

Using an Immunization Information System for Program Management, New York City

AIRA Webinar

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Outline

- Background: Citywide Immunization Registry (CIR)
- Seminal event: linking VFC vaccine distribution to CIR reporting
- Increased use of CIR for program management
 - 32/35 (91%) grant objectives
 - Highlight program efficiencies and cost savings
- Summary

Background:

Citywide Immunization Registry (CIR)

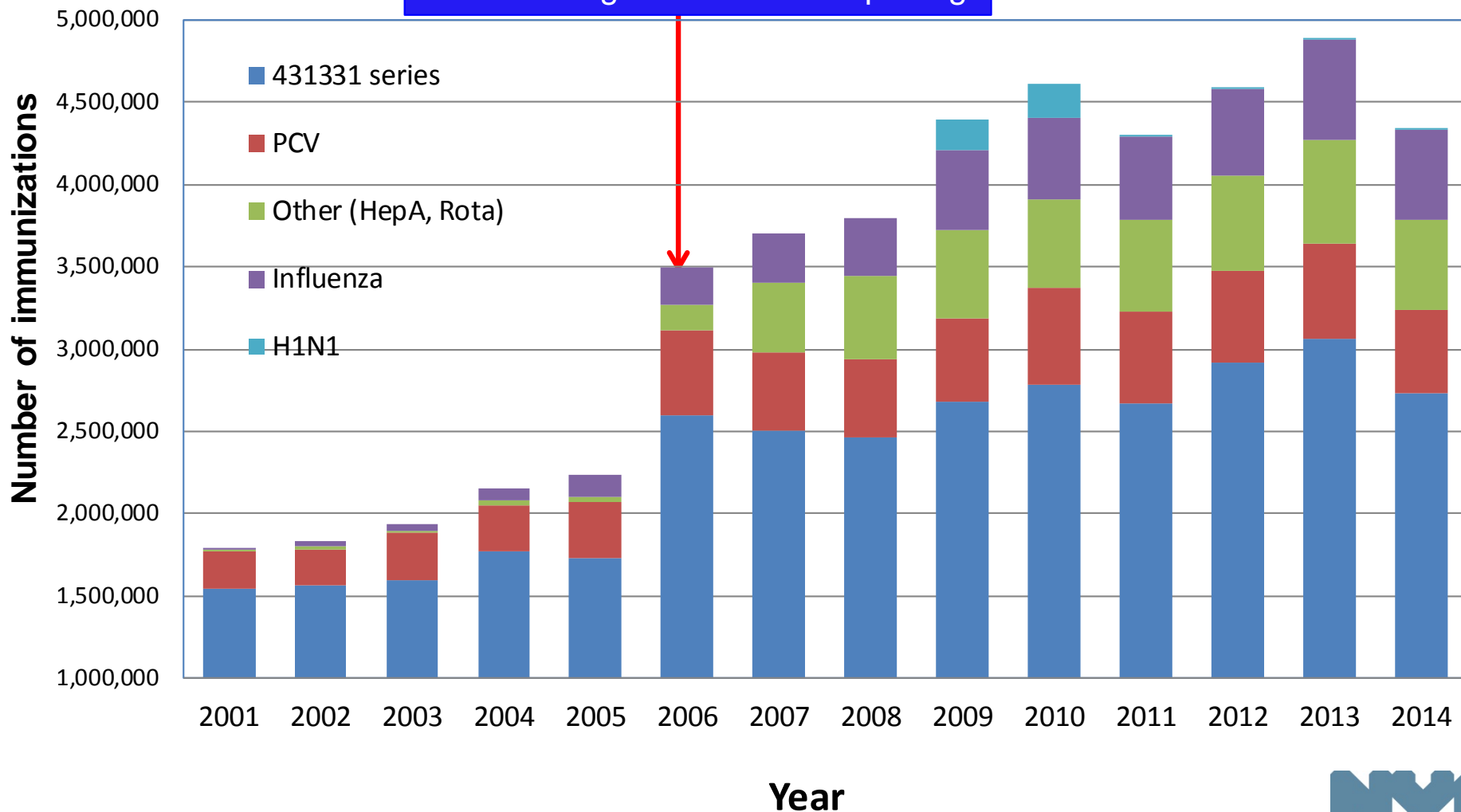
- Started in 1997
- Vital records (birth certificates) loaded 2X/week
 - ~125,000 births annually
- Mandatory reporting of all immunizations administered to children 0-18 yrs, reporting for adults ≥ 19 yrs requires verbal consent
 - City Health Code, New York State Law
- ~1,800 pediatric provider sites
 - >90% report regularly
 - 85% (1,530) participate in VFC

