Meaningful Use and Immunization Information Systems: A Case Study

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Overview

- Brief Review of Meaningful Use (MU) and the Immunization Requirements
- NYC IIS: Citywide Immunization Registry
- NYC Process
- NYC Participants and Progress to Date

Brief Review of Meaningful Use and the Immunization Requirements

Background: Meaningful Use

- In July 2010, the Centers for Medicare and Medicaid Services (CMS) and the Office of the National Coordinator (ONC) published final rules for Meaningful Use Stage I
- Authorized incentive payments to healthcare providers and hospitals that demonstrate meaningful use of certified electronic health records (EHRs)
- One objective of Meaningful Use is the use of an EHR system to report to the state/local immunization registry

Immunization Registry Objective & Measure (Stage 1)

CMS Objective	"Capability to submit electronic data to immunization registries or Immunization Information Systems and actual submission in accordance with applicable law and practice."
CMS Measure	"Performed at least one test of certified EHR technology's capacity to submit electronic data to immunization registries and follow up submission if the test is successful (unless none of the immunization registries to which the EP, eligible hospital or CAH submits such information have the capacity to receive the information electronically)."

Immunization Objective & Measure

- Not mandatory--one of three Public Health measures
- Information must be sent in HL7 format (version 2.3.1 or 2.5.1) in order to satisfy MU requirements

NYC IIS: Citywide Immunization Registry (CIR)

Benefits of the CIR to Clinicians

- Consolidated Immunization Histories
    - 4.4 million patient records
    - 51+ million immunization records
    - 1,815 active provider sites
- Clinical Decision Support
    - Evaluations (e.g., was the immunization valid?)
    - Recommendations (e.g., when is next dose due?)
    - Updated for new vaccines, changing guidelines

Benefits of Interoperability to Clinicians

- Allows clinicians to send and receive immunization data without leaving their EHR
- Eliminates double data entry
- Delivers decision support
- Reduces missed opportunities and extra immunizations
- Improves practice coverage rates
- In NYC, 805 provider sites are currently using EHRs, covering 455,000 children < 6 years of age

CIR's Interoperability Technology: SOAP Web Service

- Simple Object Access Protocol—information transport method
- Ease of integration with EHRs using Microsoft's .NET framework or Java
- Free, Open Source Apache Axis (web service infrastructure) fits with other NYC CIR technologies (ex. online registry)
- Recent vote by CDC expert panel selected SOAP as the recommended standard for immunization data exchange

NYC Process

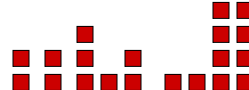# CIR HL7 Web Service and MU timeline

■ = 1 vendor

July 2009

Columbia Presbyterian begins querying

July 2010
CMS announces MU final rule

2009	2010	2011

Jun 2009

HL7 web service implemented

Sep 2010

CIR awarded ARRA CDC Interoperability Grant

Today

Implementation Process

Send CIR HL7 integration guide and implementation checklist to vendor

⬇

Development, regular conference calls

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Testing and Quality Assurance with Enhanced QA tool
• 30 days of real patient data

⬇

Certification

⬇

Roll-out

⬇

Ongoing Data Monitoring (Enhanced QA Tool)

