Immunization Registry Design Group

A Design Group of the Connecticut Health IT Advisory Council

August 4, 2017 | 11:00 am – 12:30 pm

Session 5

Facilitated by CedarBridge Group

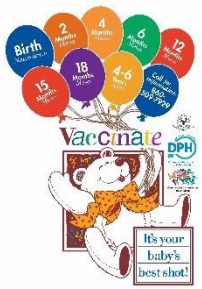
CEDARBRIDGE GROUP

Agenda

Welcoming Remarks **Review Agenda**	Christina Coughlin	11:00 AM
Approve Session 4 Meeting Summary	Design Group Members	11:02 AM
Update from IIS Program Staff • **Consortium** • **HIE Services Requirements**	Nancy Sharova	11:05 AM
Identify High-Value Use Cases	Design Group Members	11:30 AM
Review Draft Recommendations	Design Group Members	11:50 AM
Meeting Wrap-up and Next Steps	Christina Coughlin	12:20 PM

Approve Session 4 Meeting Summary

Update from IIS Program Staff

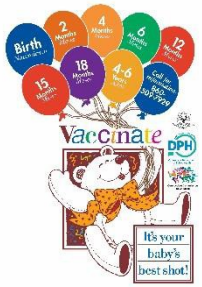


Connecticut Immunization Registry and Tracking System (CIRTS) Wrap Up

Immunization Information System (IIS) Implementation and Alignment Design Group Meeting

August 3, 2017

Presented by:
Nancy Sharova, MPH, CIRTS Supervisor

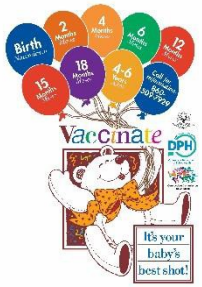


IIS Replacement Status and Funding

- DPH, in consultation with the CDC, had a "gap analysis" conducted to assess CIRTS, the CIRTS vendor, and the program's ability to meet national IIS functional standards.
  - Replacement IIS solution operates with a client-based "consortium" (aka User Group) of states which would provide resource and cost-sharing benefits.

- DAS has approved DPH to move forward on procuring the new IIS using the **Government Services Administration (GSA) schedule**.
  - These federal funds have a spending deadline or funds will be returned to CDC.

- After October 2017, with assistance from DSS, DPH will apply for the IAPD update 90/10 match funds from CMS. DPH is working with an ASTHO consultant on this application.
  - These funds will provide support for years 2 and 3 of the new IIS project.



Select IIS Vendor Consortium/User Group Benefits

State (awardee) can share resources (both knowledge base and financial) with the other awardees using that same IIS vendor (for select vendors.) This involves user group meetings by webinar and in person to collaborate and update awardees on grant opportunities, new functionality and enhancements to the IIS core product. http://www.envisiontechnology.com/products/#webiz http://www.stchome.com/

Customization:

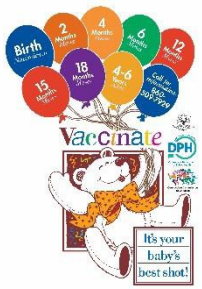
- In addition to normal enhancement cycles, select IIS vendors regularly work with their customers to develop custom enhancements: to existing parts of the applications, as brand-new functionality, and for integration into other IT systems in customer environments.
- When these customizations have general applicability to the customer base, they incorporate them into the core product offerings so all customers benefit — at no additional cost beyond their annual maintenance and support fees.

Source Code:

- Select IIS vendors provide source code for all application components (front-end, server and database) to their customers with each upgrade.
- Through this process, customers are ensured not only of having permanent access to the software they have licensed, in some cases they may choose to enhance the software on their own.

IIS Vendors and Consortiums

Vendor/Platform	Entities
Envision [Consortium]	American Samoa Arkansas Colorado Commonwealth of the Northern Mariana Islands Delaware Federated States of Micronesia Guam Kansas Kentucky Nevada New Mexico Philadelphia Republic of Palau Republic of the Marshall Islands

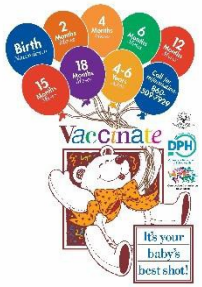


IIS Vendors and Consortiums

Vendor/Platform	Entities
Scientific Technology Corporation (STC) [Consortium]	Alaska Arizona Indiana Louisiana Mississippi New Hampshire Ohio Tennessee Washington West Virginia Wyoming

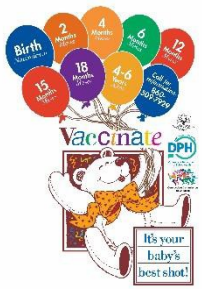
IIS Vendors and Consortiums

Vendor/Platform	Entities
Wisconsin Immunization Registry (WIR) – open source platform customized for each installation [non-Consortium]	California Georgia Hawaii Houston Idaho Iowa Maine Maryland Minnesota Montana (supported by STC) Nebraska New York State North Carolina Oregon Puerto Rico San Antonio Texas US Virgin Islands Virginia Wisconsin



