

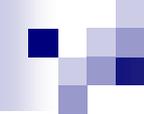
Public Health Data Standards Consortium

<http://www.phdsc.org>

PUBLIC HEALTH DATA
STANDARDS CONSORTIUM

PHDSC

Promoting Standards Through Partnerships



Standards for Public Health Data Exchange: Newborn Screening

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Why does the National HIT agenda include Newborn Screening?

- A first encounter between providers and public health
- As an encounter, communication becomes essential
- Communication is about interoperability between/among systems
- Interoperability has been elusive



The Vision for Clinical – Public Health Information Systems: Interoperability for Newborn Screening

Vision: Interoperability for Newborn Screening

Building interoperable information systems for public health will require working with:

- Public Health Community
- Clinicians
- Vendors

Vision: Interoperability for Newborn Screening

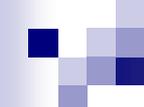
Working with Public Health Community to

- Understand interactions between public health data systems within a health department and across health departments
- Understand commonalities of data across public health data systems
- Define common public health needs in health information exchanges

Vision: Interoperability for Newborn Screening

Working with Clinicians to

- Define public health needs in information exchanges
- Understand interactions between clinical care and public health data systems
- Understand commonalities of data and data system architectures across clinical and public health data systems



Vision for Clinical – Public Health Information Systems Interoperability for Newborn Screening

Working with Vendors



**Clinicians and Software
Developers
Working Together to Deliver
Interoperable Health Information
Systems**

WWW.IHE.NET

IHE is a joint initiative

- Founded 1997 by Radiology (RSNA) and IT (HIMSS)
- Includes – among others
 - American College of Cardiology (ACC)
 - GMSIH, HPRIM, JAHIS (laboratory)
 - American Society of Ophthalmology
 - American College of Physicians (ACP)
 - American College of Clinical Engineering (ACCE)
 - Public Health Data Standards Consortium (PHDSC)
- International effort: IHE- Europe and IHE-Asia

