Immunization Registry Design Group

A Design Group of the Connecticut Health IT Advisory Council

July, 13 2017 | 11:30 am – 1:00 pm

Session 2

Facilitated by CedarBridge Group

Agenda

Welcoming Remarks **Meeting Overview and Objectives**	Christina Coughlin	11:30 AM
Approve Session 1 Meeting Summary	Design Group Members	11:32 AM
Value Proposition Discussion	Design Group Members	11:35 AM
Review of CDC Functional Standards	Pete Robinson	12:05 PM
Current CIRTS Gaps • *Gap Analysis including current data* • *Decision to move to new IIS*	Nancy Sharova	12:20 PM
Identify Issues, Obstacles, and Gaps • *Update on DAS-Best and transport* • *Considerations may include funding, timing, technical assistance, policies/legislation*	Design Group Members and Support Staff	12:35 PM
Meeting Wrap-up and Next Steps	Christina Coughlin	12:55 PM

Meeting Objectives

- Approve Session 1 Meeting Summary

- Identify aspirational IIS value propositions

- Review CDC Functional Standards

- Understand CIRTS gap analysis and decision to move to new IIS platform

- Begin to identify issues that will need to be addressed through Design Group recommendations

Approve Session 1 Meeting Summary

Value Proposition Discussion

Value Proposition Overview

- A value proposition is the assumed benefit to be provided to stakeholders.

- Individual stakeholder groups often have their own lens with which they define value. While there may be some overlap between groups, it is important to identify value propositions by stakeholder groups.

- Value can refer to financial incentives and/or cost savings, improved quality, administrative efficiencies, benefit to society, and more.

Value Proposition Exercise

	Efficiencies	Quality Improvement	Population Health	Cost Savings	TBD
Consumers	Streamlined access to records	Ability to track immunizations Ability to inform more accurate records	More up-to-date immunizations leading to healthier populations	Reduced wasted time and effort tracking down vaccines	
Providers					
Public Health					
Schools					
Pharmacies					
Employers					
Payers/Medicaid					
Foster Care					

Review of
CDC Functional Standards

Current 2013 – 2017 Functional Standards

1. Support the delivery of clinical immunization services **at the point of immunization administration, regardless of setting**.

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

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

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

5. Provide immunization information to **all authorized stakeholders**.

6. Promote **vaccine safety** in public and private provider settings

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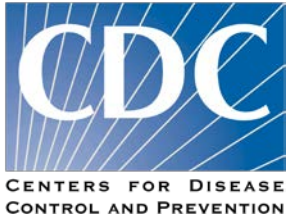
DRAFT Goal One: Support clinicians in delivering age-appropriate immunizations (cont.)

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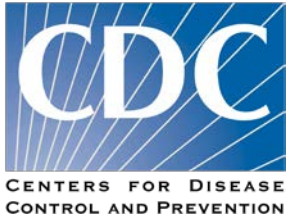
DRAFT Goal Two: Support the control and management of vaccine preventable disease outbreaks

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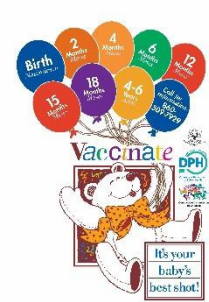
23.0 **Support vaccine management** and quality assurance functions **for the Vaccines for Children (VFC), state and local immunization programs**.

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.

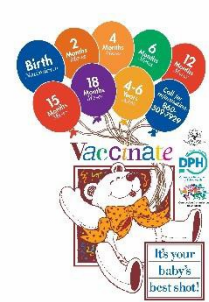# Connecticut Immunization Registry and Tracking System (CIRTS) Gap Analysis Results

Immunization Information System (IIS) Implementation and Alignment Design Group Meeting
July 13, 2017

Presented by:
Nancy Sharova, MPH, CIRTS Supervisor

**Connecticut Department of Public Health**

CIRTS – Need to Meet 2013-2017 National IIS Functional Standards

- DPH Immunization Program is required to have an IIS that meets the current CDC IIS Functional Standards and can be modified to meet new standards as they are developed.

- CIRTS upgraded to a new IIS in April 2012.
  - The current 2013-2017 standards include functionality that was not initially built into CIRTS. As funding has been made available, DPH has worked toward incorporating these new functionalities.
    - There have been 6 additional releases to enhance CIRTS.

