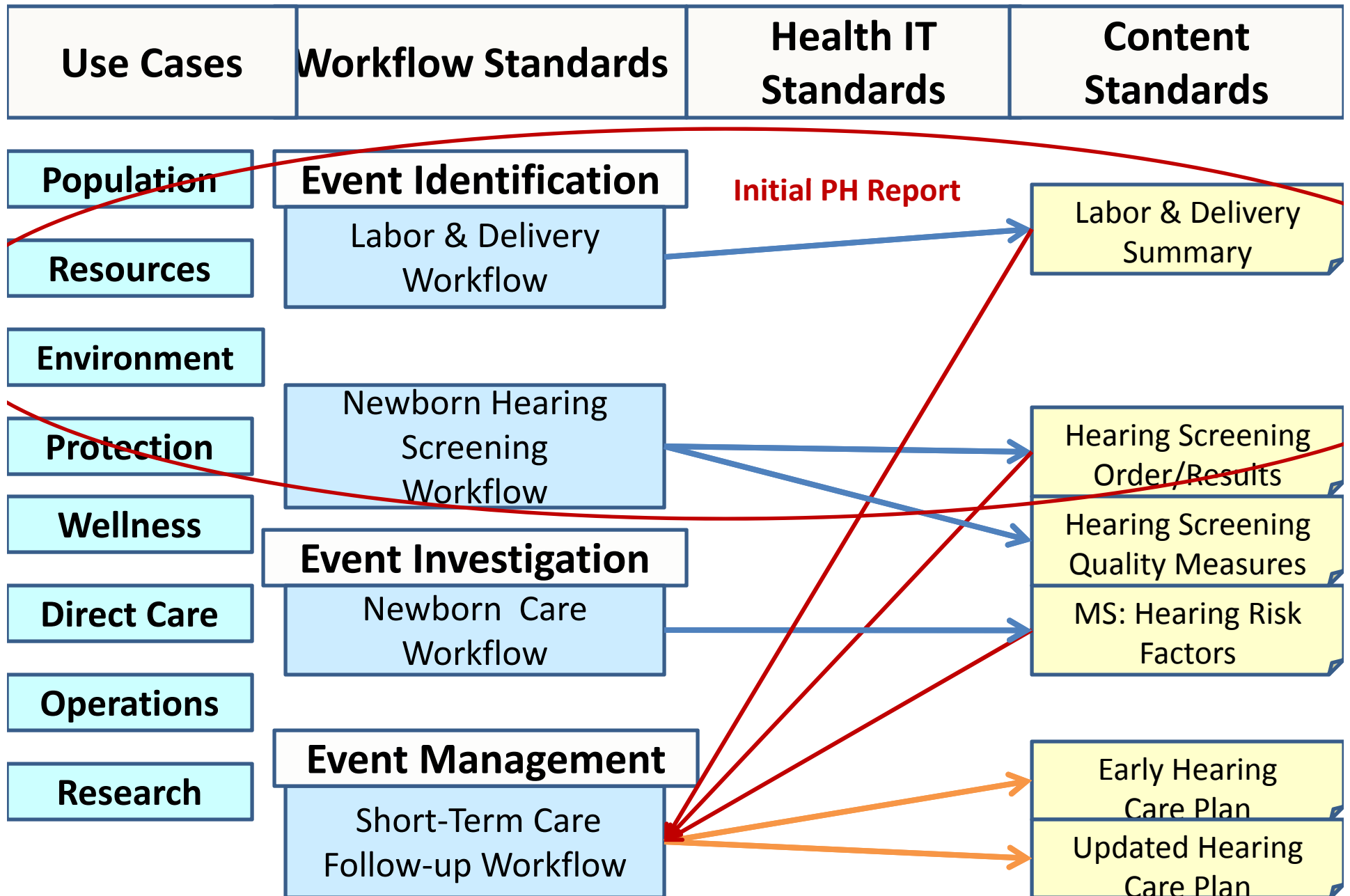
Business Areas: Public Health Laboratory