Timeline varies from 2-6 months, depending on vendor capacity

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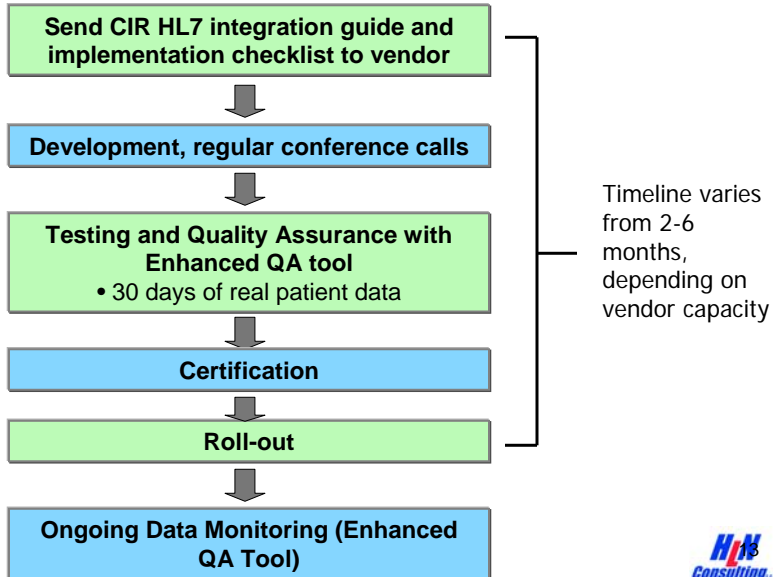
Encourage EHR Vendors to:

- Include important fields —e.g. VFC eligibility, vaccine manufacturer, lot number
- Validate messages before sending to CIR
- Develop an effective error handling process that is convenient for the provider

Testing Process

- EHR vendors send one month of real patient data to web service test environment from pilot site
- CIR staff use Enhanced QA tool to:
  - Search for messages coming from a particular facility
  - Quantify the number of successful, partially successful, and failed messages, and identify common errors
  - List messages for each statistic
  - List parsed field values for each message
  - Display errors and warnings at field level
- Vendors repeat test with new data until all issues have been resolved

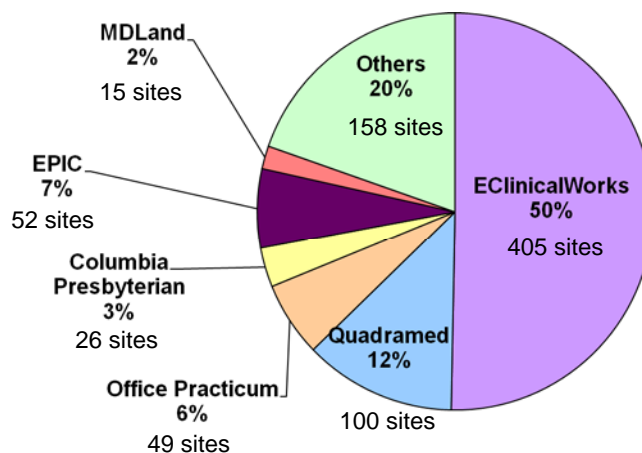# NYC Participants: Progress to Date

Work with Regional Extension Center (NYC REACH)

- NYC REACH has four preferred vendors/meaningful use partners: eCW, MDLand, Greenway and NextGen
  - Have contractual obligations to develop bi-directional communication with CIR
  - Input from all three parties on development decisions, design document

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Market Share of EHR Vendors Among CIR Providers

MDLand 2% — 15 sites
Others 20% — 158 sites
EPIC 7% — 52 sites
EClinicalWorks 50% — 405 sites
Columbia Presbyterian 3% — 26 sites
Quadramed 12% — 100 sites
Office Practicum 6% — 49 sites

N=805 provider sites with EHRs
(out of 1,815 CIR providers)

Successes

- 19 providers in production for bi-directional communication thus far; 22,910 VXU (immunization report) messages received
- 26 sites (Columbia Presbyterian) in production for query messages only, in final testing phase for reporting
- 26 EHR vendors working to connect to the web service- one currently in production
- Involvement of most large hospital networks
- NYC schools developing capability to query CIR

Challenges

- Resistance on the part of EHR vendors to develop bi-directional communication
- Some resistance to developing a web service interface
- Limited leverage to keep vendors to a timeline
- Multiple hospitals may be using the same EHR vendor, but have different development teams, different development requirements
- Working with small vendors with few provider sites

Next Steps

- By August 2011:
  - 200 sites interoperable
  - Complete testing with:
    - Columbia Presbyterian (for reporting)
    - eCW
    - MDLand
    - Quadramed
    - Allscripts
- Measure increases in reporting volume, timeliness, completeness, and coverage as more sites connect

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