IIS Vendors and Consortiums

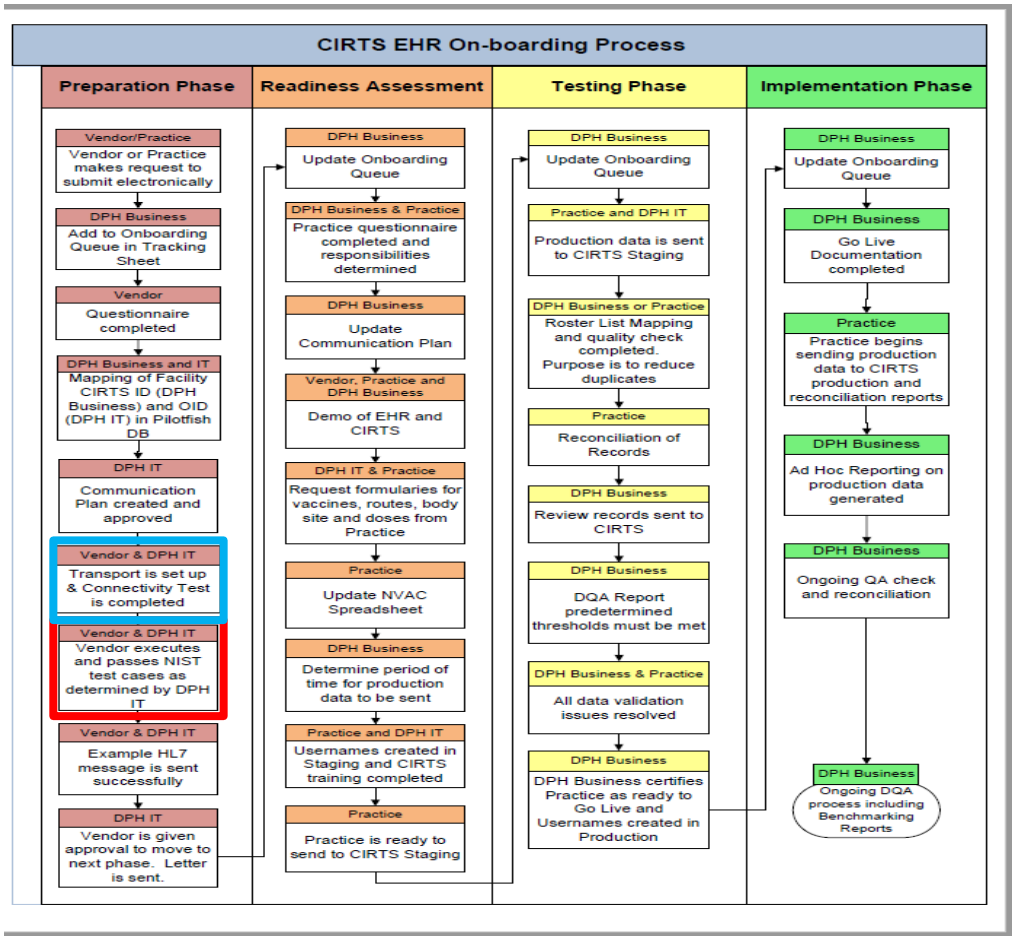
Vendor/Platform	Entities
Other Vendors (one or two on each vendor) [non-Consortium]	Chicago Connecticut Illinois Michigan New York City Pennsylvania South Dakota



IIS Vendors and Consortiums

Vendor/Platform	Entities
Awardee Developed/"Homegrown" [non-Consortium]	Alabama District of Columbia Florida Massachusetts Missouri New Jersey North Dakota Oklahoma Rhode Island South Carolina Utah Vermont

EHR-IIS Interoperability -- Onboarding Process



CIRTS Local Implementation Guide for HL7 2.5.1 Immunization Messaging

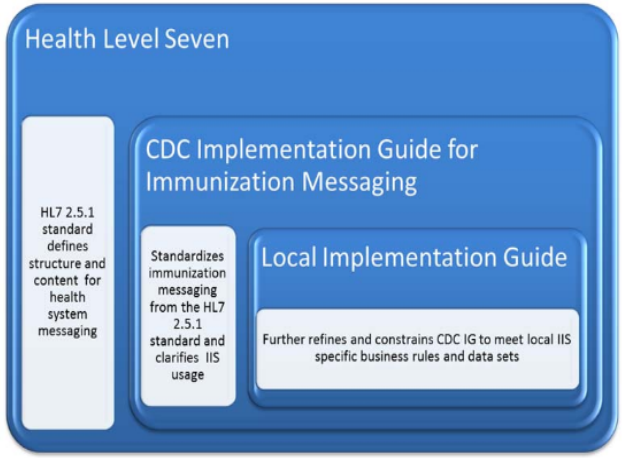
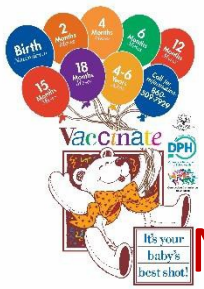


Figure 1: HL7 Controlling Document Hierarchy

EHR-IIS data exchange is controlled by a hierarchy of documents, each refining and constraining the HL7 Standard as shown in Figure 1. The guides define both structure of the HL7 message and the content that the message must contain.

The DPH local version of the current guide (release 1.4) is at DPH HL7 Immunization Guide.



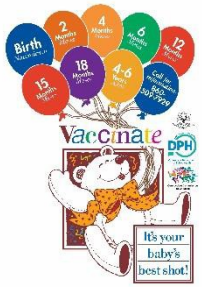
National Institute of Standards and Technology (NIST) Immunization Testing

- For the CIRTS EHR Pilot Project, during the 'Preparation Phase', EHRs must complete/pass NIST Testing scenarios before sending messages to the IIS.

- NIST Testing assesses and validates test messages and validates the ability of Health IT Modules to consume acknowledgement and response messages.

- NIST Immunization Testing supports the Immunization community on: transport, messaging (content), and functional.
  - CDC SOAP Validation
  - HL7 V2.5.1 Immunization Message Implementation Guide Release 1.5
  - EHR and IIS Functional Capabilities (2016)
  - 2015 ONC Health IT Certification

- Click here for the Test Tool Website



Test Case (example)

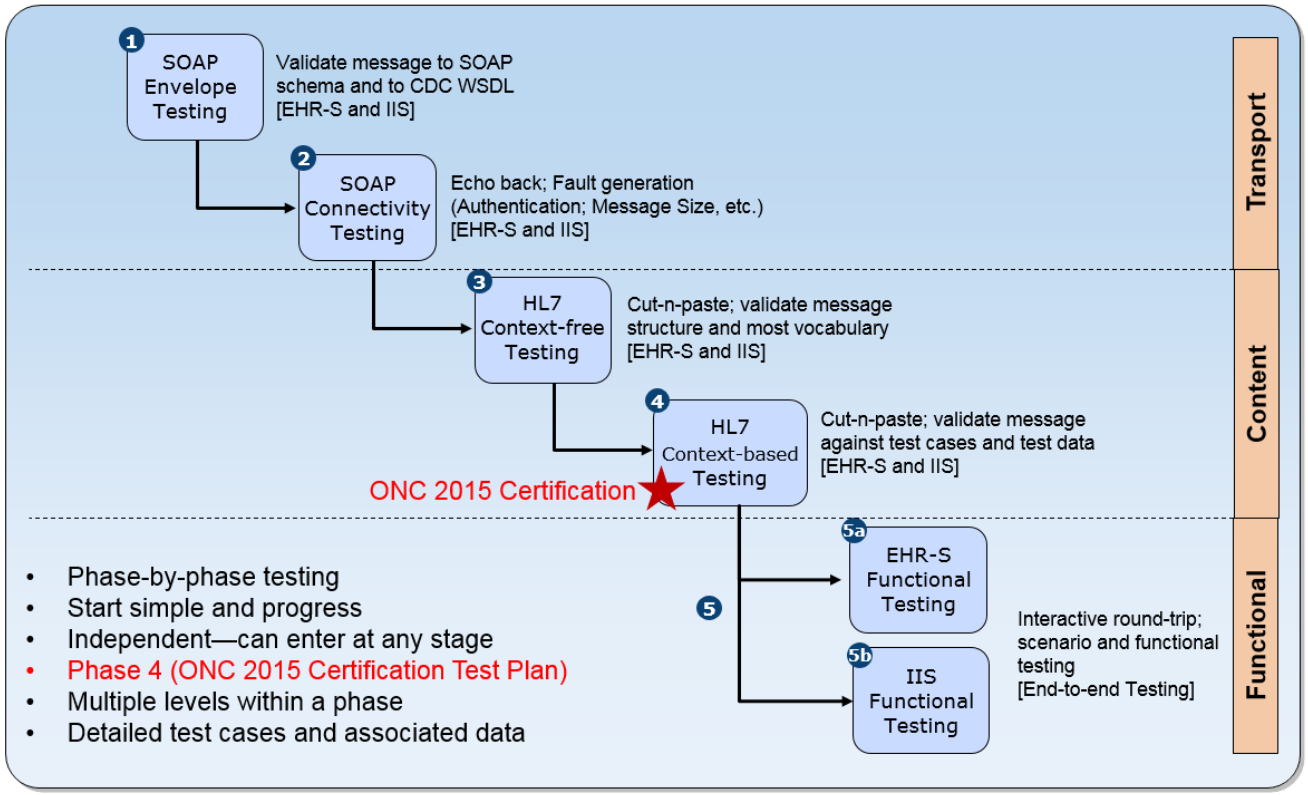
Each Test Case includes a narrative Test Story that describes a real world situation and provides context for each Test Step

