

## New York City Citywide Immunization Registry (CIR): Introduction and Updates

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## Overview of Today's Presentation

- Description of the Citywide Immunization Registry (CIR)
- Uses of CIR
- Vaccine uptake
- Interoperability
- Adult reporting
- Challenges/Future projects
- Demonstration
  - Reminder/recall
  - CH205 (school, camp and daycare form)



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## CIR Mission

- To improve the immunization status of all NYC children and adolescents by consolidating immunization information and sharing it with health care providers, families, and agencies concerned with children's health



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### CIR Background

- Started in 1997
- Vital records (birth certificates) loaded twice a week
  - All NYC births from 1996 forward
  - ~125,000 births annually
- Mandatory reporting of immunizations administered to individuals 0-18 years
  - City Health Code, State Law
  - Expanded to include adolescents in 2005
  - Voluntary reporting for adults



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### CIR Status

- 1,813 pediatric provider sites
  - 85% (1,535) participate in Vaccines for Children (VFC) program
- 93% of providers report regularly
- All electronic reporting: Online Registry, batch file transfer, HL7 Web service (real-time, bidirectional)
- Increase in reporting: contains 4.7 million people and 58 million immunizations



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### CIR Access

- Limited to providers, parents, legal guardians or custodians, authorized agencies (i.e., MCOs, WIC, schools, child care)
  - Online (provider, authorized agencies only) – 24/7
  - Telephone, Fax, Mail requests: Hotline: M - F, 9 am - 5 pm
  - Batch file data exchange (providers, MCOs,)
  - Real-time data query via HL7 Web Service (providers, schools)
- DOHMH programs (Immunization, Lead, Early Intervention)



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### CIR Functions and Goals

- Consolidate immunization records across providers
- Make records available to providers at time of visit to reduce “missed opportunities”
- Offer providers recommendations of immunizations due (clinical decision support)
- Measure uptake of new vaccines and coverage and give providers regular feedback
- Facilitate reminder/recall by providers, MCOs and improve screening/referral by WIC, schools




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### Use of CIR to Support Immunization Program Functions

- VFC vaccine management and accountability
- AFIX – coverage assessments
  - All assessments are conducted using CIR data
- Communications
  - Blast email, fax, quarterly reports
- School immunization compliance
- Surveillance and Perinatal Hepatitis B Prevention
- Emergency response
  - Most recently H1N1: provider registration, vaccine distribution, reporting




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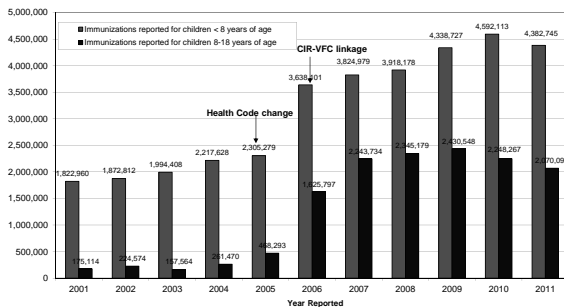
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### Number of Immunizations Reported to the CIR 2001-2011




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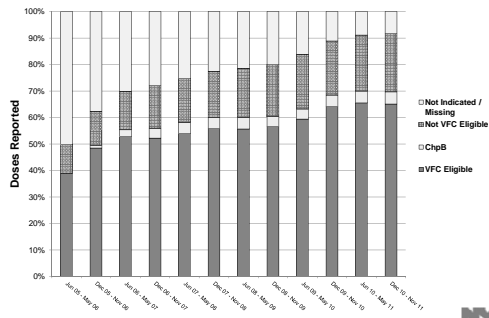
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### VFC Eligibility Capture: Of All Doses Reported, Percent with VFC Eligibility Indicated




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### Vaccine Uptake




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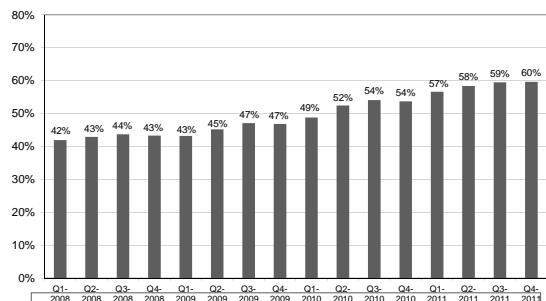
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### Percent of Children Ages 19-35 Months with 4 DTaP, 3 Polio, 1 MMR, 3 Hib, 3 HepB and 1 Varicella (4:3:1:3:3:1) Vaccines