What is IHE – Health IT Vendors

Leadership



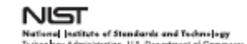
Implementer



Supporter



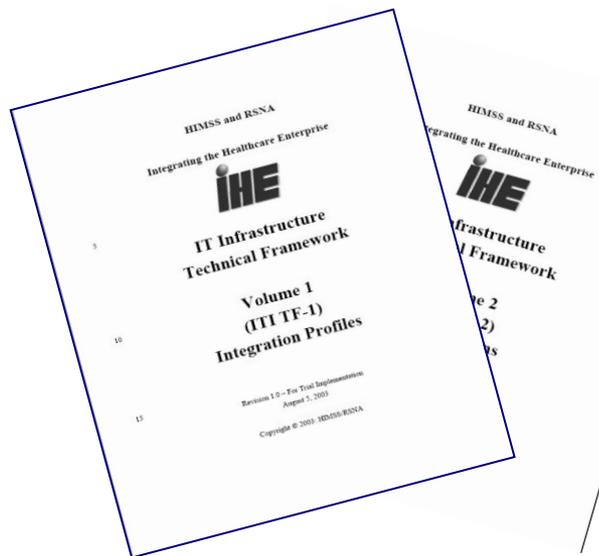
Organizational Participants



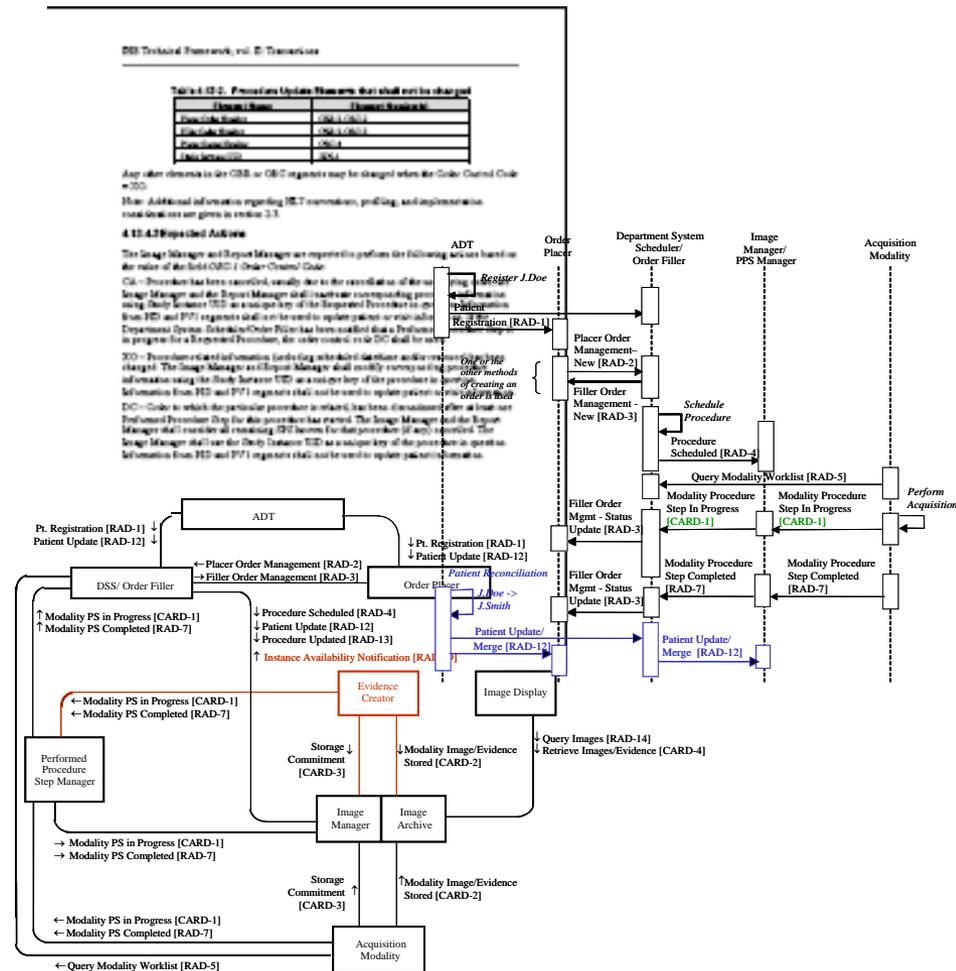
Participants as of 11/20/06

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IHE Standards - Technical Documents



- White Papers
- Technical Frameworks
- Integration Profiles
- Content Profiles



Public Health Activities at IHE

2007-2008

- **Building a Roadmap for Health Information Systems Interoperability for Public Health – White Paper**
- **Cancer Pathology - Integration Profile**
- **Immunization - Demographics Profile**

2008-2009

- **Newborn Screening - White Paper**
- **Chronic Care (Diabetes Care) - White Paper**
- **Service-Oriented Architecture for Public Health - White Paper**



IHE Quality, Research & Public Health Technical Committee White Paper

2009-2010

Newborn Screening (NBS and NHS/EHDI)

Supported by HRSA

IHE Newborn Screening White Paper

- Public Health Data Standards Consortium (PHDSC) (www.phdsc.org)
- IHE
 - Quality Research in Public Health Committee
 - Laboratory Committee: France, Germany, Austria
- With input from State Health Departments
 - Alaska, Iowa, Maryland, Texas

Our Purpose at IHE

- To maintain existing CDC and HRSA goals
 - For example CDC suggests that an individual hearing health record be maintained
 - That is individual
 - Can report the hearing status of every occurrent birth.
- To assure that EHDI programs QA /QI efforts could go forward as they exist now or perhaps better – but no worse.
- To maintain states' jurisdictional autonomy
- To maintain flexibility

Purpose of This Presentation: EHDI

- Introduce “Functional Requirements” for Newborn *Hearing* Screening Systems
- Define “Actors”
- Review the simplified EHDI Use Case (scope) and Use Case Diagrams
- Review next steps

Functional Requirements

In this project, these included:

- Documentation of work processes at Hospital, by Public Health and by PCP/Medical Home
- Specification of Information
- Specification of how the Hospital EHR needed to function for EHDI
- Specification of EDI needed by Hospital EHR to communicate with Stakeholder systems.