- CIRTS is based on the Maven application licensed by Conduent Public Health Solutions, Inc. and is currently the only IIS supported by this vendor.
  - However, CT DPH has 3 other instances of Maven: CTEDSS, CTSITE, and CTEPHT.
 - The intent was to move away from silos and integrate these systems.
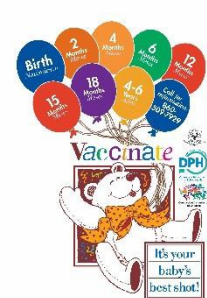
CIRTS – Need to Meet 2013-2017 National IIS Functional Standards, Continued

- DPH, in consultation with the CDC, requested a "gap analysis" be conducted to assess CIRTS, the vendor and the program's ability to meet these new standards. This effort occurred in late 2016, with a final report in March 2017.
  - Two options were provided: build upon the existing IIS or purchase a replacement IIS.
  - The replacement IIS solution operates with a Consortium of states which would provide resource and cost-sharing benefits.
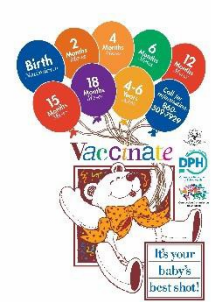- The following is an overview of the IIS functional standards and the identified gaps in CIRTS.
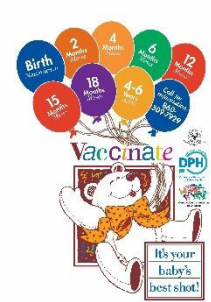
Summary of Functionality in CIRTS

	IIS Standard Number	Percentage completed in CIRTS	
Integral to IIS (functionality is part of the system)			
Vaccine Forecasting	1	95%	
Vaccine Tracking and Ordering (inventory)	2,6	0%	
AFIX and immunization record certificate	2,5	20%	
VFC (public vaccine tracking)	2	80%	
Data Quality and Core Data Elements	3	Core Elements: 100% Data Quality: 60%	
Security and Access	1,3,4,5	100%	
Adverse event reporting/follow up	6	50%	
External application/support			
Hardware/Software standards	4	100% (hosting environment) Production system hosted at BEST; in-house test system as well	
Interoperability	1, 2	20% (testing phase) Relies on use of external applications to manage message transport, message validation and transformation, and message acknowledgements.	

CT IIS Statistics

CT IIS currently tracks children's primary series, however providers with direct access may enter records beyond age 6. Once EHRs report electronically, children born out of state and children beyond age 6 will be enrolled electronically. The goal is to amend the regulations to expand the age range tracked in CIRTS.

CT IIS Annual Report (IISAR) statistics as reported through 03/31/2017:

Children:
- (99% of CT births enrolled) 37,359 children born in 2016 and enrolled in CIRTS
- (82% enrolled per Census) 175,218 children in CIRTS aged 4 months – 5 years
- (75% per Census) 161,726 children in CIRTS aged 4 months – 5 years with 2+ immunizations recorded

Adolescents:
- (75% per Census) 245,463 adolescents aged 11 – 17 years enrolled in CIRTS
- (1% per Census) 3,901 adolescents in CIRTS aged 11 – 17 years with 2+ immunizations recorded

Adults:
- (2% per Census) 52,565 adults aged 19 years and older
- (<1% per Census) 79 adults in CIRTS aged 19 years and older with 2+ immunizations recorded
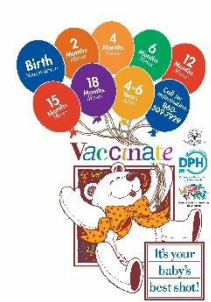
CT IIS Statistics, cont.

- (100%) 476 Pediatric and Family Practices Report to CIRTS (mandated reporting)

- 21 Out-of-State Practices Report to CIRTS (voluntary reporting)
  - 10 New York
  - 6 Rhode Island
  - 5 Massachusetts

- >30% of sites have direct online access to CIRTS (not including DPH staff or School Nurses)

- EHR Vendor Pilot Sites are in the Testing Phase with electronic reporting to CIRTS using national HL7 standards. These efforts will carry over to electronic reporting in a replacement IIS. The following is an overview of the CIRTS EHR Interoperability Process.
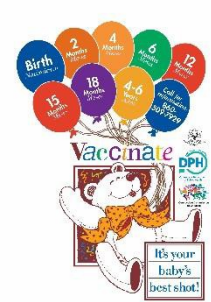
CONTACT INFO