Data sources: NYC DOHMH Citywide Immunization Registry as of March 23, 2012, NYC DOHMH Epiquery (population estimates). The 2009 population denominator was used for 2010 and 2011 rates because newer estimates were not available at the time of slide preparation. For comparison, the 2010 NYC coverage for 4:3:1:3:3:1 was 65.1, 27.8% according to the National Immunization Survey (NIS).




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Interoperability



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Real-time HL7 Reporting

- Bi-directional: EHR users can send a query message to the Web Service and receive back a message with a patient's entire immunization history + clinical decision support
  - EHR displays this information to the user in the user interface
  - Takes 2-3 seconds
- Adoption of this service partly driven by the Meaningful Use incentive program



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Benefits of Real-time Bi-directional

- Allows clinicians to send and receive immunization data without leaving their EHR
- Eliminates double data entry
- Delivers up to date decision support to the EHR
- Allows providers to see errors in immunization transactions immediately
- Will reduce missed opportunities and over-immunization
- Will improve documented coverage rates



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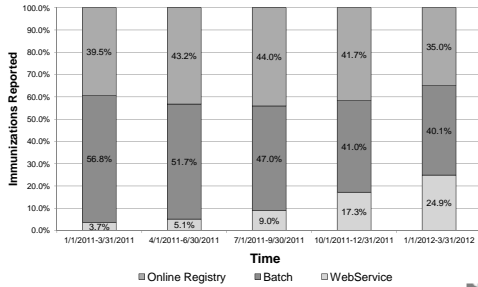
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### Immunizations Reported by Method of Reporting: January 2011-March 2012




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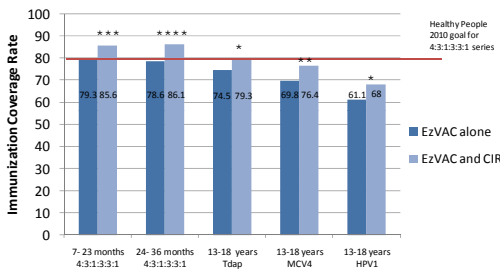
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### Change in Immunization Rates: Columbia- Presbyterian Pediatrics



\* P < 0.05; \*\* P < 0.01; \*\*\* P < .001; \*\*\*\* P < 0001

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### Current Status

- 240 provider sites connected to the Web Service in production (including 16 large hospitals)
  - 114 are bi-directional
- 6 EHR vendors in production: Office Practicum, MDLand, Quadramed, EPIC, Cerner, Allscripts
- 5 EHR vendors in testing: eCW, NextGen, OmniMD, Greenway, Advanced Data Systems
- Successfully integrated with the NYC school system
  - 146,112 students had 1,028,934 CIR immunizations added to school records
  - 134,347 students (92%) had a CIR record




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## Adult Immunizations

- Benefits of reporting to CIR
  - Expands immunization information availability
  - Adults may see an internist as well as specialists for their care
  - Tracking completion of 3-dose series, for example Hep B or HPV vaccines or receipt of PPSV
  - Lifelong access, for example, as an adult changes jobs or goes back to school
  - Access to decision support
- Quality improvement initiatives
  - Influenza vaccine



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## Challenges for CIR

- Duplicate records: patient and vaccine levels
- Completeness of reporting
- Inter-, intra-state data exchange
- Other data quality issues
  - Improve reporting of manufacturer and vaccine lot numbers, patient VFC eligibility
- No mandate for reporting of adult immunizations – opt-out policy under consideration



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## CIR Future Projects

- Expand and upgrade HL7 Web service
- Vaccine barcoding pilot
- Hospital newborn hearing screening results in Online Registry
- Child Medical Form (CH 205) enhancements
  - Provider electronically submit to DOHMH
  - Data available to Child Care, School Health
- Add e-mail and text message capability
- Require reporting of adult immunizations



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Demonstration



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Thank you  
Questions?



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