A Test Ca

Description
A two month old male infant, Russell Clinton Richardson, is brought to a clinic for a well child visit by his mother Maria Elizabeth Richardson (nee Billington) and his father John William Richardson. A clinic staff member collects basic patient demographic information including name, date of birth and sex. A clinic provider, Wilma Thomas (physician ID 654) reviews the patient's vaccination history and determines that the child previously received Hepatitis B vaccine 1 day after birth and 1 month after birth. The staff member determines that the patient needs DTaP, Hib, IPV, Rotavirus and Pneumococcal vaccinations. Because of the patient's status of Native American, he qualifies for all Vaccine For Children (VFC) supplied vaccines under the status of VFC eligible - American Indian/Alaska Native. The parents are given 5 Vaccine Information Sheets (VIS) to review. After reading them, they agree that the child should receive all the vaccinations recommended. They also agree that the data should be shared once it is incorporated into the local IIS. They indicate that reminders and recalls may be sent by any method. Appropriate doses of DTaP/Hib/IPV (Pentacel), Rotavirus (RotaTeq) and Pneumococcal (Prevnar 13) are selected from the clinic's stock of publically funded vaccines. A clinician, Lily Jackson (ID 7824) prepares and administers the doses to the patient and then enters the data into the EHR and transmits it to the IIS.

Example Test Data document: Test Case: IZ-AD-1_Admin_Child – 1.IZ-AD-1.1_Send_V04_Z22

NIST Workflow
Transport-Content-Functional Phases

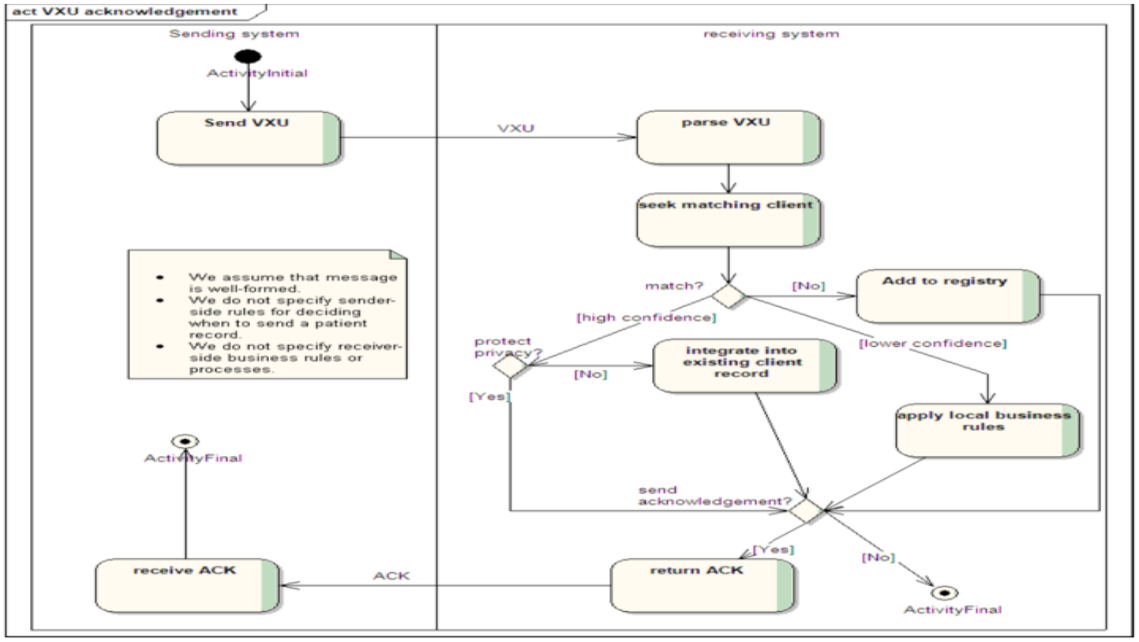


Uni-Directional Release 1.4 Use Case

EHR sending Immunization Record to IIS

CIRTS Local Implementation Guide for HL7 2.5.1 Immunization Messaging

Figure 2. VXU message processing.