The Challenge of Increasing Reporting to the CIR

- In 2006, linked VFC ordering to CIR reporting
 - Created CIR-generated VFC doses administered report (DAR) for each provider (# doses reported / # doses received)
 - Reduced VFC orders of providers with DAR <80%
- Resulted in large increase in reporting
 - Seen for both young children and adolescents
 - Increase has been sustained

Number of Immunizations Reported to the CIR 2001-2014, Children <8 Years of Age

VFC ordering linked to CIR reporting



Opportunity Knocks

- More complete data allowed increasing use of CIR as the primary data source for program functions as well as for the provider community
 - Unit A: Program Stewardship and Accountability
 - Unit B: Assessing Program Performance
 - Unit C: Assuring Access to Vaccines
 - Unit D: Immunization Information Technology Infrastructure
 - Unit E: Improve and Maintain Preparedness

Unit A:

Program Stewardship and Accountability

- CIR provides data for completion of PES and CAT
 - SCHIP vaccine needs
 - Used to submit quarterly reports of SCHIP vaccine used
 - Number of underinsured children (317 funds)
- DOHMH clinic EMR built on backbone of CIR
 - Provides information on children served under delegation of authority
 - Number of adult doses administered

CIR Supports Functions for VFC Providers

- Annual re-enrollment
 - Provider profile based on actual reporting to CIR
- Vaccine accountability at the dose level
 - CIR generates doses administered reports
- All vaccine ordering done online through the CIR along with reporting returns and wastage
- Vaccine inventory management
 - Pre-populates with VFC vaccine shipped and lot numbers
 - Plans to decrement doses based on CIR reporting

317 Funds for Underinsured Children

- In 2013, >50% cut in 317 vaccine budget
- Prompted us to review which facilities reported seeing underinsured children
- Initially identified those providers reporting >10% of their patients as underinsured
 - Citywide, ~1%-1.5% of children were thought to be underinsured
- Conducted site visits
- Nearly all were misclassifying children with private insurance or those VFC-eligible as underinsured

Results of 317 Vaccine Accountability Efforts

- 88% reduction in number of underinsured children
- 74% reduction in vaccine needs
- Nearly all seen by private providers

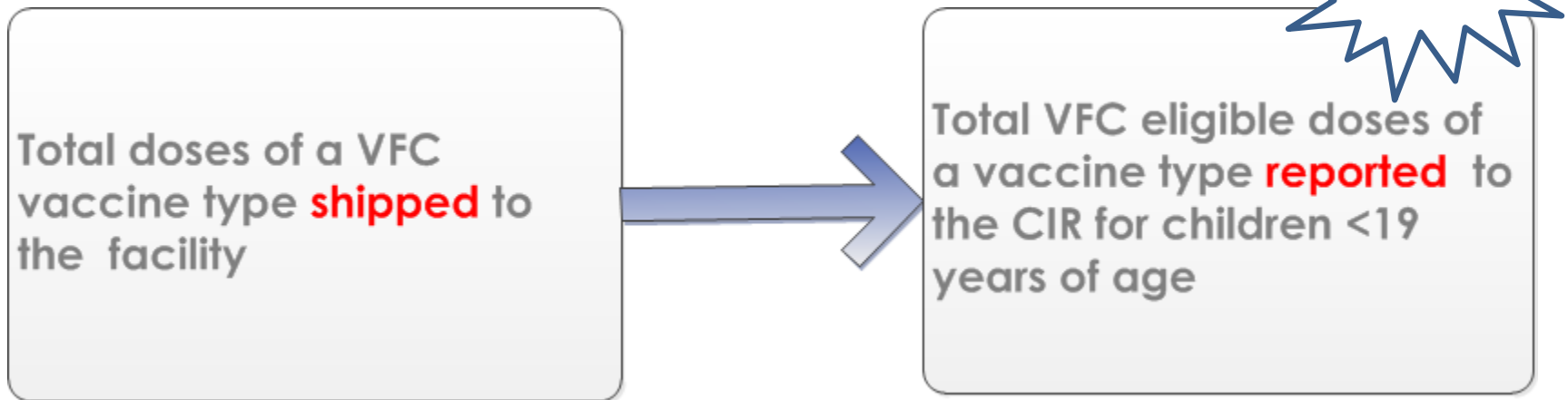
	CAT CY 2013	CAT CY 2015
Number of underinsured children	26,151	3,224
Projected costs of vaccine (317 funds needed)	\$2,198,045	\$580,972