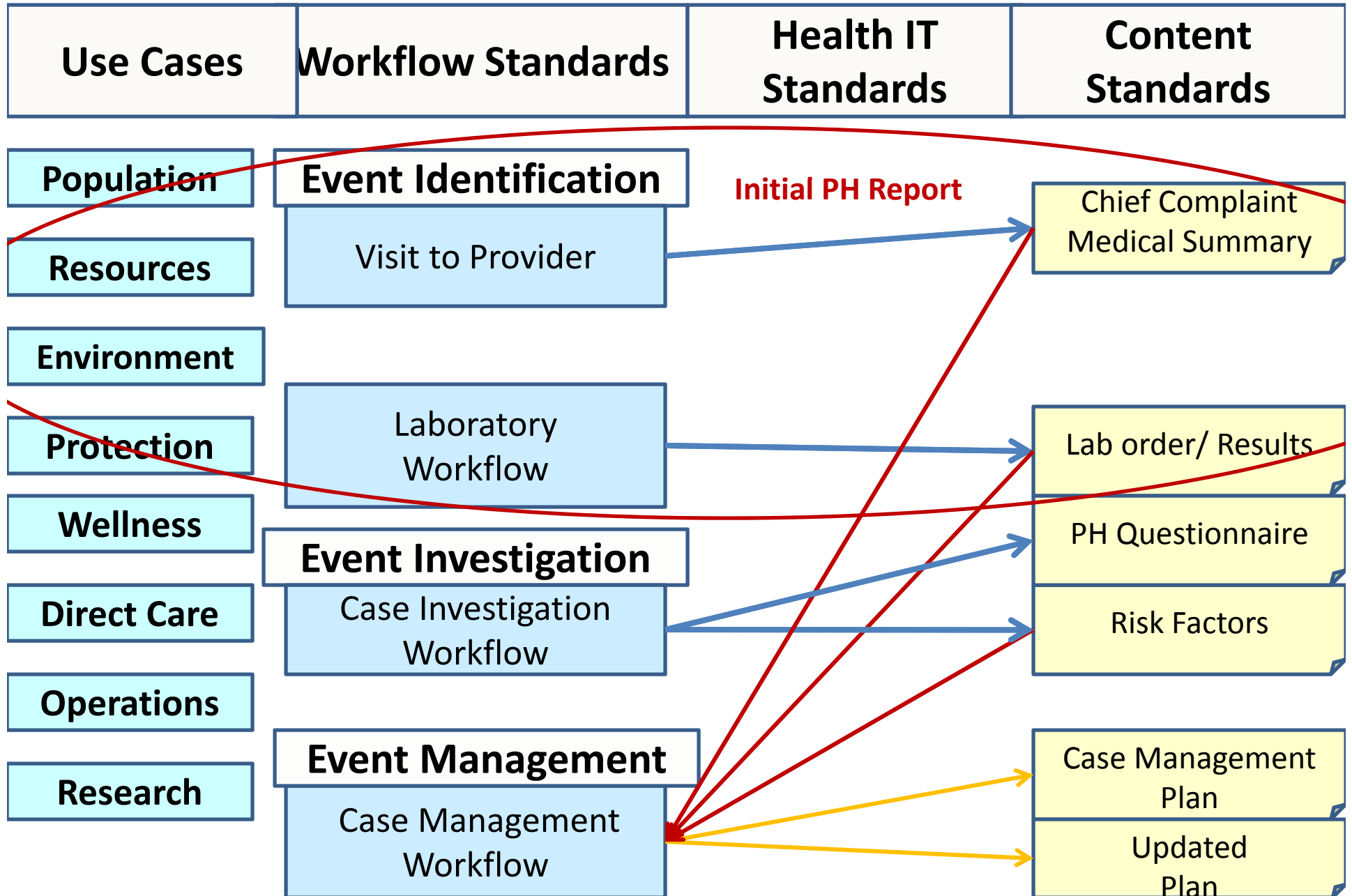
Public Health Business Areas	Public Health Business Processes Individual/Population	Information Systems Functions	Data Content
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Protection	Event/Outbreak Management Evaluation	Analyze Data	Care Plans
Wellness	Mitigation	Report Data	Alert & Notification
Direct Care			Quality Reports
Operations			Educational Materials
Research			

Early Hearing Detection and Intervention (EHDI) Program



Communicable Diseases Programs (Lab Data)



Business Processes, Data Content, Standards: Early Hearing Detection & Intervention & PH Labs