Actors: People and Systems

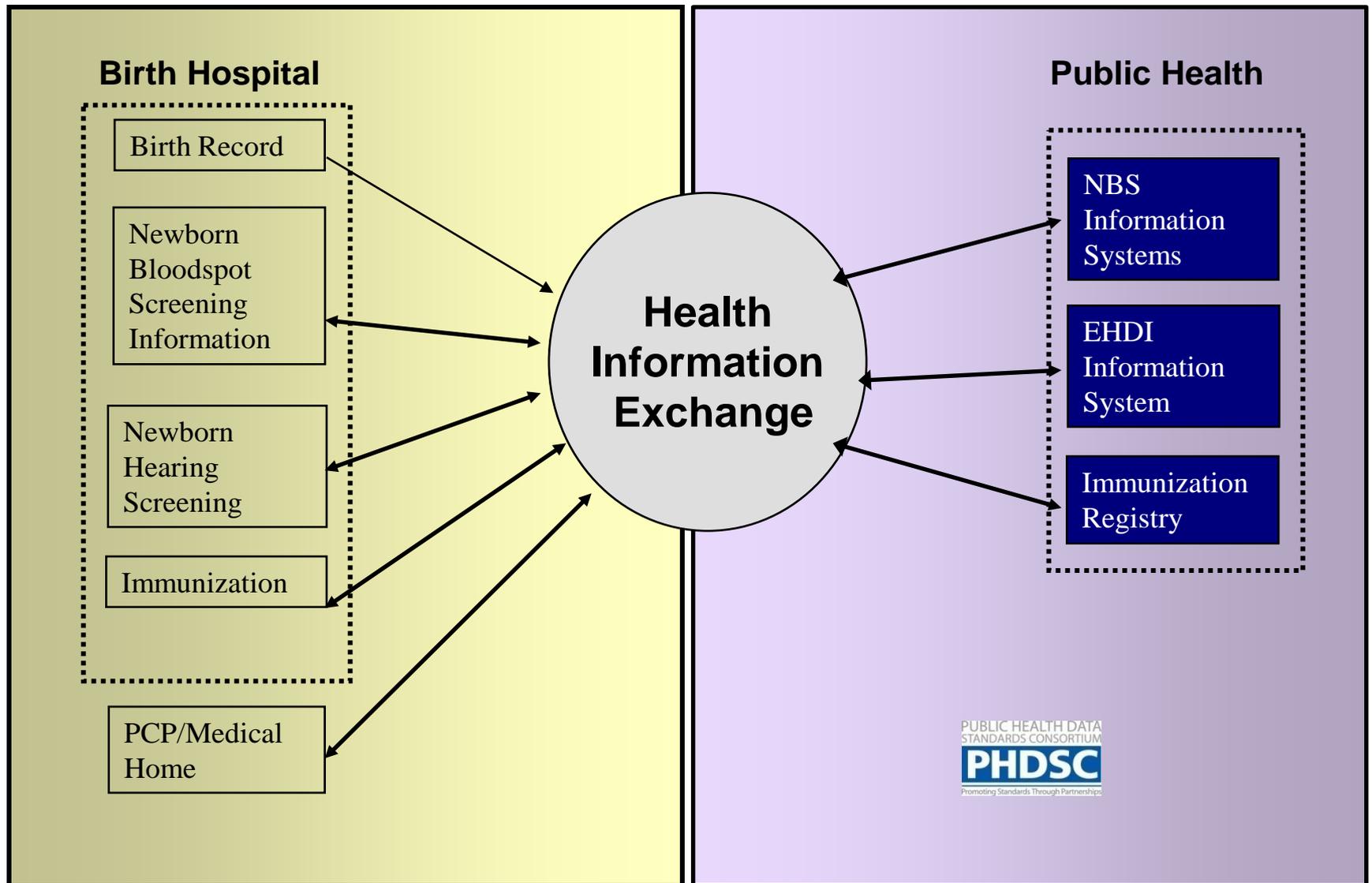
- Healthcare Providers
 - Hospital
 - Attending Physician
 - Hearing Screener
 - Screening Supervisor (Birthing Facility's or Contract Staff)
 - Primary Care Provider (PCP)/Medical Home
- Public Health
 - NHS / EHDI Program
 - Program Staff
- Consumer
 - Newborn;
 - Parent/Guardian
- Hospital Electronic Health Record System (**EHR-S**)
- Hearing Screening Device (**HS Device**)
- EHDI Information System (**NHS/EHDI-IS**)
- PCP's **EHR-S**
- Personal Health Record System (**PHR-S**) (OUT OF SCOPE)
- Health Information Exchange (**HIE**)



