

# Integrating Multiple Statewide Public Health Programs

AIRA 2013 National Meeting

## **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

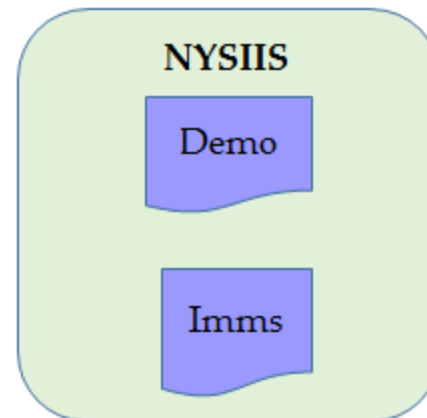
- NYS birth records
- Lead Poisoning and Prevention Program
- Early Hearing Detection and Intervention
- NY Citywide Immunization Registry
- NYC birth records
- Communicable Disease Electronic Surveillance System (CDESS)



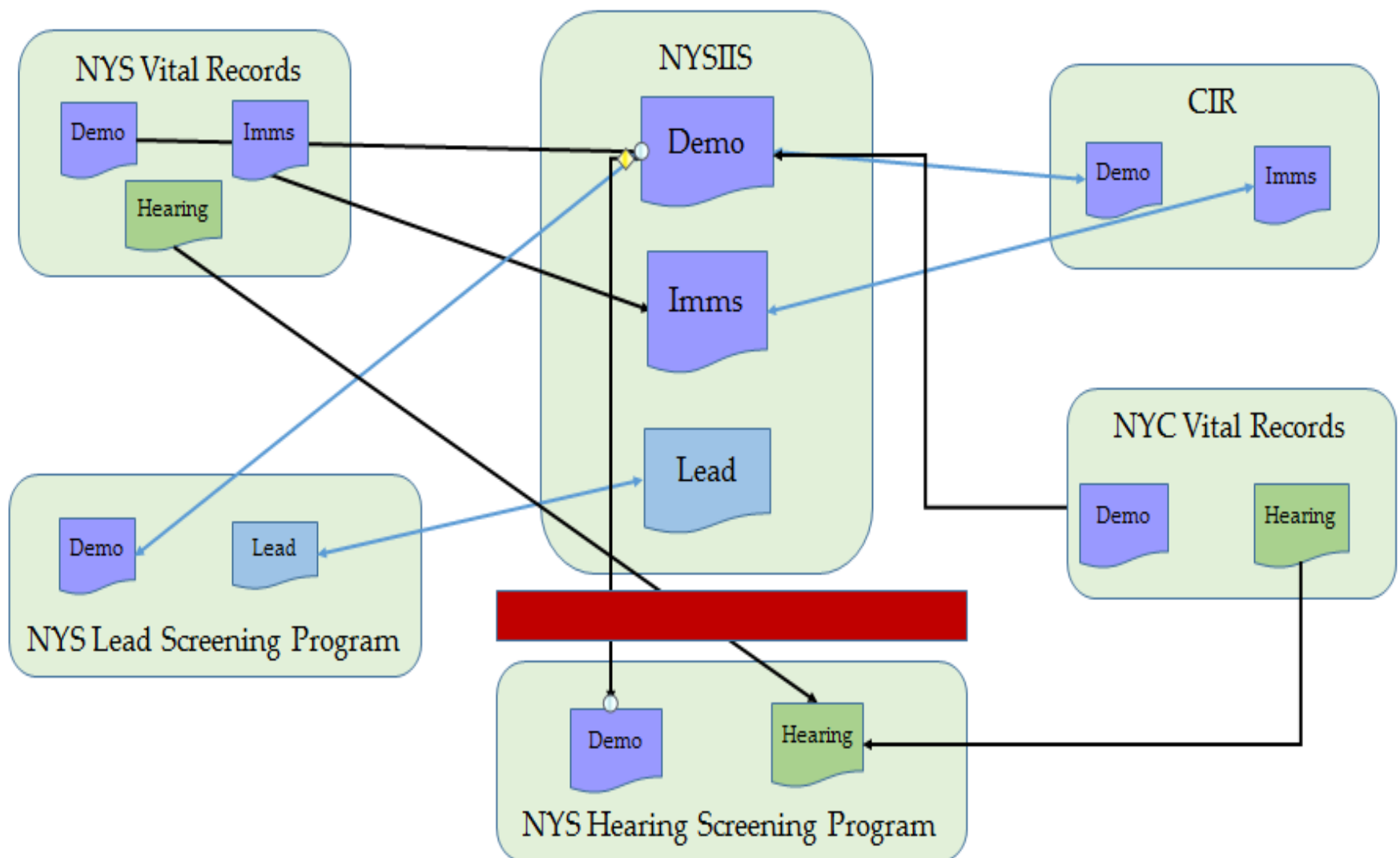
# Impact of integrating of multiple public health programs