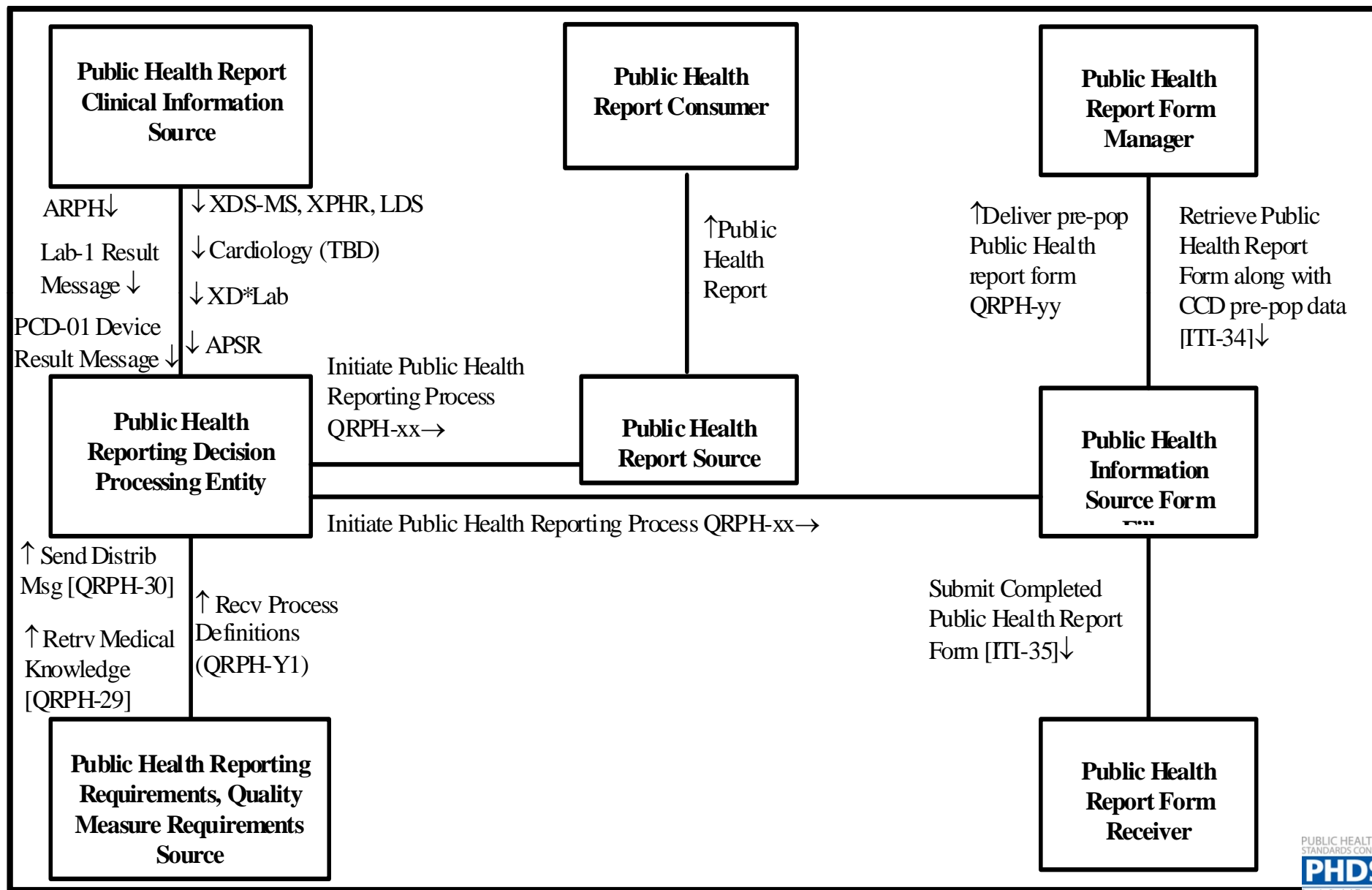
Business Processes / Activities	Information Exchange Content by Domain			Examples of IHE Interoperability Standards
	EHDI	PH-Lab		
		Preparedness (Anthrax)	Surveillance (Influenza)	
CASE IDENTIFICATION				
Trigger: Due for screening / Present with symptoms	Input: Notification of birth Output: Standing order	Input: Medical Summary Output: Test Order	Input: Medical Summary Output: Test Order	XDS-MS/XPHR/C32 XDS/XDR/Lab-Technical Framework (TF) PIX/PDQ/QRPH29 – Retrieve medical knowledge/ PCC Care Management TF
Trigger: Order test/Standing order for the test	Input: Consent (or by statute) Output: Test order	Input: Consent (or by statute) Output: Test order	Input: Consent (or by statute) Output: Test order	BPPC LAB TF
Trigger: Conduct test	Input: Test order Output: Test results	Input: Test order Output: Test results	Input: Test order Output: Test results	PCD-01/LAB TF/ RFD/XDR/DSUB/NAV