Health Information Exchange

- Moves clinical information electronically among different systems while maintaining meaning of the information exchanged.
- Facilitates access and retrieval of clinical data for safer, more timely, efficient, effective, equitable, patient-centered care.
- Formal organizations are now emerging to provide both form and function for health information exchange efforts

Interoperability



USE CASE DESCRIPTION

Use Case is a structured description of user activities and data generated/exchanged during these activities in the context of a particular clinical scenario

NEWBORN HEARING SCREENING

Birth Screening

An Automatic Back Scratcher

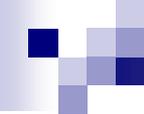


USE CASE – Birthing Facility

- **1.1 EHR** reminds **Hearing Screener** that Newborn is due for hearing screening
- **1.2 Hearing Screener** explains screening to **Parent**. Obtains Consent if needed
- **1.4 Hearing Screener** enters required information into **EHR** and/or **HS Device**
- **1.6 Hearing Screener** performs test using approved **HS Device**

USE CASE – Birthing Facility

- **2.1 HS Device** generates hearing screening results
- **2.2 HS Device** sends hearing results to **EHR**
- **2.3 HS Device** sends results to **EHDI-IS**
- **1.13 Hearing Screener** communicates results and provides information/education about follow-up care to **parent**



NHS/EHDI Program

- **3.1. EHDI-IS** receives notification of Newborn's Birth
- **3.2. And** establishes Newborn's record.
- **3.3. EHDI-IS** receives screening results from **EHR** or directly from **HS Device**
- **3.6 EHDI-IS** matches results to newborn's record and calculates *outcome* for the Newborn including appropriate follow-up activities

NHS/EHDI Program

- **3.9 EHDI-IS** send newborn's screening *outcome* to **HIE**
- **3.10 EHDI-IS** alerts **Program Staff** when follow-up is needed – as required
- **3.11 Staff** runs surveillance reports in periodically as required by jurisdiction
- **3.12 EHDI-IS** sends Surveillance Reports to **HIE**