CT Department of Public Health State Immunization Program
410 Capitol Avenue, MS 11 MUN
Hartford, CT 06134 www.ct.gov/dph/immunizations

Main Phone: (860) 509-7929 Fax: (860) 509-8370

CIRTS Supervisor:
Nancy.Sharova@ct.gov Phone (860) 509-7912

Identify Issues, Obstacles, and Gaps

Overall Gap Analysis

Issue/Gap	Recommendation
Web-based services (DAS-BEST)	SOAP?
Sustainable funding	
Parallel systems (CIRTS and new IIS platform)	
Provider onboarding / workflow	Incentives / requirements?
Legislative updates	Draft updated language?

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

- Review Value Propositions

- Next Meeting: Thursday July 20, 11:30am EDT

Appendix
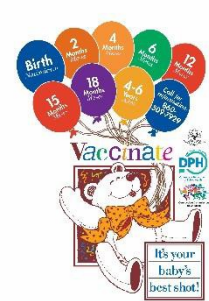
2013 – 2017 IIS Functional Standard #1

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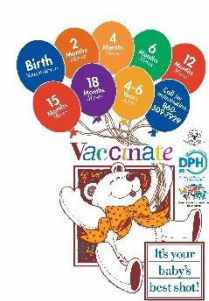
2. Support the activities and requirements for publicly-purchased vaccine, including the Vaccines for Children (VFC) and state purchase programs.

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.
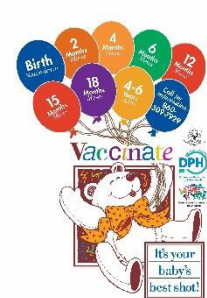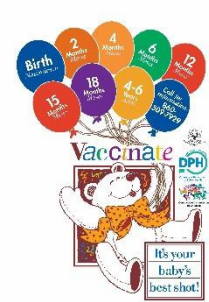
2013 – 2017 IIS Functional Standard #3

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.
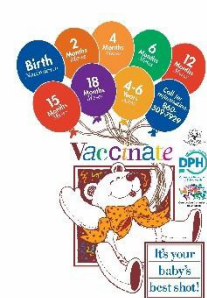
2013 – 2017 IIS Functional Standard #4

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.