Actors and Information Systems: Early Hearing Detection & Intervention (EHDI) & PH Labs

Information Systems (Technical Actors)	Business Actors by Domain	
	EHDI	PH-Lab
Hospital EHR-S	Birth Facility	ER, Inpatient
Ambulatory EHR-S	Pediatrician	Outpatient
Medical Device	Hearing Screening Device	N/A
LIMS	N/A	Public Health Laboratory, Clinical Laboratory, Reference Laboratory
Public Health Information Systems (IS)	EHDI IS	Disease-Specific IS

N/A – Not applicable

Interoperability Standards Schema: Early Hearing Detection & Intervention & PH Labs



S&I PH Reporting Initiative

PH Reporting Health IT Standardization Framework

Request for Comments by October 21, 2011

Definition Categories

- Public Health Business Definitions
- Public Health Reporting Definitions
- Informatics Definitions
- Other

Public Health Business Definitions

- Business Areas
 - Population
 - Resources
 - Environment
 - Protection
 - Wellness
 - Direct Care
 - Agency Operation
 - Research
- Domains (Public Health Programs)
- Business Process
 - Event identification
 - Event investigation
 - Event management
 - Evaluation of the Event Management
 - Event Mitigation

Public Health Reporting Definitions

- Public health reporting (process)
- Public health report
 - Initial public health report (provide examples)
 - Other types of public health reports (provide examples)
- Public health event (e.g., case)
- Public health reporting participants
 - Senders
 - Receivers
- Public health reporting trigger (provide examples)
- Other?

Informatics Definitions

- Information System Functions
 - Collect Data
 - Manage Data
 - Analyze data
 - Integrate data
 - Report Data
- Actors (humans vs. machines/systems)
- Use Case (User story description (structured or text))
- Other?

Other Definitions

- Electronic Medical Record (EMR)
- Electronic Health Record (EHR)
- Personal Health Record (PHR)
- Health Information Exchange (HIE)
- Health Information Organization (HIO)
- Regional Health Information Organization (RHIO)
- Other?

S&I PH Reporting Initiative: Tasks

PH Reporting Definitions

Request for Comments by October 21, 2011

PH Reporting Health IT Standardization Framework

Proposal for Use Cases: One Use Case with X contents

Use Case: EHR-based Initial Report with the content from the following domains:

- Child Health (hearing, VR, birth defects, VR, immunization?, other)
- Communicable Diseases (lab report, case report, other)
- Chronic Diseases (deaf, cancer, diabetes, other)
- Adverse Event Reporting (FDA)
- Environmental Health (lead in blood and lead in dust)
- Food Poisoning
- Other

S&I PH Reporting Initiative: Tasks

Request for Comments by October 21, 2011

1. PH Reporting Health IT Standardization Framework

2. PH Reporting Definitions

3. Proposal for Use Cases

S&I PH Reporting Initiative: Proposed Timeline

Request for Participants Comments by October 21

1. PH Reporting Health IT Standardization Framework
2. PH Reporting Definitions
3. Proposal for Use Cases & User Stories

Building Consensus by October 31

1. PH Reporting Health IT Standardization Framework
2. PH Reporting Definitions
3. Proposal for Use Cases and User Stories

Public Comments November 1-30

1. PH Reporting Health IT Standardization Framework
2. PH Reporting Definitions
3. Use Cases and User Stories

Public Comments Resolution and Final Document - December 30

1. PH Reporting Health IT Standardization Framework
2. PH Reporting Definitions
3. Use Cases and User Stories

S&I PH Reporting Initiative: Tasks

Leads as the Points of Contacts for these tasks:

- 1. PH Reporting Health IT Standardization Framework,**
Anna Orlova
- 2. PH Reporting Definitions,** *Riki Merrick & Nikolay Lipskiy*
- 3. Proposal for Use Cases,** *Anna Orlova & Lise Stevens*
- 4. Public Review,** *Bill Brand*

Public Health Reporting: Phase 1 Key Activities and Deliverables

We are Here



Participant Review – 10/21



Community Review – 11/30



Standardization Framework Doc.