PCP EHR-S

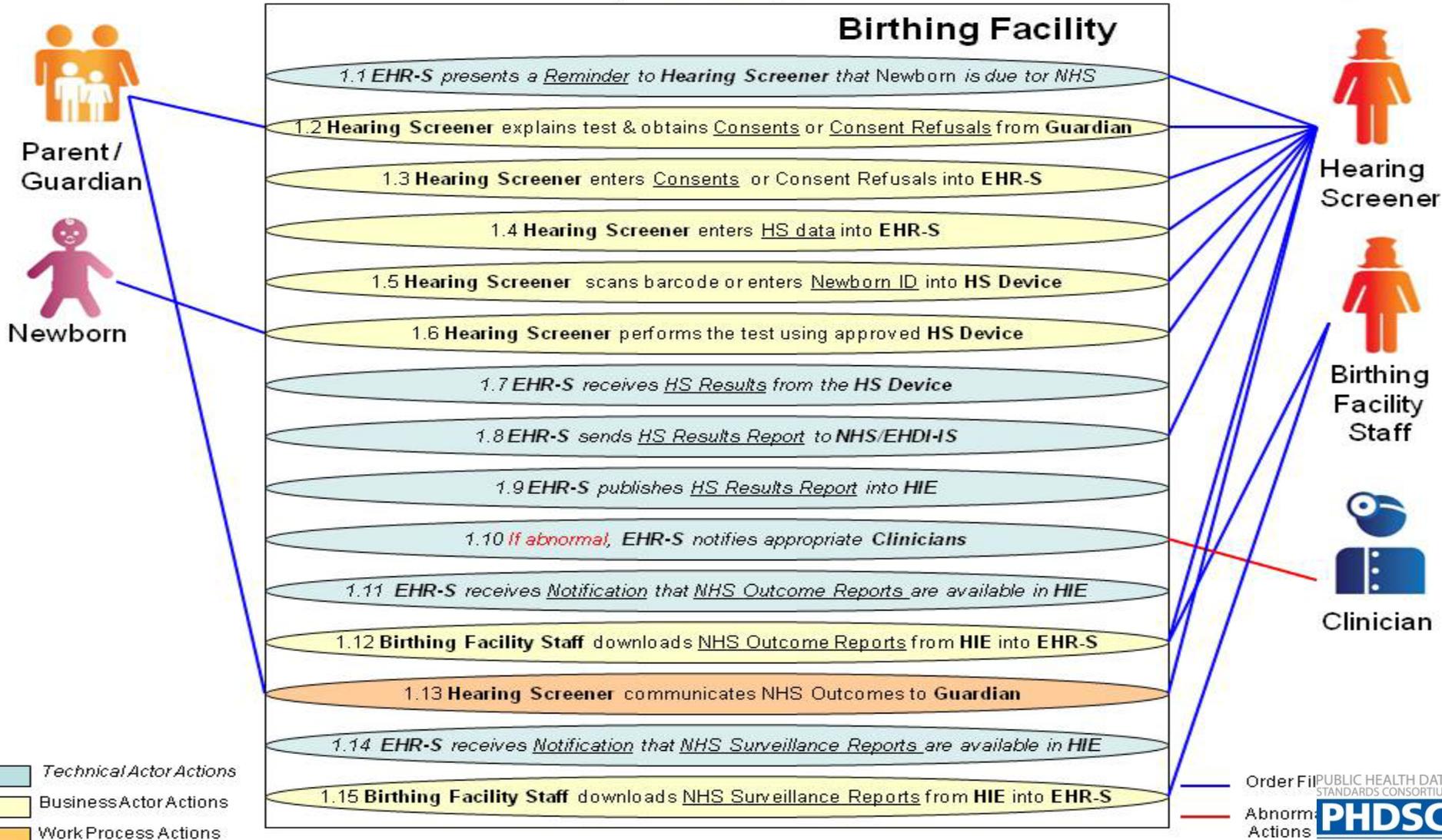
- **4.1 Primary Care Provider** receives Notification that Newborn's records are available
- **4.3.PCP EHR** downloads Newborn's Hearing Outcome
- **4.4.** If abnormal results, **Primary Care Provider** *may be* notified by **NHS Program Staff** for appropriate follow-up

NEWBORN HEARING SCREENING USE CASE DIAGRAMS AND WORKFLOW DIAGRAMS

- A way to depict user activities so vendors can select IT tools to support these activities
- UML: Unified Modeling Language
 - a standard for modeling information exchanges between participating information systems