Bi-Directional Release 1.5 Use Case

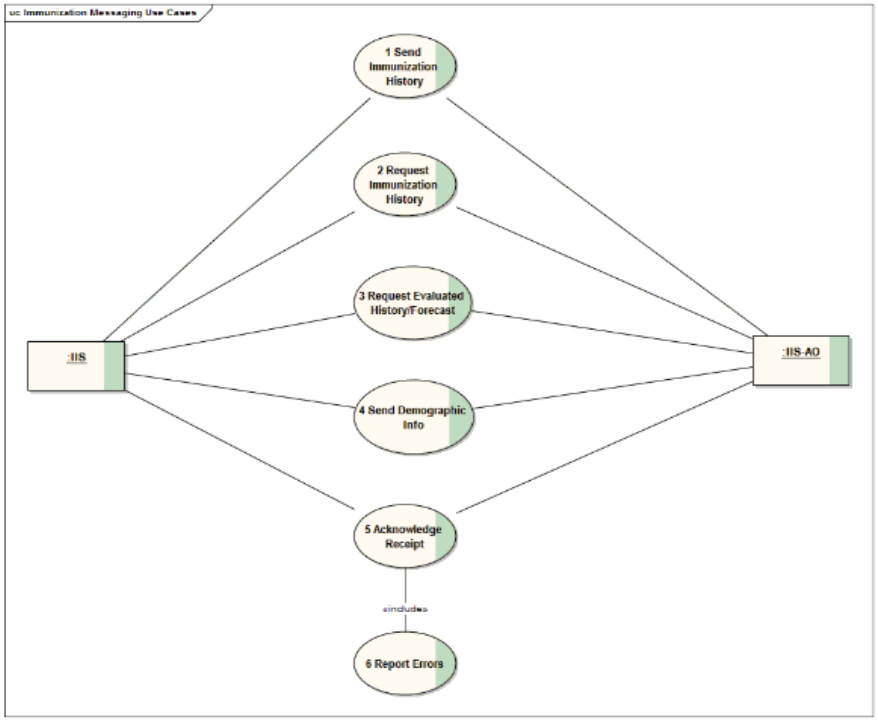
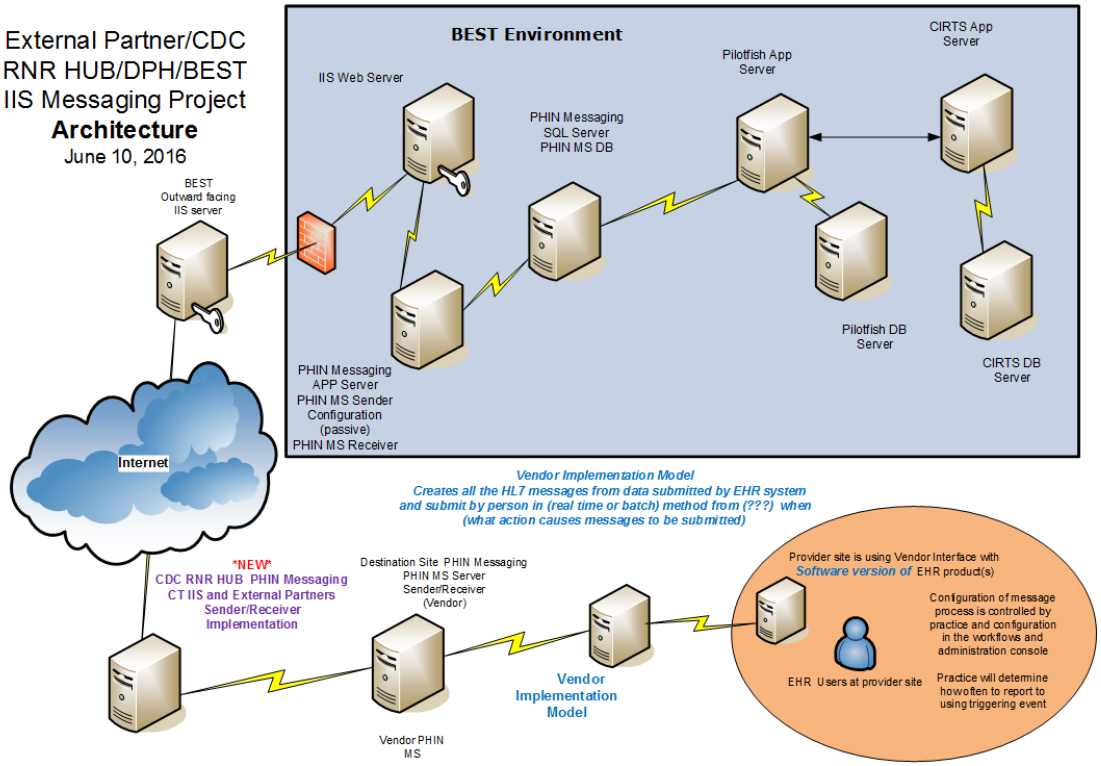


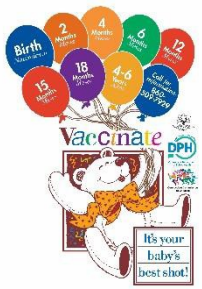
Figure 1 Immunization Messaging Use Cases

IIS Authorized Organization (IIS AO): entity authorized to submit data to an IIS and to request data from an IIS.
https://www.cdc.gov/vaccines/programs/iis/technical-guidance/downloads/hl7guide-1-5-2014-11.pdf

Current Diagram of Interoperability

EHR or Vendor Hub → CDC PHIN MS *(sender)* → BEST PHIN MS *(receiver)* → PilotFish *(transformation engine)* → IIS

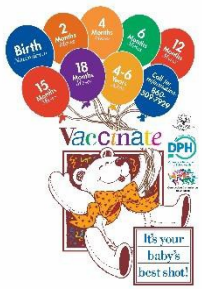




Potential Role of the CT HIE to Support Immunization Reporting

The CT HIE, once up and running, could support:

- Immunization message transport including transport mechanism, tracking, and timeliness
  - Assist the testing and establishment of connectivity from EHRs to the IIS
  - Validating errors/issues with transport and delays
  - Transforming/validating HL7 message structure (like done in the PilotFish transformation engine)
- Ensuring security of data sent by providers to HIE to IIS
- A Master-Patient Index to support patient matching and reduce duplication
- Ensuring Data Quality Assurance (DQA) of incoming immunization message content based on national standards
- Assisting with a DSS/Medicaid linkage with the IIS



CONTACT INFO

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Hartford, CT 06134 www.ct.gov/dph/immunizations

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Immunization Program Manager:
Kathy.Kudish@ct.gov Phone (860) 509-8080

Identify High-Value Use Cases

Possible Priority Candidates

- IIS needs to be interoperable with EHRs for both send and query/retrieve use cases
- Customization with Connecticut specific forms for school and preschool needs
- Vaccine forecasting with a focus on “problem solving” for catchup and other non-standard schedule needs
- Vaccine inventory tracking to support ordering