- 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

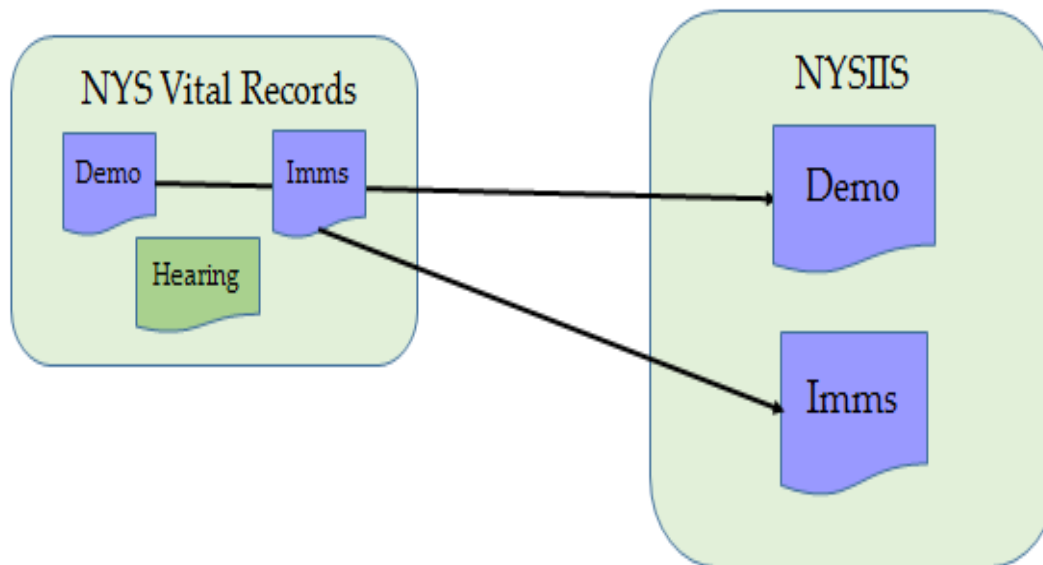




# Birth Records – Challenges

- 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 NYSIIS 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