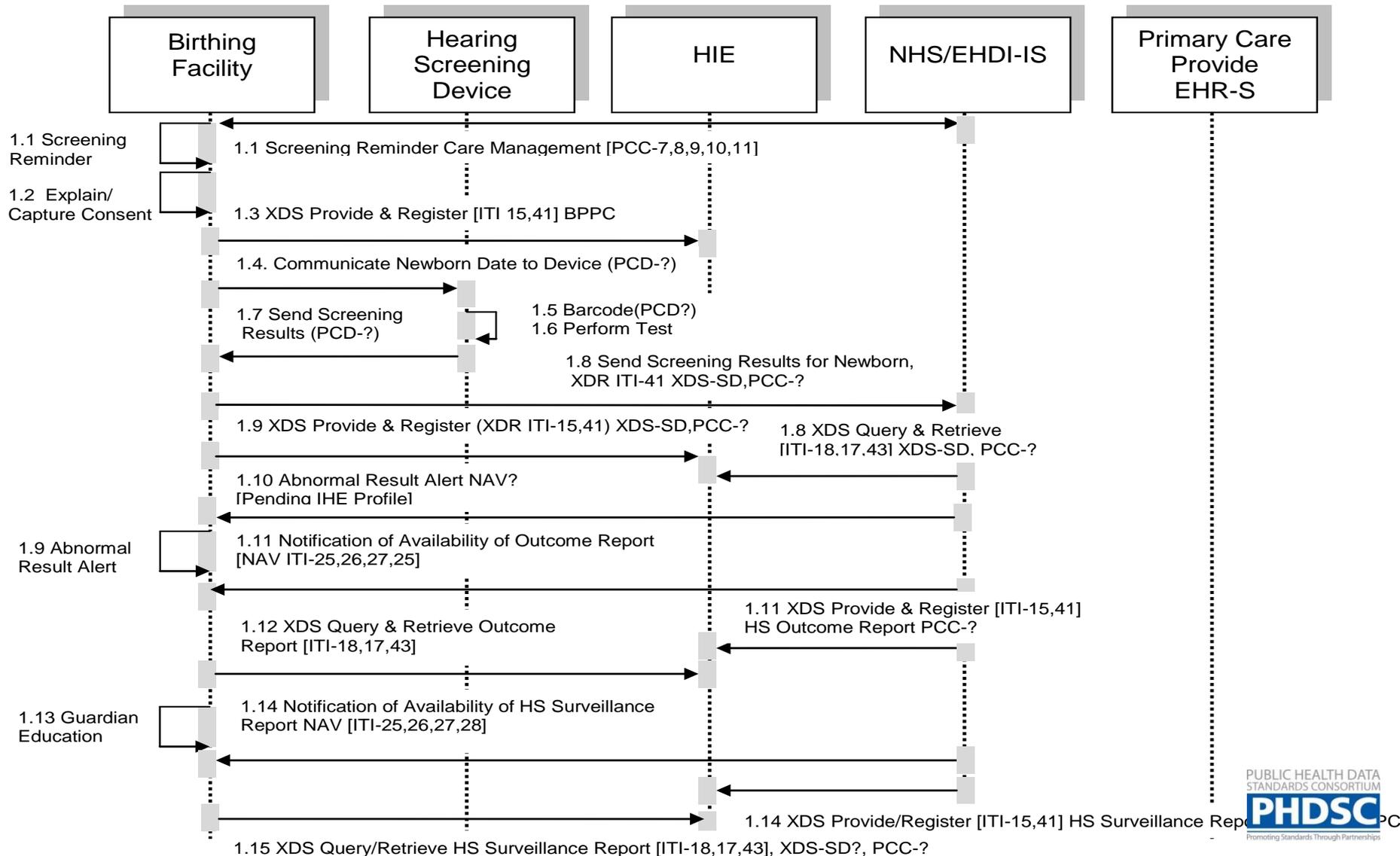
Newborn Screening UML Use Case Diagrams

Use Case 2: Newborn Hearing Screening/Early Hearing Detection & Intervention (NHS/EHDI)



Newborn Screening UML Work Flow Diagrams

EHDI Flow 1. Birthing Facility

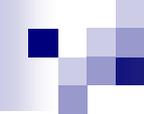






Public Comment Period : June 8-July 7!

**Review and send us you comments on
the White Paper at <URL here>**



IHE Newborn Screening White Paper

Questions?