Review Recommendations

Proposed Timeline

Milestones/Deliverables	Planned Dates
Session 1: Kickoff Meeting (Validate charter, roles and responsibilities, and timeline of Design Group; receive update on current status of IIS system; identify value propositions)	7/7/17
Session 2: Discuss value propositions, high level review of CDC IIS functional standards and overall services; identify issues, obstacles, gaps	7/13/17
Session 3: Determine stakeholder needs and prioritization, identify additional stakeholders and their roles; review high-level implementation roadmap	7/20/17
Present update to Health IT Advisory Council	7/20/17
Session 4: Complete roadmap and draft action plan; review role of the HIE entity in supporting IIS interoperability	7/27/17
Session 5: Considerations for financial sustainability models and future Design Group needs, if necessary; draft recommendations	**8/3/17**
Present Report and Recommendations to Health IT Advisory Council	**8/17/17**

Next Steps

- Develop Report and Recommendations
  - August 4: Distribute report for review by email
  - August 7 – 9: Individual calls with Design Group members
  - August 10 – 11: Final review by Design Group members
  - August 14: Send report to Health IT Advisory Council
  - August 17: Health IT Advisory Council presentation

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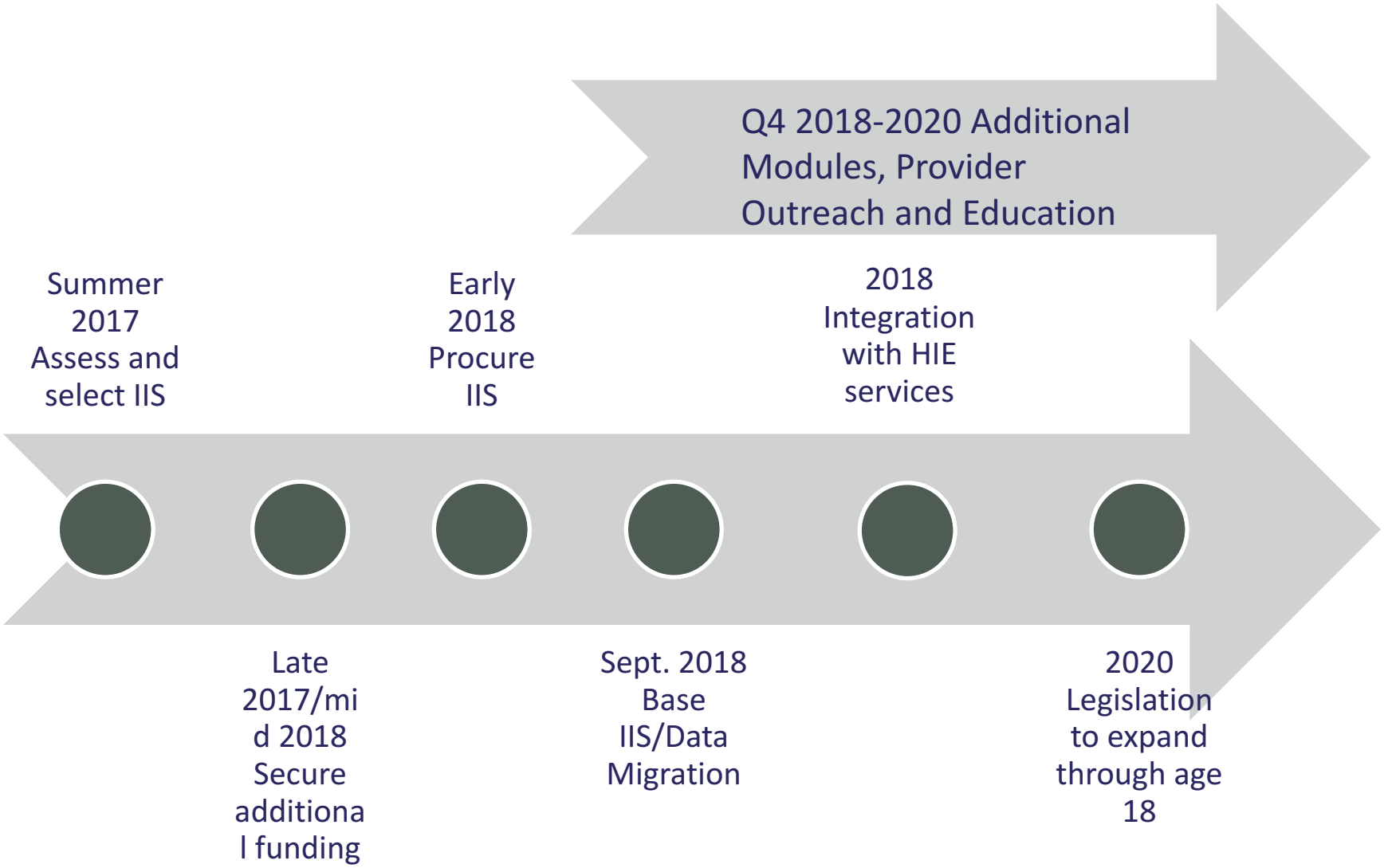
Appendix

Draft High-Level Implementation Roadmap



Role of HIE Services in IIS Interoperability

Public Act 16-77:
A Vision for Health IT in Connecticut

PA 16-77…

- Authorized the development and implementation of a statewide health information technology (health IT) plan
- •Created the role of Connecticut's Health Information Technology Officer (HITO), reporting to Lt. Governor Wyman
- •Created the Connecticut Health Information Technology Advisory Council

