Integrating Multiple Statewide Public Health Programs

New York State Immunization Information System (NYSIIS)

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NYSIIS Background

• NYSIIS focus is on NYS residents outside of NYC
• Began in mid 1990 as a regional distributed systems
• 2006 Public Health Law passed
  • Mandated reporting for children under 19
  • Adults by consent
• January 2008 – NYSIIS
NYSIIS Integration

- NYS birth records
- Lead Poisoning and Prevention Program
- Early Hearing Detection and Intervention
- NY Citywide Immunization Registry
- NYC birth records
- Communicable Disease Electronic Surveillance System (CDESS)
Impact of integrating of multiple public health programs

- Technical
- Legal
- Data Quality
- Governance
- Maintenance
A Simple NYSIIS Data Flow Diagram
A Simple NYSIIS Data Flow Diagram
NYSIIS and Birth Records

• Average 120,000 birth per year
• Seed NYSIIS system with demographic and birth doses
  • Births from 2004 forward
  • Began upload in Jan 2009
• Daily uploads
• Create population base for those born in NY state hospitals (excluding NYC)
Birth Records – Challenges

• Technical
  • Match to existing NYSIIS format for demographics and immunizations
  • Update and Adoption Rules

• Legal
  • Already included in PHL
Birth Records – Challenges

- Data quality
  - Birth Record considered data standard (legal document)
  - Requirement to accept all data with unique birth ID into NYSIIS
  - NYSIIS users unable to change date of birth
  - Cannot delete

- Unintended Benefit
  - Identified errors in birth records that had not been previously identified
A Simple NYSSIIS Data Flow Diagram
Lead Poisoning Prevention Program (LPPP)

- Traditionally lab results submitted to the NYS LPPP through Lead Web case management system
- 2009 technology developed to allow physicians to perform lead screening in office
- PHL amended requiring providers to report to LPPP
LPPP con’t

• No existing method enabling these providers to submit data

• Integration with NYSIIS allowed LPPP to utilize an existing system
  • Physician Office Laboratory (POL) add lead tests directly into NYSIIS
  • LeadWeb data submitted by LPPP via data exchange (daily uploads)
  • Providers able to view lead screening history along with immunization history
LPPP Challenges

• **Technical**
  - Modification DX file format
  - Allow for incoming and outgoing lead data files
  - Create new rules specific to Lead data
  - Modify/create user rules
  - Create new data tables and linkages

• **Legal**
  - Amendment to PHL
LPPP Challenges con’t

- Data Quality
  - De-duplication and matching based on limited information
  - Analysis of children with lead screen but no immunizations
  - Duplication of lead tests

- Benefit
  - Allowed both systems to identify children who were previously missed
A Simple NYSSIIS Data Flow Diagram

NYS Vital Records
- Demo
- Imms
- Hearing

NYS Lead Screening Program
- Demo
- Lead

NYSSIIS
- Demo
- Imms
- Lead
Early Hearing Detection and Intervention (EHDI) Program

- Statewide program (NYS and NYC)
- Traditionally held aggregate level data
- 2010 law changed to allow patient level information to be captured
  - Existing system did not contain demographic information
  - Need to create method for
    - Audiologist to input hearing screening data
    - Providers to view screening data
    - At EHDI acquire hearing data from birth record
EHDI con’t

- EHDI remains separate from NYSIIS
  - Policy and concern over single vendor dependency
  - Hearing screening tests maintained in EHDI system
  - Linked through demographics
  - Providers unable to view a full report in one location
- EHDI is statewide including NYC
  - NYC birth records required
EHDI Challenges

• Technical
  • Wish to not be dependent upon one vendor
    • Utilized NYS DOH IT for EHDI
    • Existing NYSIIS vendor for NYSIIS
  • Create link across firewalls
  • Create EHDI data system
  • Link providers to patient within EHDI
  • NYC sends 1 file
    • DOH creates 2 files (EHDI and NYSIIS)
    • maintaining data integrity
EHDI – Challenges con’t

• Legal
  • EHDI maintained outside of NYSIIS - change required to PHL

• Data Quality
  • Effects of modifying or merging patient data in NYSIIS
  • Addition of NYC Birth Data
  • New provider roles (audiologist)
A Simple NYSSIIS Data Flow Diagram
NYC Birth Data

- In planning/testing
- One file containing demographics and hearing screening results from NYC Electronic Vital Events Registration System (EVERS)
- To be added to NYSIIS per EHDI requirements
  - Implement specific NYC rules
- Birth data 2011-present
NYC Birth Records- Challenges

• Technical
  • Creating 2 files from 1
  • File transport

• Legal
  • no change to PHL although MOU required

• Data Quality
  • Data matching
  • Adoptions and deletions
  • Distinguish births from NYC versus NYS
New York Citywide Immunization Registry

- Data sharing between NYS and NYC
- Share information on ‘border’ children
- Plans to move forward with full data sharing
NYCIR Integration Challenges

- **Technical**
  - Data transport
- **Legal** – no change in PHL
- **Data quality**
  - Matching
  - Bidirectional data sharing
  - Matching rules
A Simple NYSIIS Data Flow Diagram

- NYS Vital Records
  - Demo
  - Imms
  - Hearing

- NYS Lead Screening Program
  - Demo
  - Lead

- NYSIIS
  - Demo
  - Imms
  - Lead

- CIR
  - Demo
  - Imms

- NYS Hearing Screening Program
  - Demo
  - Hearing
Communicable Disease Electronic Surveillance System

• Not a true ‘integration’ as CDESS not submitting to or sharing data with NYSIIS

• Utilizing query function to ‘pull’ data from NYSIIS
  • Query immunization records for children who have or have been exposed to specific diseases
Positives of integration

• Add to existing IIS population
• Use available data and existing data system without rebuilding
  • Savings in money
  • Savings in staff resources
• Additional checks to data quality
• Addition of users who may have been ‘missed’
Difficulties of Integration

• Modification of existing system
• Adjusting to requirements of programs outside of immunization
• Increased responsibility of IIS staff
• Expanding users in IIS
  • Training
• Coordination of contract
A Simple NYSIIS Data Flow Diagram
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Questions

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