Use Case Proposals 10/7



Review User Stories – 11/15



Community User Story – 12/15



Participant Review – 10/27



Community Review – 11/30



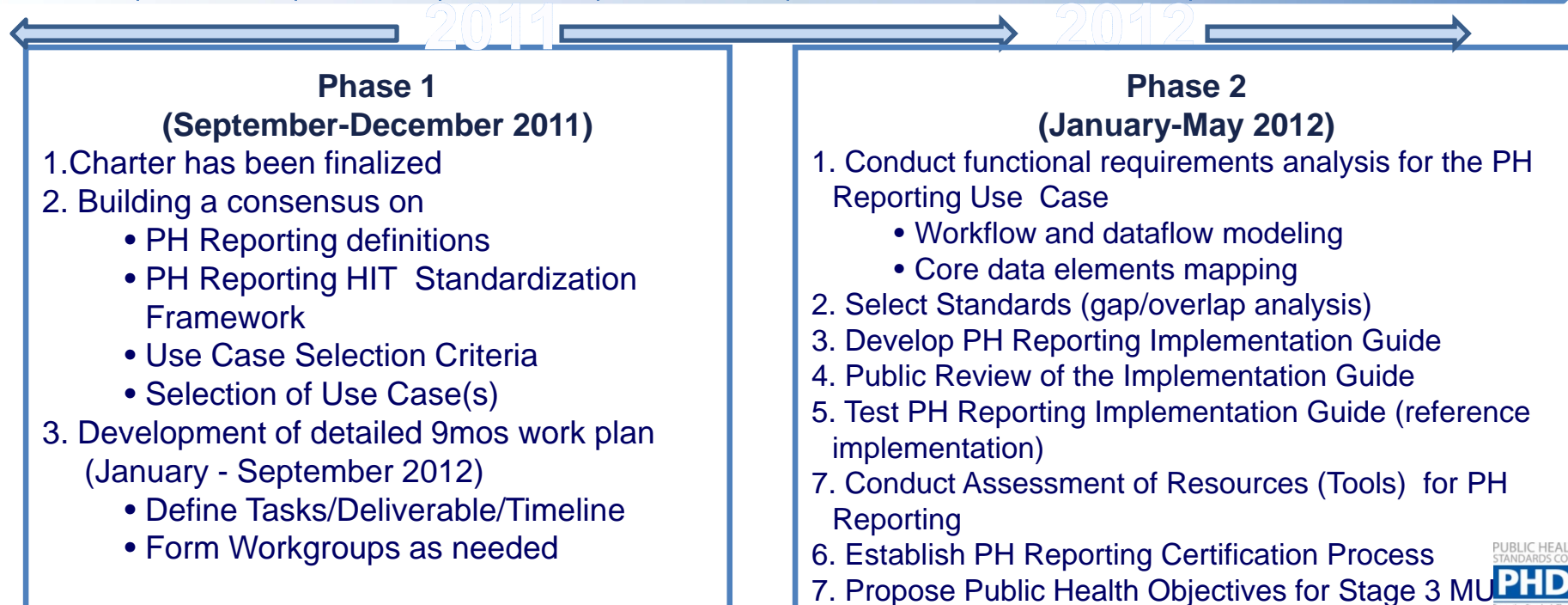
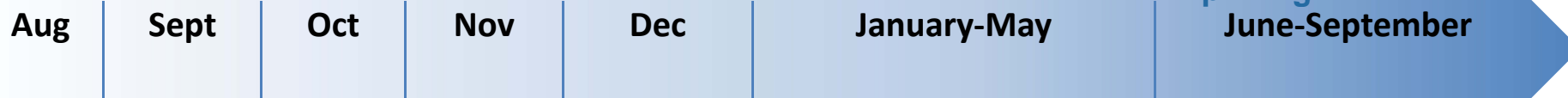
Harmonized Reporting Definitions – 12/30



ONC S&I Public Health Reporting Initiative

Milestones/Deliverables/Timeline

Initiation	Final version of the Charter ★	1. PH Reporting Definitions 2. PH Reporting Standardization Framework 3. PH Reporting Use Case with Use Stories	1. Func Reqs Analysis on the PH Reporting Use 2. Standards Selection 3. Guide Development 4. Guide's Public Review 5. Final Guide	5. Guide Testing 6. Resources (Tools) for PH Reporting 7. PH Reporting Certification 8. MU Stage 3 Proposed Objectives for PH Reporting
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S&I PH Reporting Initiative: Tasks

Questions?