Targeted Outreach to Facilities with Low DARs

- Increased proportion of providers have high DARs
- Systematically target providers that have low DAR and assign CIR staff for follow-up
- Analyze cause of low DAR
 - Poor reporting
 - Ordering too much vaccine
- Intervene as needed
 - May require training for providers/office staff

Change in VFC Vaccine Ordering Recommendations Algorithm

- Algorithm changed July 2014



- Determined the impact of this change

Summary of the Effect of Linking VFC Vaccine Ordering to CIR Reporting Changes

- Comparing July – Dec 2013 to July – Dec 2014 (excluding flu vaccine)
 - Reduced the number of VFC vaccine doses recommended by 21%
 - Reduced the amount of VFC vaccine distributed by 18%
 - Resulted in large cost savings (>\$3M) even after adjusting for small decline in the VFC population
- Result was that we aligned distribution to active vaccine administration
- Did not negatively impact # VFC providers
- Vaccine coverage increased

Unit B:

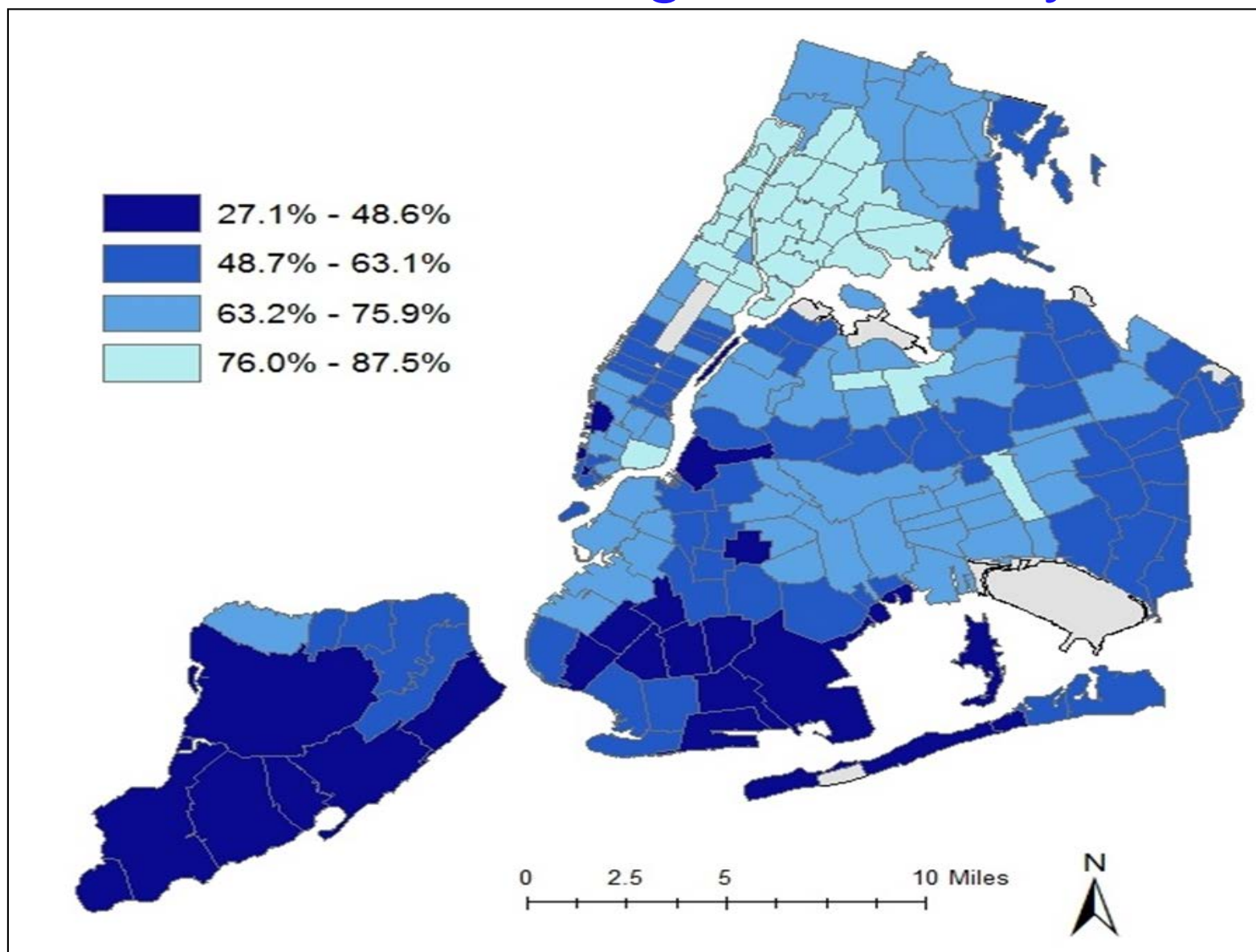
Assessing Program Performance

- Use CIR data to monitor coverage
 - Population-based
- Provides current and timely feedback
- Since June 2006, have been sending all pediatric care providers quarterly coverage feedback reports
- Allows for tracking provider performance measures over time
- School compliance: DOE queries CIR for records
 - For 2013-14, DOE received 6.5M immunizations for 272,120 children