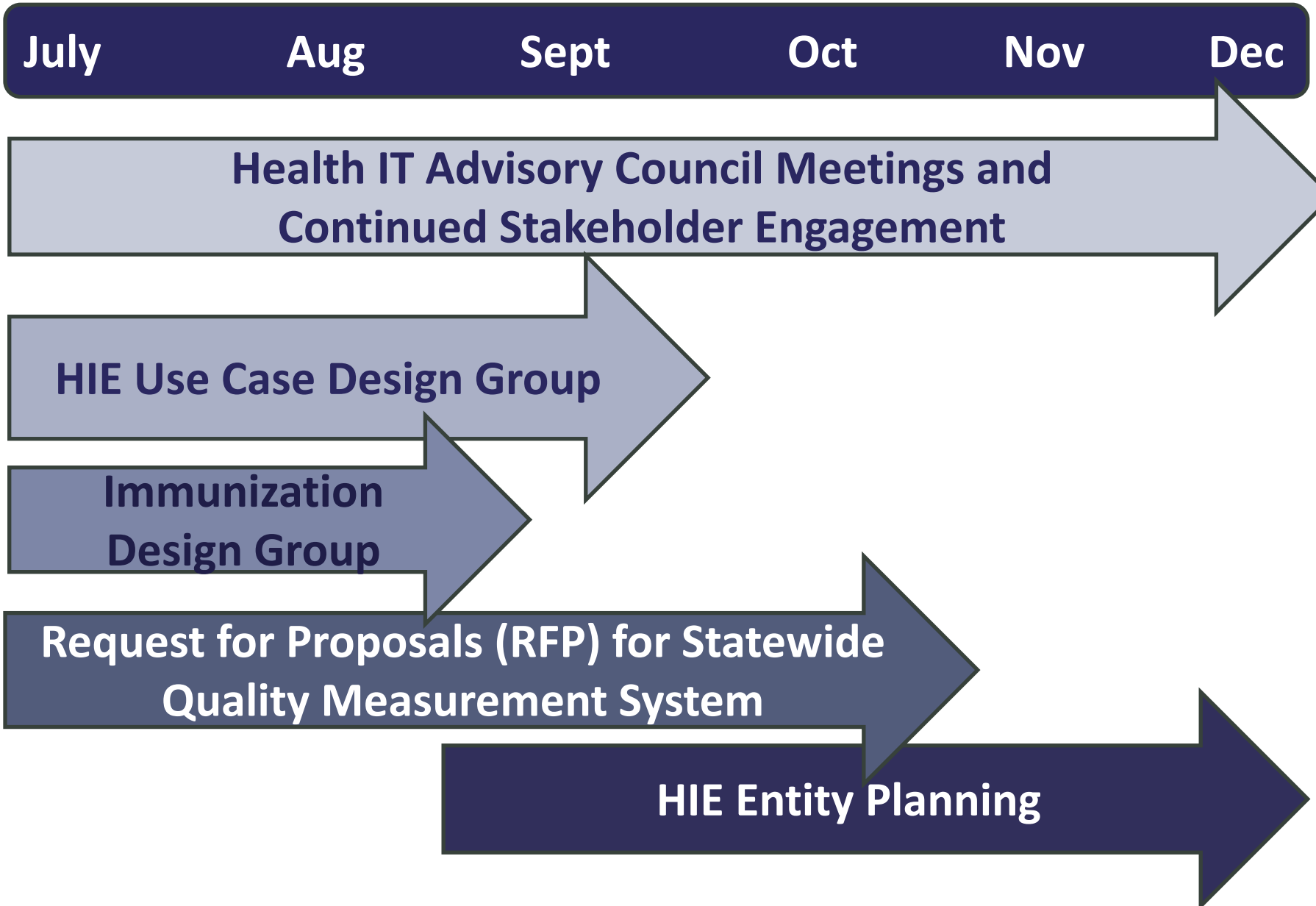
Bipartisan support; co-sponsored by Senate President Pro Tem Martin M. Looney (D-New Haven) & Senate Minority Leader Len Fasano (R-North Haven)

…establish a Health Information Exchange that will:

- ***empower consumers*** *to make effective health care decisions,*
- ***promote*** *patient-centered care,*
- ***improve*** *the quality, safety and value of health care,*
- ***reduce*** *waste and duplication of services,*
- ***support*** *clinical decision-making,*
- ***keep confidential*** *health information secure, and*
- ***make progress*** *toward the state's public health goals.*

https://www.cga.ct.gov/2016/act/pa/pdf/2016PA-00077-R00SB-00289-PA.pdf

Current and Planned Activities



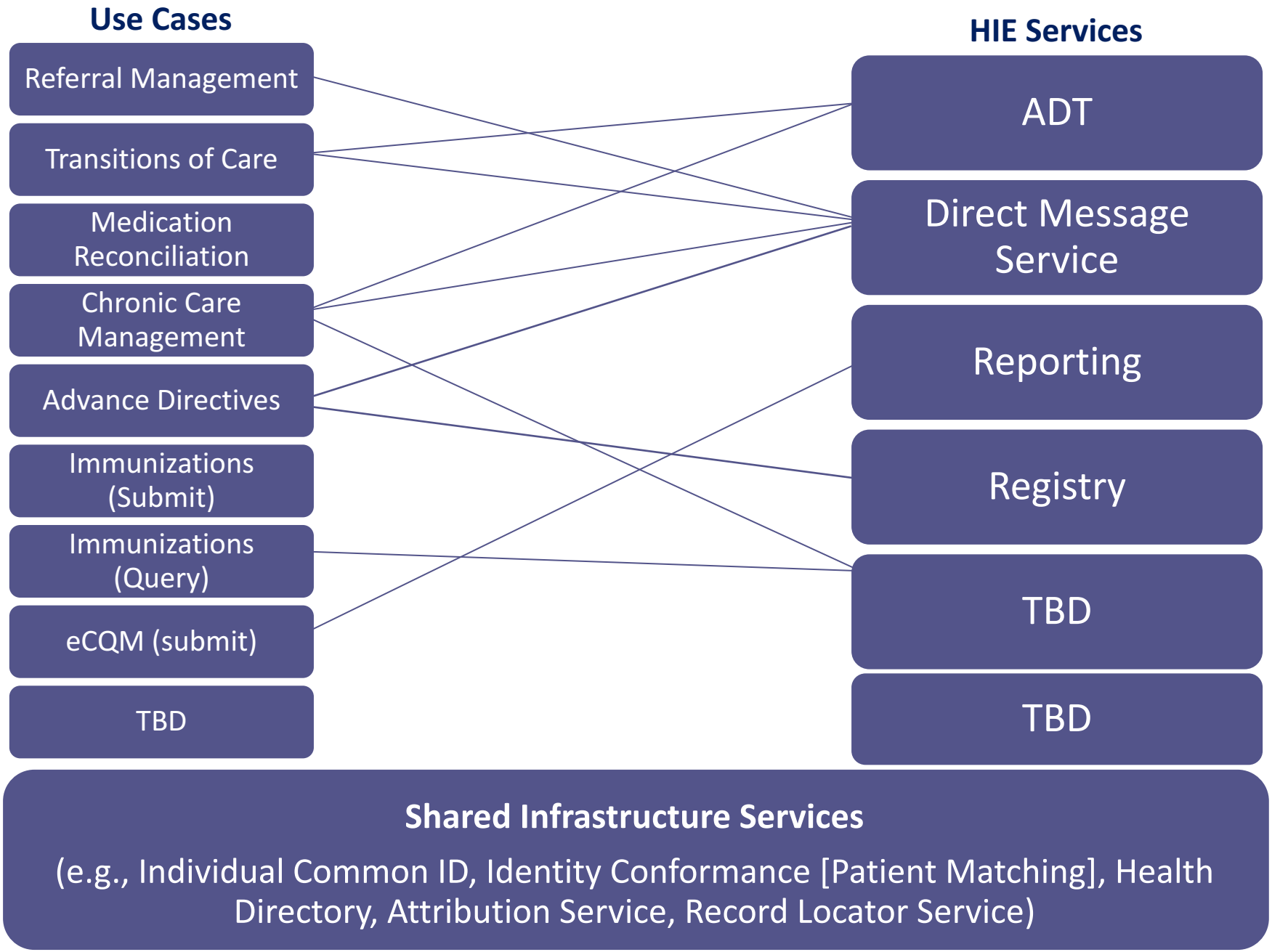
Statewide HIE
Shared Services Entity Design Group