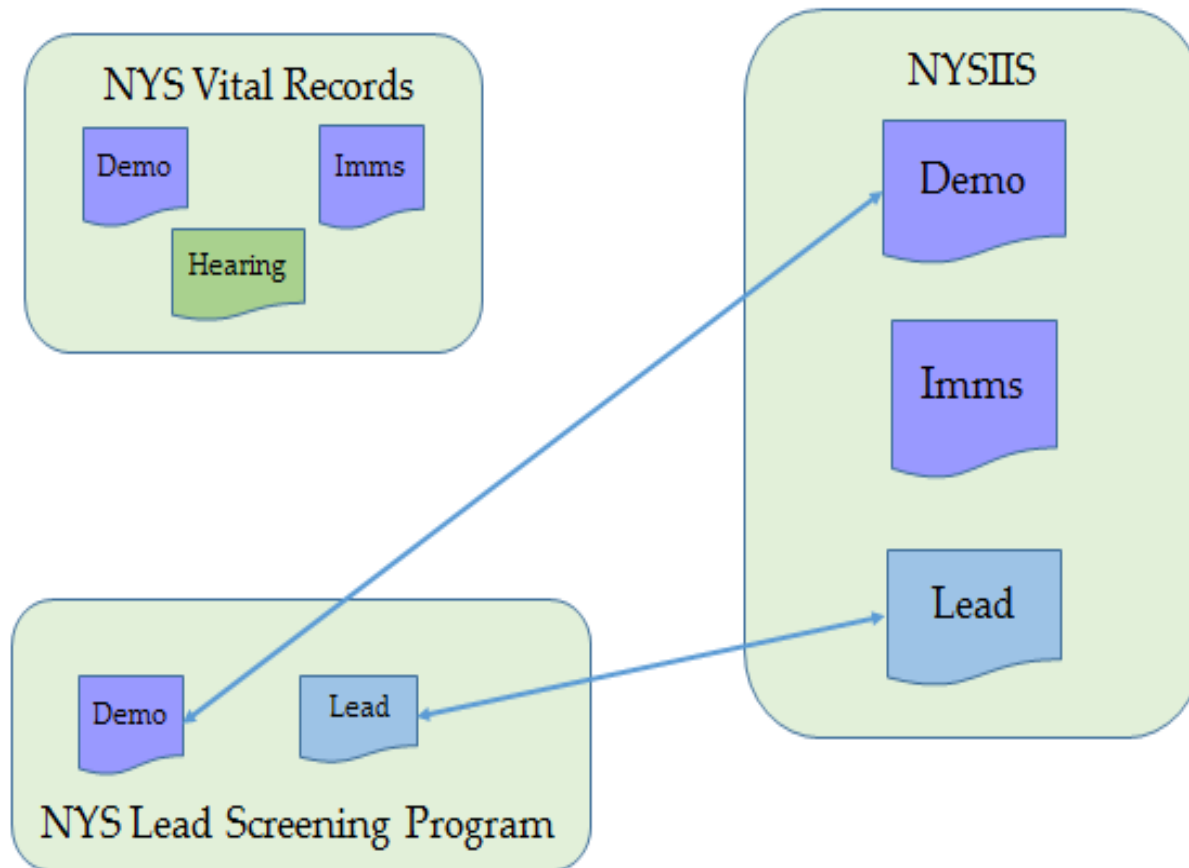
- Technical
  - Modification DX file format
  - Allow for incoming and outgoing lead data files
  - Create new rules specific to Lead data
  - Modify/create user rules
  - Create new data tables and linkages
- Legal
  - Amendment to PHL