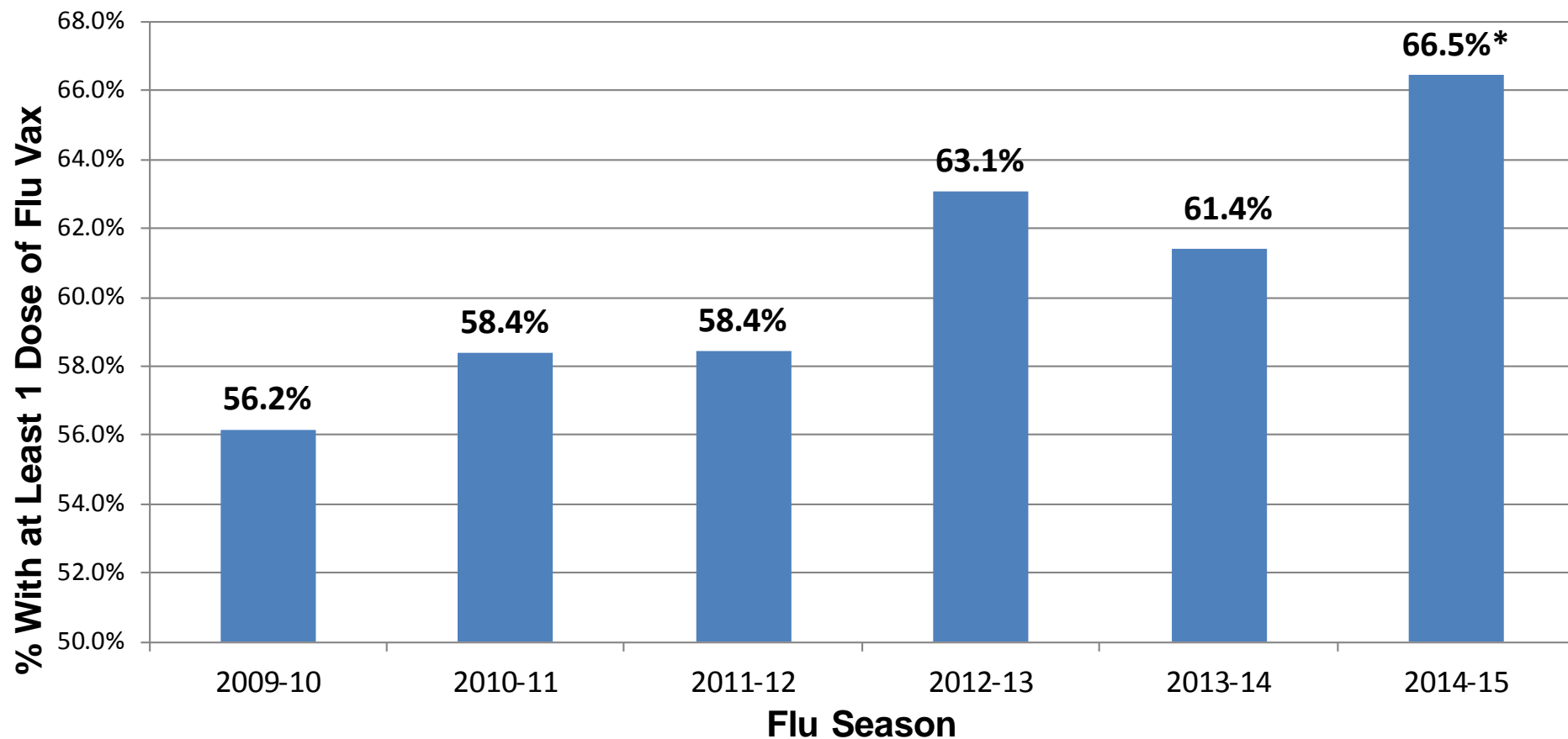
Programmatic Use of Coverage Data

- Target low coverage neighborhoods
 - Identify providers
 - AFIX
 - Daycare audits
- Guidance to providers
 - Communication on missed opportunities and co-administration
 - Targeted communication during back to school 'rush' period
 - Investigate HPV vaccine ordering patterns
- Assess impact of new initiatives

Enables Geographic Assessment of Coverage: HPV Initiation among Females by ZIP Code



Impact of Flu Vaccine Mandate for Children Attending Day Care



*Coverage for children 6 through 59 months of age, as of 5/22/2015, and entered <5/23/2015.

Data sources: NYC DOHMH Citywide Immunization Registry (numerators) and NYC DOHMH Epiquery and 2010 US Census (population estimates).

All AFIX is Conducted through CIR

- Since July 2010, all patients
- Allowed expansion to include adolescents and larger proportion of the population
- Provide recall list and assess coverage 3-4 months later

	2006 (Chart Review)	2014 (IIS)
Number of sites assessed	197 (15% of VFC sites)	415 (30% of VFC sites)
Number of children assessed	8,001*	192,290**

* 24-35 month olds

** 44,568 19-35 month-olds; 147,722 13-17 year-olds

Unit C:

Assuring Access to Vaccines

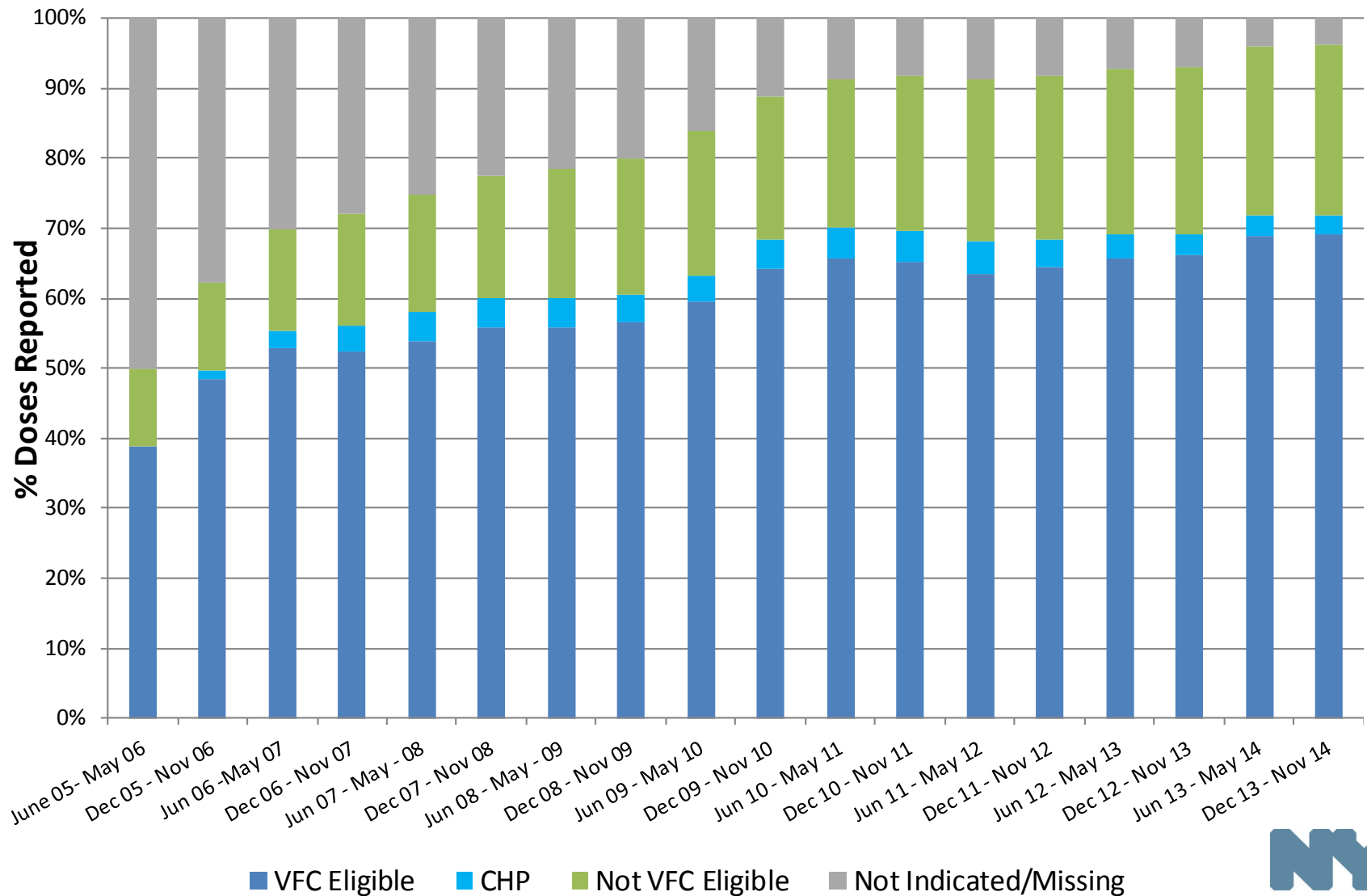
- Perinatal Hepatitis B program
 - CIR provides immunization information for infants being followed by the program
 - Perinatal database queries the CIR and imports the vaccine information
 - Hepatitis B birth doses populated in CIR from the birth certificate
 - Used to track hospital level birth dose coverage
 - Saved significant amount of staff time

Unit D:

Immunization Information Technology Infrastructure

- EHR-IIS interoperability
- Dose level accountability
- VFC eligibility
- VFC ordering and VTrckS
 - All providers order VFC vaccine on line through the CIR
 - Uploaded to VTrcks
 - Linked to inventory management module
 - Recommended ordering quantities based on CIR reporting

VFC Eligibility Capture: Percent of Reported Doses with VFC Eligibility Indicated



Unit E:

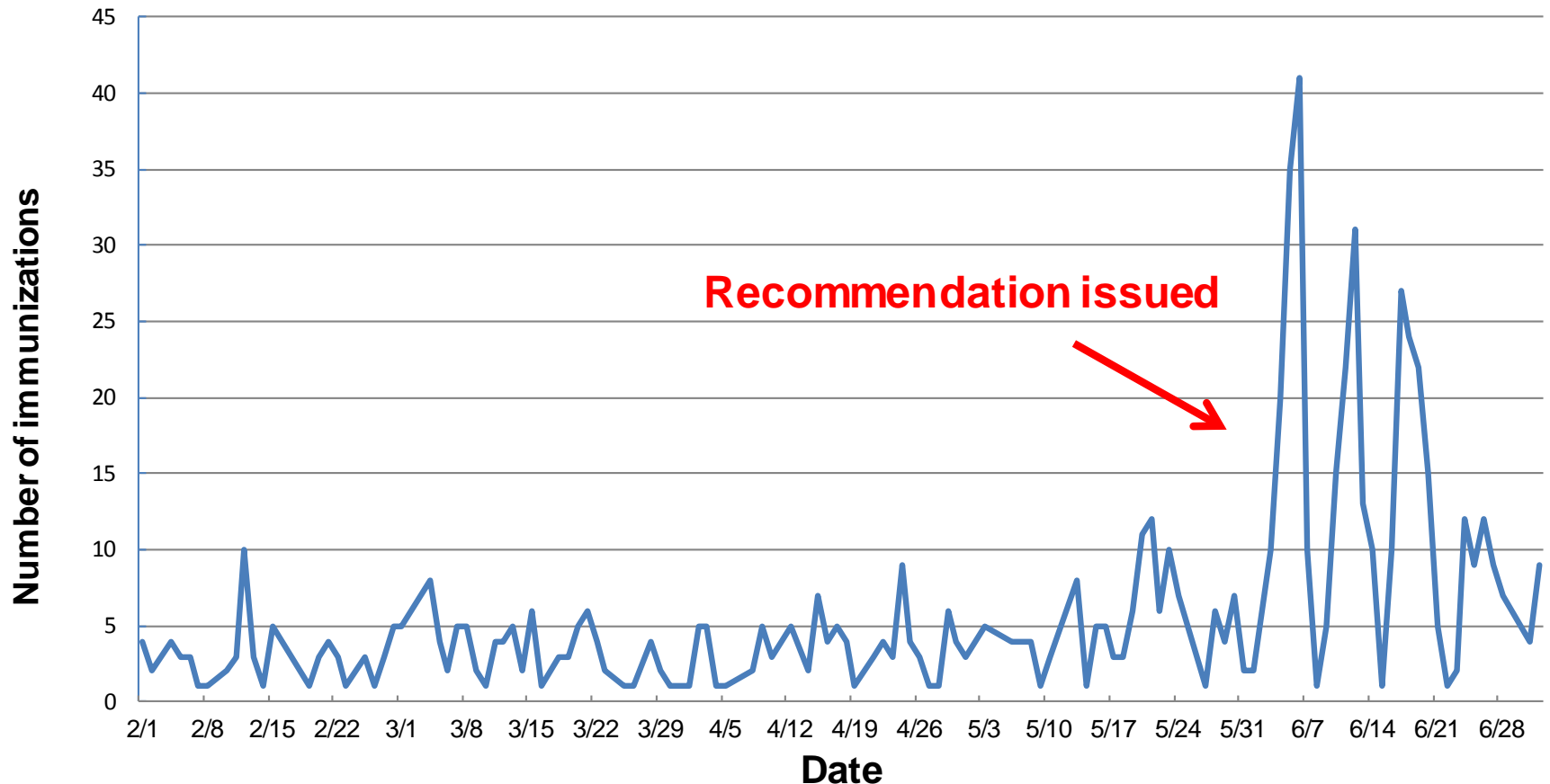
Improve and Maintain Preparedness

- Surveillance and outbreak response
- Emergency preparedness
- Pandemic influenza planning
 - CIR is the basis for registration, vaccine ordering, distribution, re-supply and tracking uptake
 - Vaccine effectiveness
- Seasonal influenza
 - Track uptake and coverage
 - Partnerships with pharmacies on adult vaccination