Health IT Advisory Council members and designees representing diverse stakeholder groups will be appointed and tasked with the following goals:

- Recommendations for **operational and financial sustainability strategies** for a statewide HIE Shared Services entity

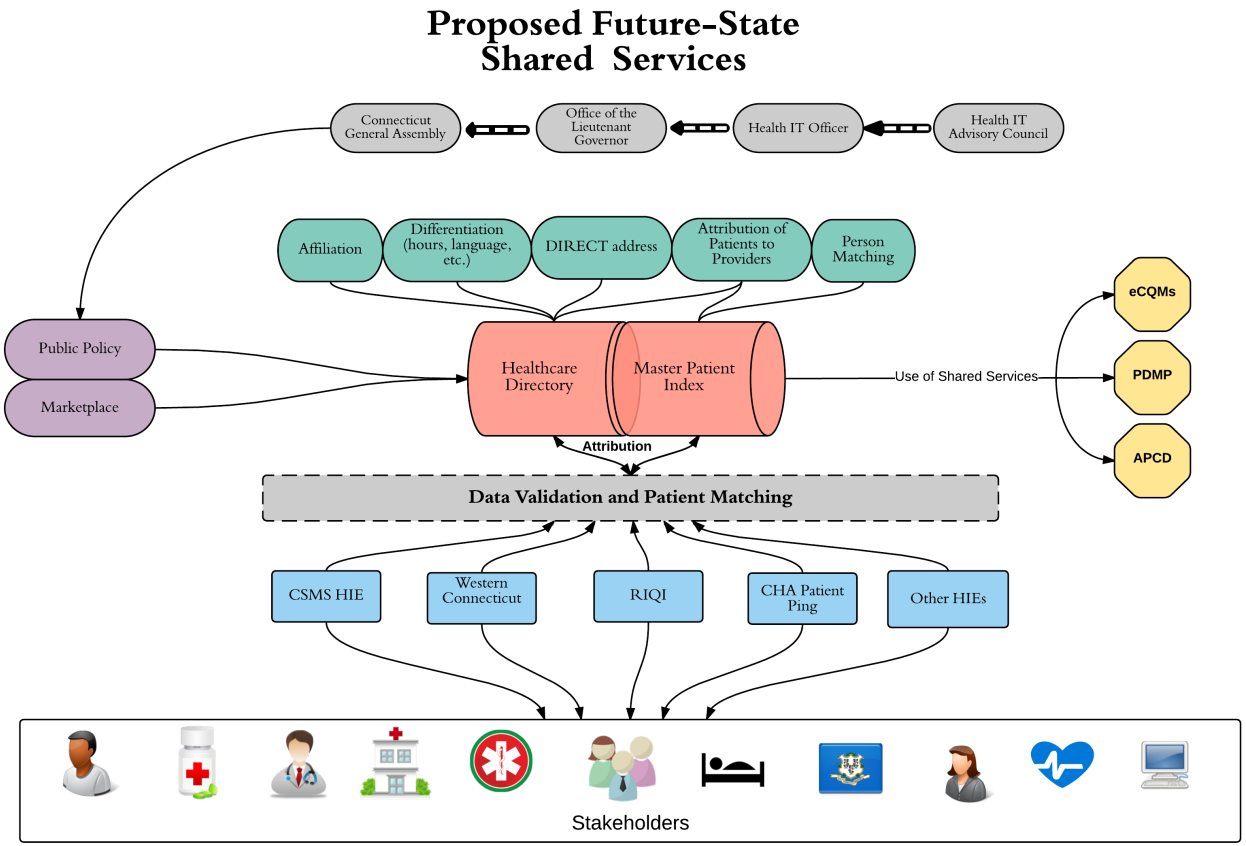
- Development of a **high-level roadmap** for the governance of a statewide HIE Shared Services entity, and for certification/accreditation of organizations providing federated HIE services in Connecticut

Shared Infrastructure Services



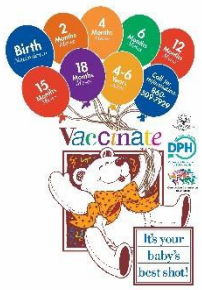
HIE Shared Services from Stakeholder Report

Connecticut must implement core technology that complements and interoperates with systems currently in use by private sector organizations.



At a minimum, core technology should include the ability to **authenticate identities of patients/consumers and providers** through a **statewide Healthcare Directory including providers, healthcare delivery organizations, community services organizations**, etc., linked to a statewide **Master Patient Index** through strong attribution capabilities.

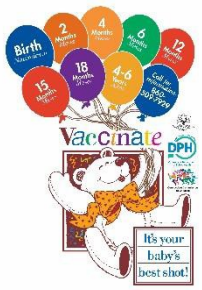
The diagram to the left displays a draft potential model of how State shared services could be designed.



2013 – 2017 IIS Functional Standard #1

1. Support the delivery of clinical immunization services at the point of immunization administration, regardless of setting. This standard includes:

- "Real-time" access to immunization records by authorized users. Internal IIS function.
- Vaccine forecasting – automated function to show user if vaccines are due, past due, or coming due. Internal IIS function.
- Reminder/Recall – production of a reminder (due for a vaccine) or a recall (past due for a vaccine) for individuals. Internal IIS function to trigger reminder/recall, but actual notice can be sent from another system (e.g., provider's EHRs).
- Automatic response to electronic queries from other health information systems based on interoperability standards. External function that requires a intermediary application to validate and transform incoming message to a valid output message.
- IIS can receive electronic submissions based on interoperability standards. Internal function – the IIS can receive the valid output message.

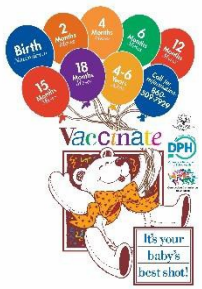


2013 – 2017 IIS Functional Standard #2

2. Support the activities and requirements for publicly-purchased vaccine, including the Vaccines for Children (VFC) and state purchase programs.