# 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 NYSIIS Data Flow Diagram





# 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

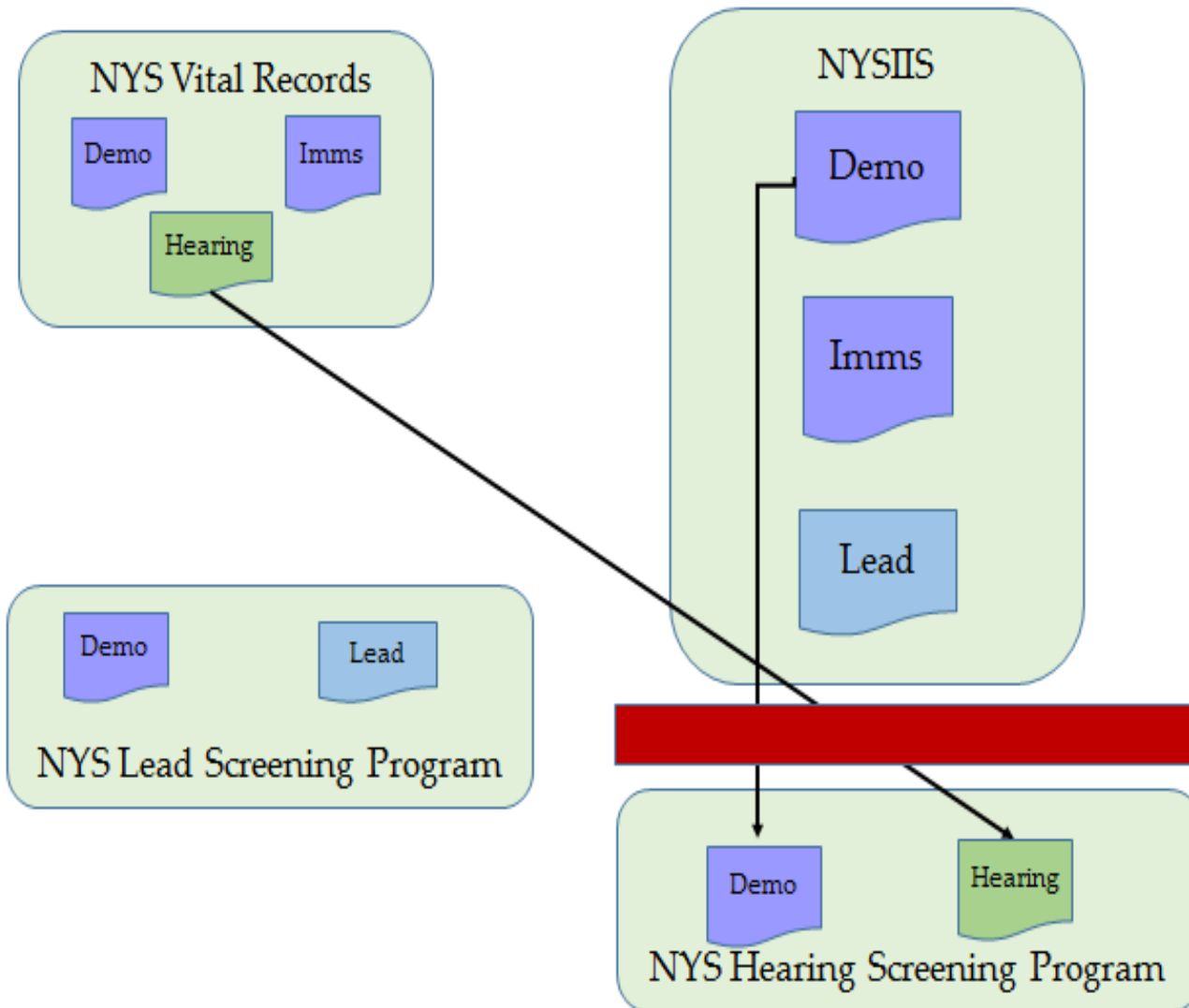
- Technical
  - Wish to not be dependent upon one vendor
    - Utilized NYS DOH IT for EHDI
    - Existing NYSIIS vendor for NYSIIS
  - Create link across firewalls
  - Create EHDI data system
  - Link providers to patient within EHDI
  - NYC sends 1 file
    - DOH creates 2 files (EHDI and NYSIIS)
    - 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 NYSIIS Data Flow Diagram





