90/10 Projects at New York City Department of Health and Mental Hygiene

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### Background on 90/10

The Health Information Technology for Economic and Clinical Health (HITECH) Act provides “90/10” funding, of which the public health scope has been increasingly clarified through State Medicaid Director’s (SMD) letters.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>HITECH was signed into law as part of The American Recovery and Reinvestment Act (ARRA)</td>
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<tr>
<td></td>
<td>• Designed to promote adoption of health information technology (HIT) – particularly, “meaningful use” of electronic health records (EHRs) – and health information exchange (HIE)</td>
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<td></td>
<td>• Meaningful Use (MU) stages 1-3 progressively added more public health measures</td>
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<tr>
<td>2010</td>
<td>State Medicaid Director’s (SMD) letter 10-016 provides guidance to increase public health capabilities and readiness for Meaningful Use (MU)</td>
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<tr>
<td></td>
<td>• States may potentially receive 90 percent FFP for the following program administration activities… System and resource costs associated with State interfaces of a Health Information Exchange (HIE)—(e.g., laboratories, immunization registries, public health databases…</td>
</tr>
<tr>
<td></td>
<td>• ...CMS encourages State Medicaid agencies to collaborate on HIT initiatives with... public health departments, county governments, and local governments.</td>
</tr>
<tr>
<td>2016</td>
<td>SMD Letter #16-003 more explicitly provides guidance related to public health capabilities</td>
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<tr>
<td></td>
<td>• ...States may also claim 90 percent HITECH match for the costs of on-boarding Medicaid public health providers to interoperable systems and HIEs connected to Eligible Providers so that Eligible Providers are able to meet Meaningful Use measures focused on public health reporting and the exchange of public health data, including activities such as validation and testing for reporting of public health measures described in 42 CFR 495.22 and 495.24.</td>
</tr>
</tbody>
</table>
Background

• New York City (NYC) Department of Health and Mental Hygiene (DOHMH)
  • NYC has 8.5 million residents in 5 boroughs
  • DOHMH has 6,000 employees and annual budget of $1.6 billion
  • DOHMH is organized into Divisions containing various Bureaus
  • Mission: Measure, reduce, and prevent disease and death

• Division of Disease Control
  • Disease Surveillance Units in Bureaus of Immunization, Communicable Disease, Sexually Transmitted Infections, Tuberculosis Control, and HIV/AIDS Prevention and Control
  • Syndromic Surveillance Unit in Bureau of Communicable Disease
  • Citywide Immunization Registry (CIR) in Bureau of Immunization
Public Health 90/10 project life cycle using ARRA/HITECH

• Project request document template
  • Drafted by Public Health
  • Reviewed by NYS DOH and NYS Medicaid
  • Projects must help providers meet MU/Interoperability project requirements

• NYS proposes eligible projects to CMS, in Implementation Advanced Planning Document (IAPD)

• Centers for Medicare and Medicaid Services (CMS) reviews projects and provides federal funds

• NYS provides non-federal match and implements CMS approved projects
ARRA/HITECH 90/10 projects

New York State Hourly Based Information Technology Services (HBITS) contractors for software development

Hardware & software infrastructure

Software changes for updates to HL7 standards

Onboarding through NYS Enhanced Meaningful Use (EMU) Support Program

Provided by NYS in previous projects

Citywide Immunization Registry

Electronic laboratory reporting

Syndromic Surveillance

Electronic case reporting

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Citywide Immunization Registry (CIR)

• Implemented citywide in 1997
• Mandatory reporting of immunizations for *children* 0-18 years; reporting for adults >19 years requires consent
• 7.9 million patient records; 104 million immunizations
• 67 different EHRs at ~2,600 active provider sites in 2018
• Exchanges immunization records with the New York State Immunization Information System (NYSIIS)
Immunizations reported to CIR, monthly, by reporting method
January 2011 to May 2019

Graph showing the number of new immunizations reported monthly from January 2011 to May 2019, with three series labeled Series1, Series2, and Series3.
Patient immunization record searches in CIR, monthly, by real-time search method
January 2011 to May 2019

Number of Searches

Year and Month

Series1

Series2
MDLand iClinic: download to empty immunization record

<table>
<thead>
<tr>
<th>Vaccine Group</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTaP/DT/Td/Tdap</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H1N1 Influenza</td>
<td></td>
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<tr>
<td>Hep A</td>
<td></td>
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<tr>
<td>Hep B</td>
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<tr>
<td>Hib</td>
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<tr>
<td>HPV</td>
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<tr>
<td>Influenza</td>
<td></td>
<td></td>
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<tr>
<td>Meningococcal</td>
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<td></td>
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<tr>
<td>MMR/Measles/Rubella</td>
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</tbody>
</table>