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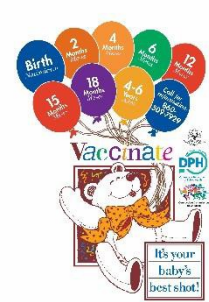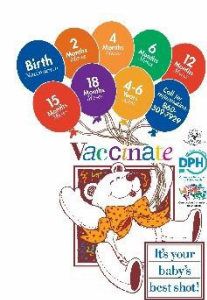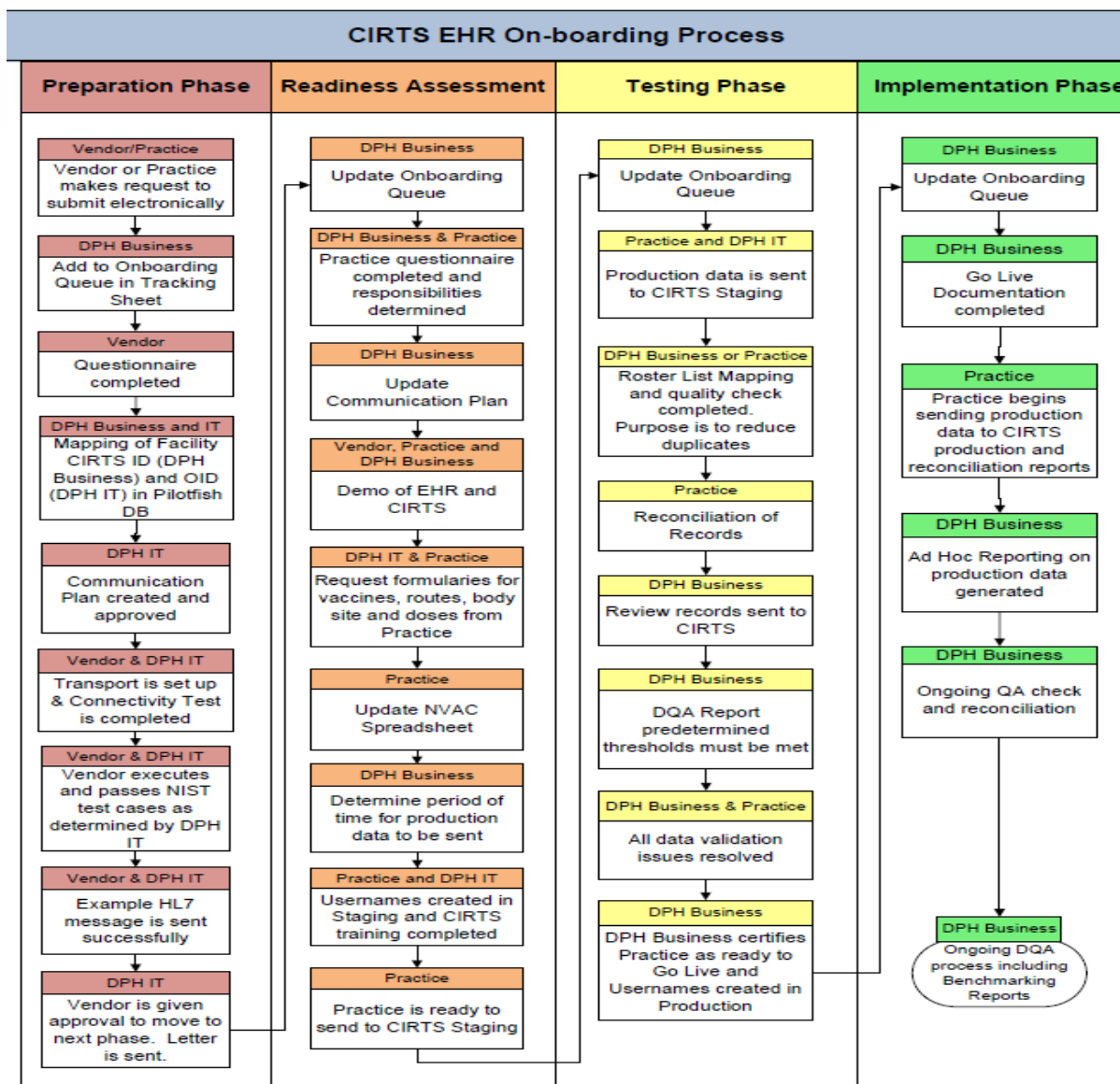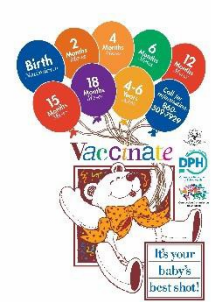
6. Promote vaccine safety in public and private provider settings
- Provide the necessary reports and/or functionality to facilitate vaccine recalls when necessary, including the identification of recipients by vaccine lot, manufacturer, provider, and/or time frame.
- Facilitate reporting and/or investigation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

CIRTS EHR "Interoperability" Process

CIRTS EHR On-boarding Process

Preparation Phase	Readiness Assessment	Testing Phase	Implementation Phase
Vendor/Practice Vendor or Practice makes request to submit electronically	**DPH Business** Update Onboarding Queue	**DPH Business** Update Onboarding Queue	**DPH Business** Update Onboarding Queue
DPH Business Add to Onboarding Queue in Tracking Sheet	**DPH Business & Practice** Practice questionnaire completed and responsibilities determined	**Practice and DPH IT** Production data is sent to CIRTS Staging	**DPH Business** Go Live Documentation completed
Vendor Questionnaire completed	**DPH Business** Update Communication Plan	**DPH Business or Practice** Roster List Mapping and quality check completed. Purpose is to reduce duplicates	**Practice** Practice begins sending production data to CIRTS production and reconciliation reports
DPH Business and IT Mapping of Facility CIRTS ID (DPH Business) and OID (DPH IT) in Pilotfish DB	**Vendor, Practice and DPH Business** Demo of EHR and CIRTS	**Practice** Reconciliation of Records	**DPH Business** Ad Hoc Reporting on production data generated
DPH IT Communication Plan created and approved	**DPH IT & Practice** Request formularies for vaccines, routes, body site and doses from Practice	**DPH Business** Review records sent to CIRTS	**DPH Business** Ongoing QA check and reconciliation
Vendor & DPH IT Transport is set up & Connectivity Test is completed	**Practice** Update NVAC Spreadsheet	**DPH Business** DQA Report predetermined thresholds must be met	
Vendor & DPH IT Vendor executes and passes NIST test cases as determined by DPH IT	**DPH Business** Determine period of time for production data to be sent	**DPH Business & Practice** All data validation issues resolved	
Vendor & DPH IT Example HL7 message is sent successfully	**Practice and DPH IT** Usernames created in Staging and CIRTS training completed	**DPH Business** DPH Business certifies Practice as ready to Go Live and Usernames created in Production	**DPH Business** Ongoing DQA process including Benchmarking Reports
DPH IT Vendor is given approval to move to next phase. Letter is sent.	**Practice** Practice is ready to send to CIRTS Staging		