# NYC Birth Data

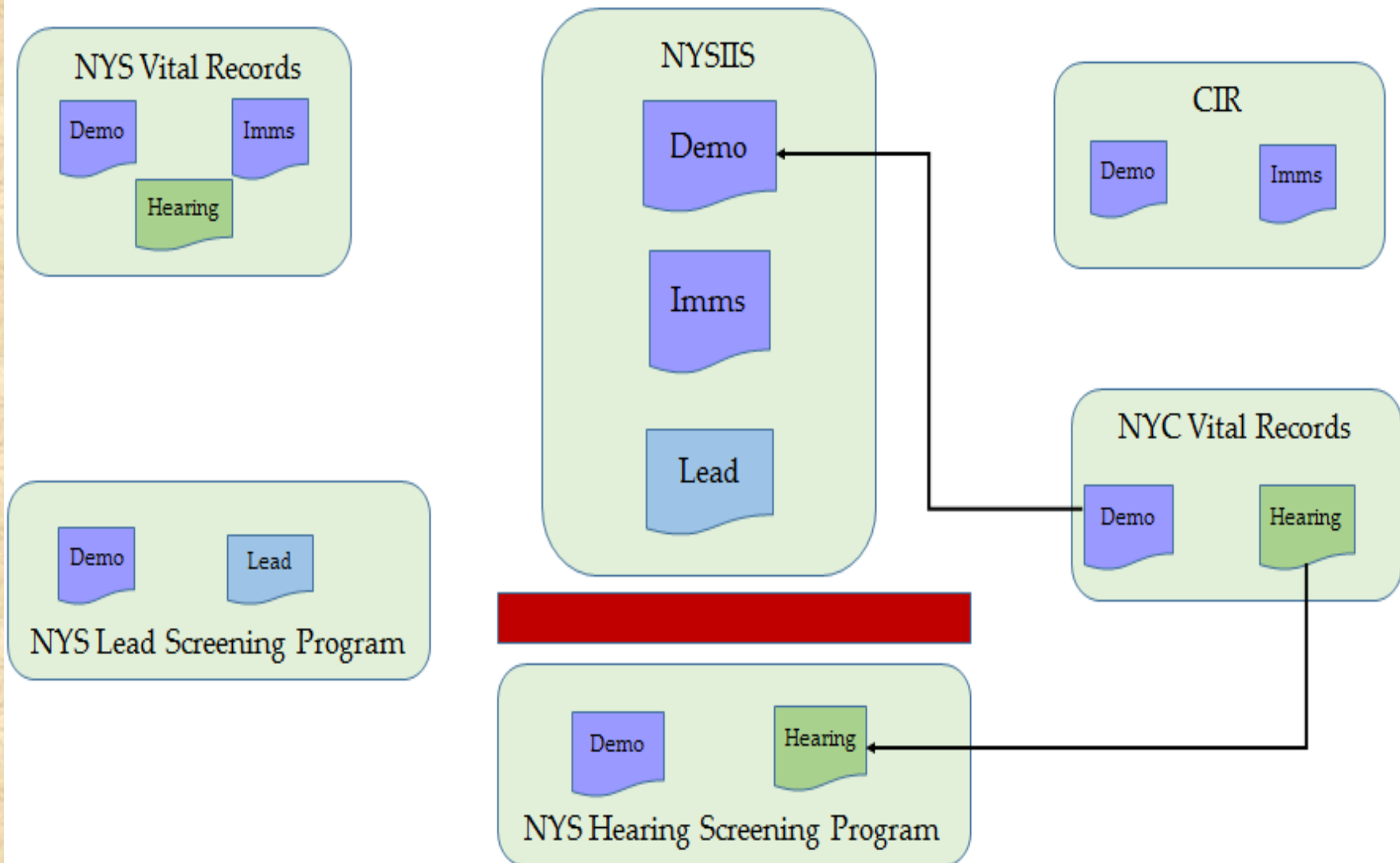
- In planning/testing
- One file containing demographics and hearing screening results from NYC Electronic Vital Events Registration System (EVERS)
- To be added to NYSIIS per EHDI requirements
  - Implement specific NYC rules
- Birth data 2011- present



# 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

# A Simple NYSIIS Data Flow Diagram





# New York Citywide Immunization Registry

- Data sharing between NYS and NYC
- Share information on 'border' children
- Plans to move forward with full data sharing