Download All Vaccines

Record Up/Download

View Up/Download History

Vaccine File
FLSHOTS File
ImmiTrac File
NYSIIS File
CIR File Form
MDLand iClinic: immunizations and clinical decision support downloaded from CIR

## Syndromic surveillance

<table>
<thead>
<tr>
<th>System</th>
<th>Data analyzed</th>
<th>Utility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Emergency department</td>
<td>Chief complaint Diagnosis code (ICD-10)</td>
<td>Outbreak detection Situation awareness Expected trends Emerging trends</td>
</tr>
<tr>
<td>2. 911 calls</td>
<td>Call type</td>
<td>Outbreak detection</td>
</tr>
<tr>
<td>3. Pharmacy sales</td>
<td>Drug name</td>
<td>GI illness</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Influenza surveillance</td>
</tr>
<tr>
<td>4. School nurse visits</td>
<td>Reason for visit</td>
<td>Outbreak detection Expected trends</td>
</tr>
</tbody>
</table>
Chief complaint is richer in HL7
Completeness of ICD10 diagnosis code is higher in HL7
Added value of HL7 interface for promoting interoperability

• The data are now received in close to real time

• Information is more complete and has more measures:
  
  Patient date of birth  
  Temperature

  $O_2$ saturation (Pulse Ox)  
  Nurse triage notes

  Race  
  Birth country

  Insurance  
  Blood pressure

  Smoking status
Electronic Lab Reporting (ELR)

• Initiated in 2002
• All clinical labs serving residents of NYC required to submit results electronically by July 1, 2006
• NYC DOHMH works with NYS DOH to receive and perform message quality assurance
• Migrated to HL7 2.5.1 in August, 2016
• Laboratory Coordinators and Informatics Analyst work with hospital labs to meet meaningful use measures
ELR results

• 30 laboratories have converted to MU compliant HL7 2.5.1 feeds
• Converted internal processes to receive HL7 2.5.1 from NYS allowing the receipt of additional data elements
• HL7 2.5.1 supports better linking of susceptibilities to parent results - important for antibiotic resistant organisms
Gaps in ELR that may be filled by Electronic Case Reporting (eCR) from EHRs

<table>
<thead>
<tr>
<th>ELR doesn’t provide:</th>
<th>ELR has incomplete information on:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• History of Present Illness</td>
<td>• Race</td>
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<tr>
<td>• Reason for Visit</td>
<td>• Ethnicity</td>
</tr>
<tr>
<td>• Date of Onset</td>
<td>• Pregnancy</td>
</tr>
<tr>
<td>• Diagnoses</td>
<td></td>
</tr>
<tr>
<td>• Symptoms</td>
<td></td>
</tr>
<tr>
<td>• Medications administered</td>
<td></td>
</tr>
<tr>
<td>• Immunization status</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Discharge date</td>
</tr>
<tr>
<td></td>
<td>• Preferred language</td>
</tr>
<tr>
<td></td>
<td>• Occupation</td>
</tr>
</tbody>
</table>
Electronic case reporting (eCR) background

• Case reports from Electronic Health Records (EHRs) to public health agencies for disease surveillance and case work
  • Mostly automated, but can also be initiated manually

• Received $100k grant from Public Health Informatics Institute (PHII)
  • Funded one contracted software developer for ~1 year
  • Shared design documents, database, and source code between NYC DOHMH and NYS DOH
  • Set up a private source code repository for collaboration

• Work in progress; finishing initial production implementation
Digital Bridge project

• Vision: “To ensure the health of our nation through a bi-directional information exchange between health care and public health”

• Current Project: A multi-jurisdictional approach to electronic case reporting (eCR)

• Why Digital Bridge?
  • Interoperable, scalable, and multi-jurisdictional
  • Leverages existing technology standards
  • Lays the foundation for bidirectional exchange of information
Digital Bridge – NYC & NYS Collaboration

• Each Digital Bridge site must include 3 partners
  • Department of public health
  • EHR vendor
  • Healthcare provider site

• NYC DOHMH and NYS DOH jointly applied to be a Digital Bridge implementation site

• Public Health worked with NYS Medicaid office to incorporate projects into the IAPD to CMS
eCR project status and plans for 2019-2021