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#1 – Preparation Phase

Communication Plan

Vendor or 3rd Party Integrator request to begin process for electronic reporting

DPH reviews questionnaire and transport model

Presentation on Communication Plan with all stakeholders and update feedback

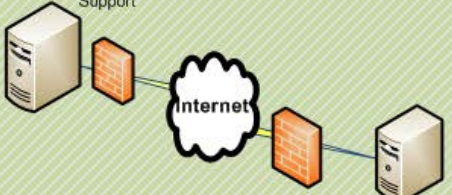Communication plan approved by all parties

HL7 Structure Check

Vendor Testing of HL7 interface for structure on MUST Portal

Transport

PHIN MS setup and Installation by vendor with CDC PHIN MS Tech Support

Connectivity test for Transport

BEST PHIN MS

HL7 Content Check

Vendor Testing of HL7 Interface for content using 7 NIST Test Scenarios

Vendor must create test messages and either post to state's sftp or test on NIST web site

DPH will anazle test results for each of the 7 NIST test case

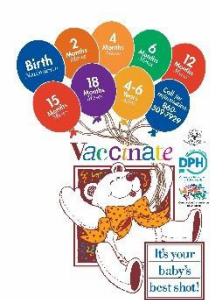DPH will generate the issues report for correction by vendor

Vendor will resubmit test with issue for evalution

DPH will analyze resubmission until no errors exist

DPH will approve the vendor to begin readiness assessment with their customers

P R E P A R A T I O N   P H A S E

#2 – Readiness Assessment

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Communication Plan

Add new stakeholders to begin process for electronic reporting

DPH reviews 3rd and practice questionnaires and updates communication plan

Presentation on Communication Plan with all stakeholders and update feedback

Communication plan approved by all parties

EHR System Check

EHR Application Review

NVAC IIS Core Data Elements
HL7 Table Code mappings
OIDs for individual practices
Roster list for Medical Record #
Test messages generated from EHR system
Business Workflows that affect HL7 message
Determine reporting method (real time or batch), ages, volume and frequency
NIST test scenarios and test messages and issues review

Practice Engagement

Practice Review

Practice enrollment for electronic reporting, confidentiality agreements
Update Roster list with medical record numbers
Data quality assessment on all data submitted during testing
Determine what the threshold will be to move to electronic reporting to production
Training for the practice in CIRTS and electronic reporting requirements, user account creation
Identify who needs to be trained and schedule training
Reporting and on going data quality review, error resolution
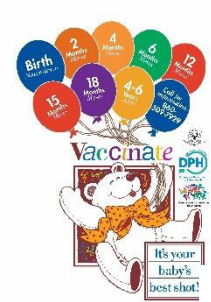Additional reporting capability in CIRTS to help practice with electronic reporting