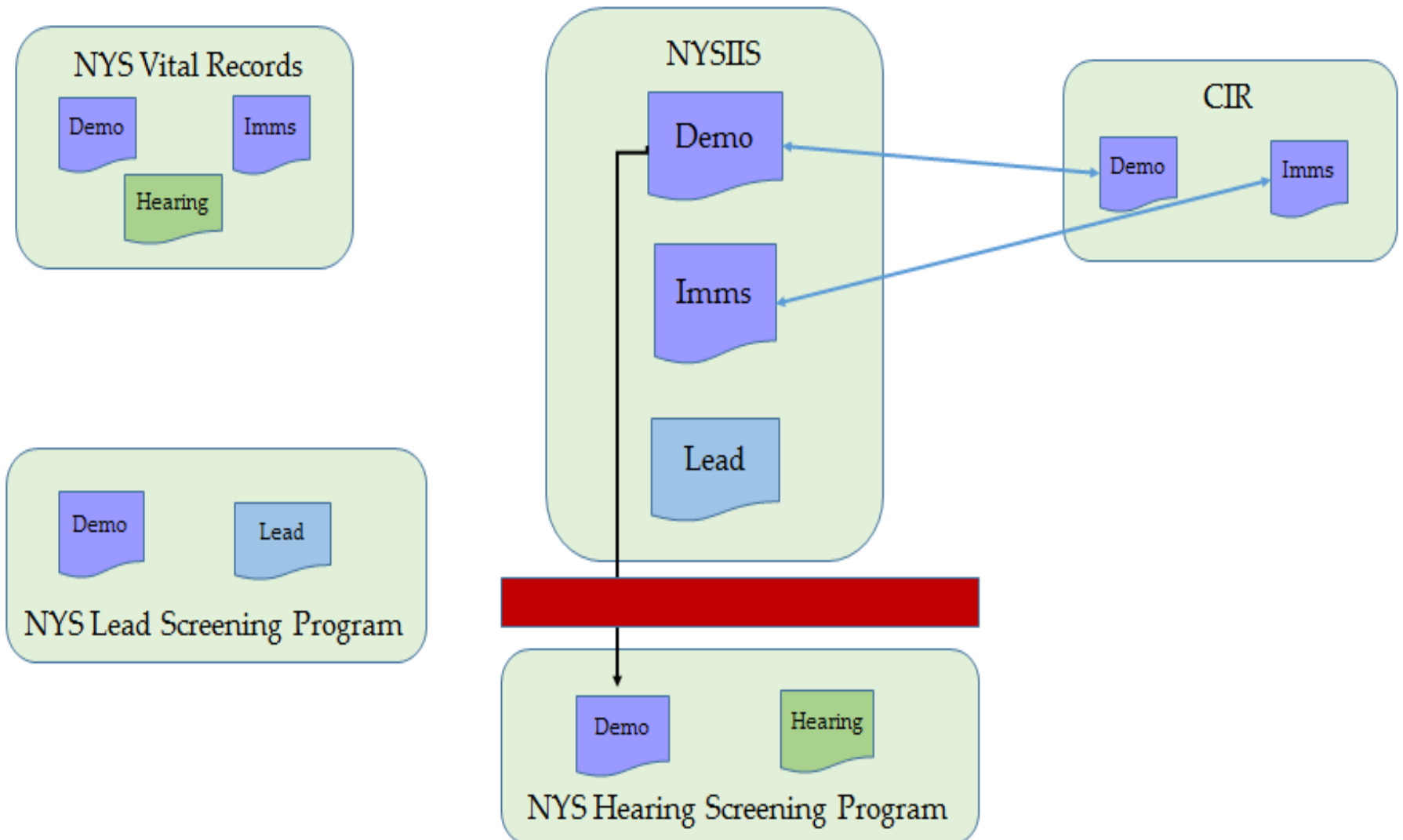




# NYCIR Integration Challenges

- Technical
  - Data transport
- Legal – no change in PHL
- Data quality
  - Matching
  - Bidirectional data sharing
  - Matching rules

# A Simple NYSIIS Data Flow Diagram





# 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





# Acknowledgments

- NYS Birth Record
  - Charles Stearns
  - Krishna Chaganti
- Lead Poisoning Prevention Program
  - Nancy Minch
  - Cecelia O'Shea
  - Cory Tice
- EHDI
  - Justin Hausmann
  - Regina Bride
- NYC
  - Angel Aponte
  - Amy Metroka
- NYS DOH ITS
  - Karolina Schabses

# Questions



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