- Finish implementing Electronic Case Reporting with Institute for Family Health, EPIC, and other eCR partners
- Analyze Electronic Case Reporting data quality
- Onboard additional EHRs and healthcare facilities
- Deliver Electronic Case Reporting data to disease registries
- Digital Bridge has incubated the eCR use case and is now transitioning the operations of eCR to Centers for Disease Control (CDC), the Association of Public Health Laboratories (APHL), and the Council of State and Territorial Epidemiologists (CSTE), who will lead national scale-up and eCR implementation
Challenges to public health access to 90/10 funds

- Make the right contacts and build partnerships
- Multiple competing priorities at all agencies
- Planning, coordination, and paperwork between agencies
- Time, effort, and attention to detail
- Communication and flexibility between partners
- Progress is iterative and incremental
- Public health projects that are promoting interoperability need sustainable source of funds
Post-HITECH funding for public health

In November 2018, ONC presented on Medicaid HIE/Interoperability Funding Sources, highlighting Medicaid Information Technical Architecture (MITA) System Funding, which will continue after HITECH funds expire.

<table>
<thead>
<tr>
<th></th>
<th>HITECH Act</th>
<th>MITA System Funding (Medicaid Information Technical Architecture)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration</strong></td>
<td>Ends in 2021</td>
<td>Ongoing</td>
</tr>
<tr>
<td><strong>Funding for design, development &amp; implementation</strong></td>
<td>Yes, 90% match</td>
<td>Yes, 90% match</td>
</tr>
<tr>
<td><strong>Operational Support</strong></td>
<td>No</td>
<td>Yes, 75% match</td>
</tr>
<tr>
<td><strong>On-boarding support</strong></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Policy basis for funding</strong></td>
<td>Meaningful Use objectives &amp; measures</td>
<td>Business processes</td>
</tr>
</tbody>
</table>

Post-HITECH funding for public health

Must be a component of the State MMIS

- An MMIS is “an integrated group of procedures and computer processing operations (subsystems) at the general design level to meet principal objectives.” – Medicaid.gov¹
- As described in a July 2000 letter to State Medicaid Directors, the enhanced matched rates are available to immunization registries that are components of the State MMIS to the extent that the registry services Medicaid beneficiaries and meets specifications set forth in the letter. – State Medicaid Director’s (SMD) #10-016²

Must support a MITA “business process”

- …a state may also consider developing or enhancing PDMPs in support of the ‘Manage Registry’ business process in MITA, which allows states to support specialized registries that receive an individual’s health outcome information, prepare updates for a specific registry (like the PDMP), and supply information in response to inquiries. – SMD Letter #16-003³
- CMS emphasizes the importance of dynamic provider directories with, as appropriate, bidirectional communications to public health agencies and public health registries. – SMD Letter #16-003³
CIR supports Medicaid Managed Care Organizations (MMCO)

• In 2018, 9 MMCOs exchanged immunization information with CIR
• 648,897 MMCO patient records were searched
• 591,454 (91.15%) were found and all immunizations were returned
• Data is used for Health Effectiveness Data Information Set (HEDIS) and NYS Quality Assurance Reporting Requirements (QARR)
• Also perform patient reminder/recall when vaccines are due
More Health Information Exchange: Potential future projects that promote interoperability with NYC DOHMH

• Integrate EHR patient, disease surveillance, and health information from public health clinics

• Build one FHIR interface for all data exchange with Disease Control programs
  • Support data exchange with payers and ACOs
  • Enable queries from external partners to disease surveillance systems
  • Disease surveillance system integrated queries to provider EHR vendor hubs or HIEs in support of public health surveillance case work
  • Provide clinical decision support to data exchange partners
  • Support consumer engagement through patient portals
1. Reporting and query service responds to authenticated reporting and search requests

2. MPI services and person matching service

Database queries can be initiated by any system and joined to any other system, via linked databases through the DDC-MPI

3. MPI database
As we approach the end of HITECH funding, public health must work with State Medicaid Agencies, ONC, and CMS to sustainably provide public health services to support state Medicaid enterprise systems.

**Federal Agencies**
- What guidance can federal partners provide to state Medicaid agencies re: working with public health?
- What resources are available to state Medicaid agencies for preparing and developing Advanced Planning Documents (APDs) **inclusive of state and local public health**?

**State Medicaid**
- Where do state and local public health fit into the State Medicaid Health IT Plan?
- What is the best forum and approach for coordinating with public health?

**Public Health**
- How can state and local public health plan together with the State Medicaid Office?
- How can public health functions (e.g., disease and immunization registries) integrate with the state MMIS? What are the pros and cons?
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