These are all required internal IIS functionality.

- Inventory function that automatically adds newly acquired vaccines and subtracts (i.e., decrements) vaccines as they are administered or otherwise "used".
- Vaccines are tagged based on purchase with public or private funds.
- Individual vaccine records include if the vaccine was a public or private vaccine to ensure public vaccine eligible doses are given properly.
- Vaccine inventory can be automated or accessed manually and allows record keeping for expired or borrowed vaccines.
- The IIS interfaces with the national vaccine ordering, inventory, and distribution system.
- The IIS can provide data and/or produce management reports for VFC and other public vaccine programs.

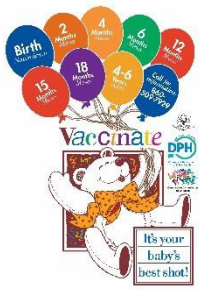


2013 – 2017 IIS Functional Standard #3

3. Maintain data quality (accurate, complete, timely data) on all immunization and demographic information in the IIS.

These are all required internal IIS functionality.

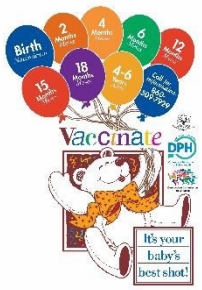
- Consolidated demographic and immunization records for all patients (in Connecticut, all patients eligible for enrollment into CIRTS).
  - This demographic/immunization information is available to authorized users.
  - An individual patient's active (enrolled) and inactive (opted out) status is known.
- IIS provides ability to identify, de-duplicate and resolve incomplete patient records as well as vaccination events.
- The IIS can store all IIS Core Data Elements (see Appendix B).
- IIS can establish a record for newborns upon upload of birth record data.



2013 – 2017 IIS Functional Standard #4

4. Preserve the integrity, security, availability and privacy of all personally-identifiable health and demographic data in the IIS.

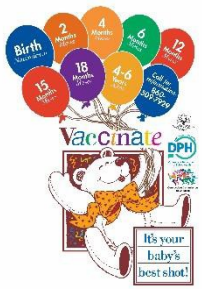
- The DPH Immunization program has written confidentiality and privacy practices and policies based on applicable law or regulation that protect all individuals whose data are contained in the system.
- The IIS has user access controls and logging, including distinct credentials for each user, least-privilege access, and routine maintenance of access privileges.
- The IIS is operated or hosted on secure hardware and software in accordance with industry standards for protected health information, including standards for security/encryption, uptime and disaster recovery. In Connecticut, the IIS is hosted at the Bureau of Enterprise Systems and Technology (BEST) in the state data center.



2013 – 2017 IIS Functional Standard #5

5. Provide immunization information to all authorized stakeholders.

- IIS can provide immunization data access to healthcare providers, public health, and other authorized stakeholders (e.g., schools, public programs, payers) according to law, regulation or policy.
- Reports can be generated (e.g., immunization coverage, vaccine usage, and other important indicators by geographic, demographic, provider, or provider groups) for authorized users without assistance from DPH Immunization Program personnel.
  - These include the AFIX report:
- IIS can provide copies of immunization records to individuals or parents/guardians with custodial rights (with appropriate levels of authentication).
- The IIS can produce an immunization record acceptable for official purposes (e.g., school, child care, camp).



2013 – 2017 IIS Functional Standard #6

6. Promote vaccine safety in public and private provider settings

- Provide the necessary reports and/or functionality to facilitate vaccine recalls when necessary, including the identification of recipients by vaccine lot, manufacturer, provider, and/or time frame.
- Facilitate reporting and/or investigation of adverse events following immunization.

DRAFT 2018 – 2022
Essential Infrastructure Standards

1.0 Contain **complete and timely demographic and immunization data for children, adolescents and adults** residing or immunized within its jurisdiction.

2.0 Implement **written and approved confidentiality policies** that protect the privacy of individuals whose data are contained in the system.

3.0 Implement **comprehensive written and approved security policies** consistent with industry standards.

4.0 The IIS is **physically and digitally secured in accordance with industry standards** for protected health information, security, encryption, uptime, and disaster recovery.

5.0 **Support IIS users who access and use the IIS functions, submit or access IIS data**.

DRAFT Goal One: Support clinicians in delivering age-appropriate immunizations

6.0 **Receive submissions and returns responses in accordance with interoperability standards** endorsed by the CDC for message content, format and transport.

7.0 **Ensure appropriate user access** to immunization records for clinical decision making at the time immunization services are delivered.

8.0 **Identify, prevent and resolve duplicated and fragmented patient records** using an automated process.

9.0 **Identify, prevent and resolve duplicate vaccination events** using an automated process.

10.0 F**orecast pediatric and adult immunizations** in a manner consistent with Advisory Committee on Immunization Program (ACIP) recommendations.

DRAFT Goal One: Support clinicians in delivering age-appropriate immunizations (cont.)

11.0 **Manage patient status** at the provider organization and jurisdiction levels.

12.0 **Track Vaccines for Children (VFC) vaccine eligibility** at the dose level for every dose of publicly purchased vaccine that is administered.

13.0 **Support vaccine product recall** activities.

14.0 **Support reporting and investigation of vaccine adverse events**.

DRAFT Goal Two: Support the control and management of vaccine preventable disease outbreaks

15.0 **Support public health response** during disease outbreaks.

16.0 **Support immunization related efforts in school and childcare settings.**

17.0 **Support immunization program activities during a public health emergency** according to the jurisdictions public health emergency plan.

DRAFT Goal Three: Support and inform stakeholder efforts to improve immunization rates.

18.0 **Provide predefined and ad hoc assessment and coverage reports** that users can generate without assistance from IIS personnel.

19.0 **Support reminder and recall** activities.

20.0 **Provide immunization records to individuals with appropriate authentication**.

21.0 **Ensure appropriate access** to the data in the IIS to all stakeholders **for public and population health purposes**.

22.0 Reliably **exchange information electronically with IIS** in other jurisdictions.

DRAFT Goal Four: Support providers in meeting the requirements of the Vaccines for Children Program and state and local immunization programs.

23.0 **Support vaccine management** and quality assurance functions **for the Vaccines for Children (VFC), state and local immunization programs**.

24.0 **Support data exchange with the national Vaccine Tracking System** (VTrckS).

25.0 **Support provider site level vaccine inventory management and reconciliation** according to VFC, state and local immunization program requirements.

26.0 **Decrement administered doses from inventory** maintained in the IIS.

27.0 **Provide data or produces reports** for VFC, state and local immunization programs.