Use of CIR for Measles Outbreak Response

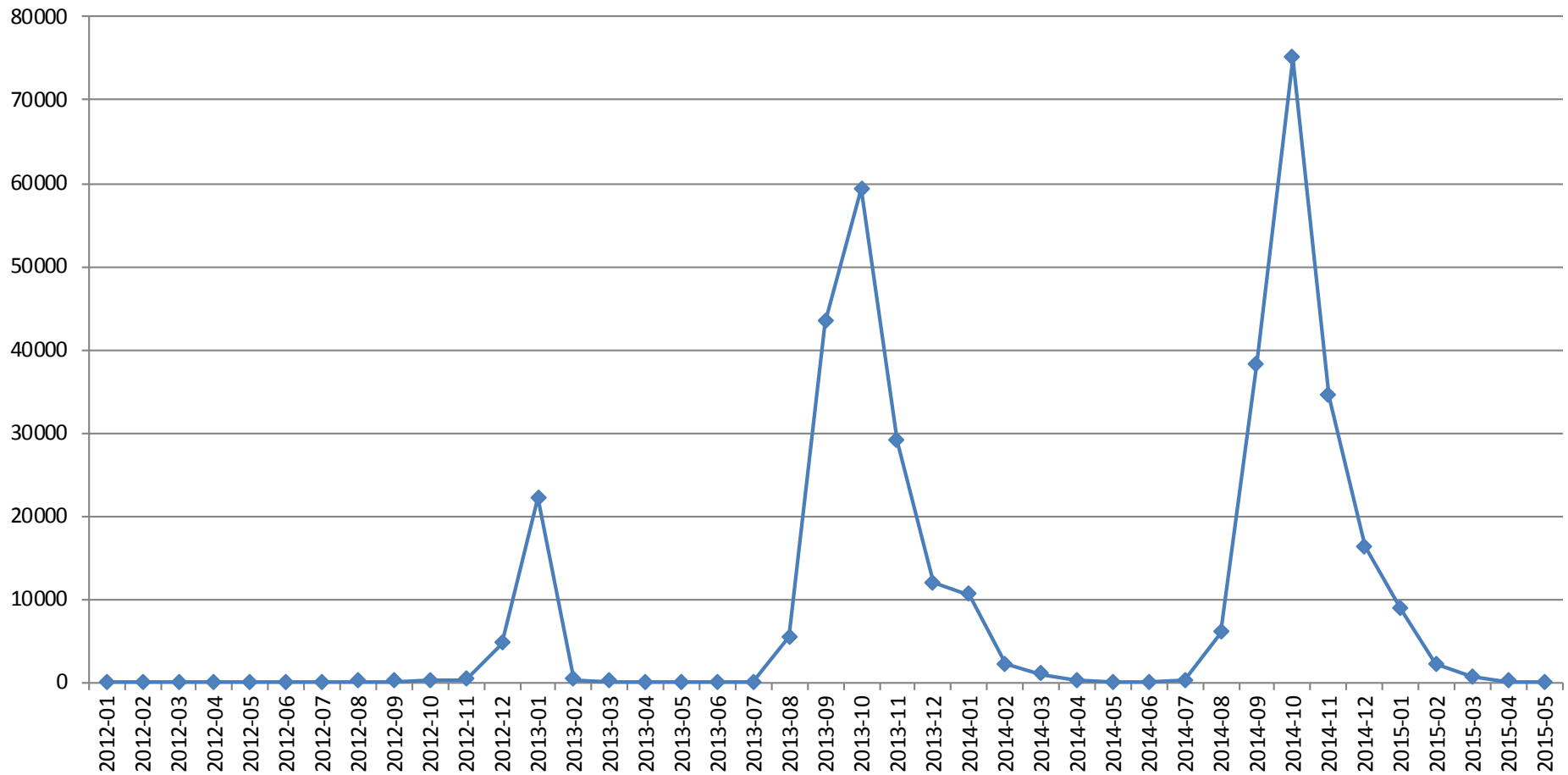
- Send blast email alerts to providers citywide
- Identify pediatric facilities in affected communities (analysis based on ZIP codes)
 - Determine MMR coverage for each facility
 - Generate lists of unvaccinated children
 - Print recall letters and mail to families
- Look up immunization status of cases, contacts
 - Used CIR contact info for outreach
- Facilitate ordering, distribution of additional MMR vaccine to facilities in affected areas

Measles Containing Immunizations Given to Children 180 - 360 days-old by date, NYC



In response to a measles outbreak in Orthodox Jewish communities in Brooklyn on June 4, 2013, the NYC Department of Health recommended that providers administer the first dose of MMR vaccine to all Orthodox Jewish infants aged 6 months and older living in affected neighborhoods. BOI used the CIR to track vaccine uptake in real time.

Effect of Authorizing Pharmacists to Administer Influenza Vaccine



Influenza vaccines doses given at pharmacies and reported to CIR. Pharmacists authorized to administer influenza vaccine late 2009. Substantial reporting did not begin until late 2012.

Conclusion

- Investment in CIR has transformed the way the program is managed
- Provides data used in nearly all areas of program management
- Timely and population-based
- Saved money and vaccine
- Improved staff efficiency
- Provided benefits to providers
- Result of over 8 years of investment and incremental improvements and adjustments

Thank You!

- Discussion and questions?
- Acknowledgement
 - Could only be accomplished with dedicated and talented CIR staff
 - Amy Metroka, Director of CIR
- Contact information
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