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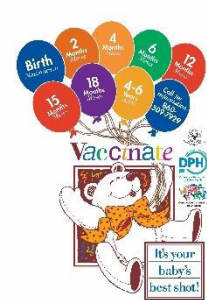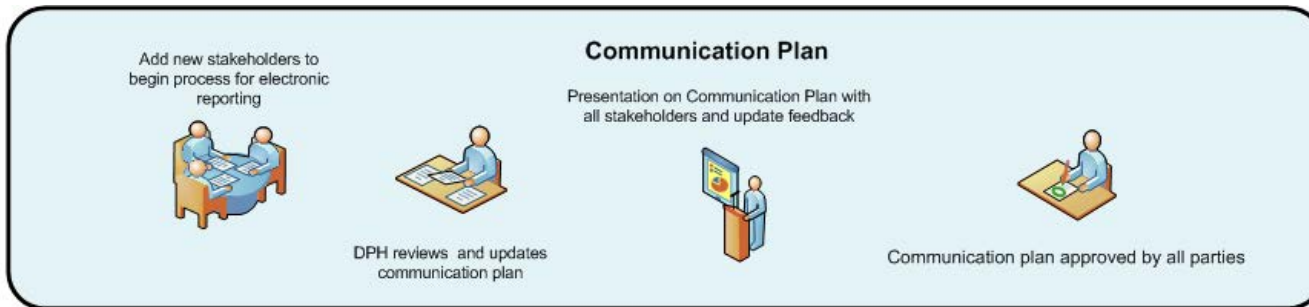
#3 – Testing Phase
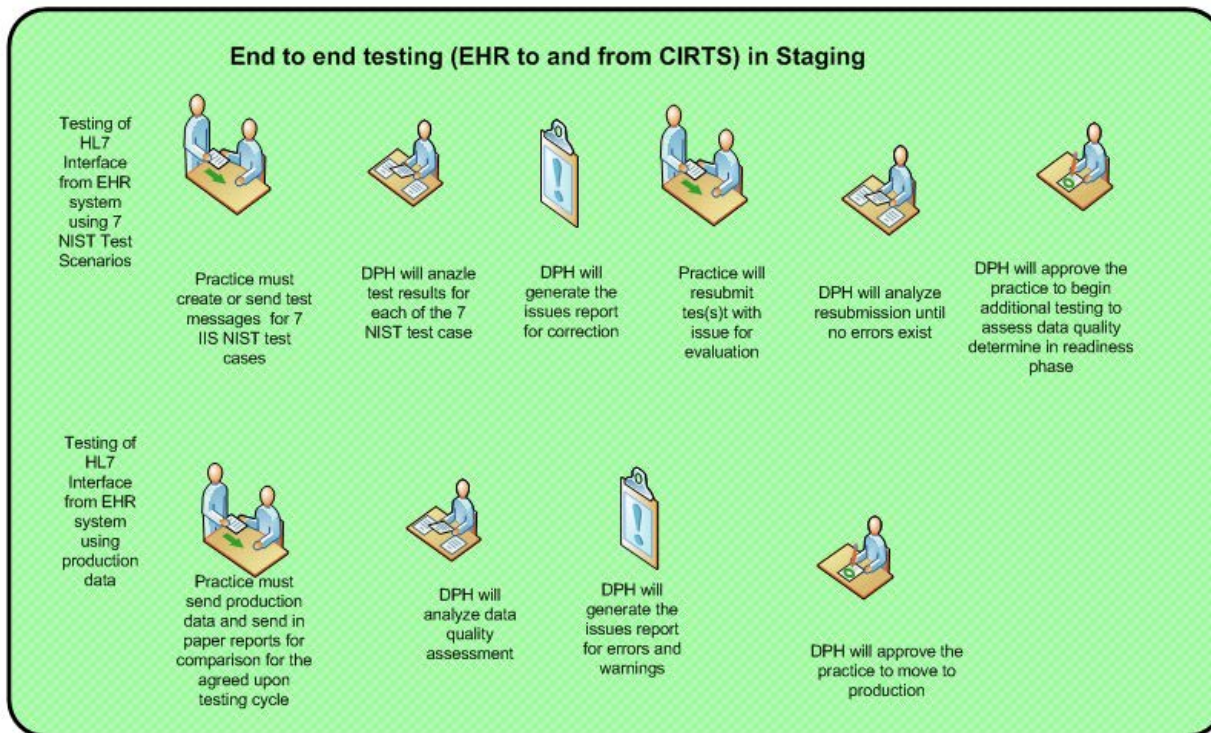
#4 – Implementation Phase

IMPLENTATION

Communication Plan

Add new stakeholders to begin process for electronic reporting

DPH reviews and updates communication plan

Presentation on Communication Plan with all stakeholders and update feedback

Communication plan approved by all parties

EHR Data Quality Check

EHR Data Quality for content, completeness and timeliness

Practice Engagement

Practice Review

Data quality assessment on all data submitted
Reporting and on going data quality review, error resolution
Additional reporting capability in CIRTS to help practice with electronic reporting