

Using the Citywide Immunization Registry for Pandemic Influenza Preparedness: Lessons Learned from the H1N1 Vaccination Campaign and Preparing for Future Pandemics

Bureau of Immunization
New York City Department of Health and Mental Hygiene

Paul Schaeffer, Amy Metroka, Angel Aponte
Jane R. Zucker

AIRA 2013 IIS National Meeting
October 9, 2013

Overview

- NYC Immunization Information System (IIS) – the Citywide Immunization Registry
- The H1N1 Pandemic in NYC
- H1N1 CIR Response – Challenges and Solutions
- Lessons Learned and Post H1N1 Enhancements
- Next Steps and Barriers
- Conclusions

NYC IIS: Citywide Immunization Registry (CIR)

- Started in 1997
- Birth certificates loaded twice per week
- Mandatory reporting for patients < 19 years
 - ≥ 19 yrs with verbal consent
- ~4.9 million patient records, ~ 65 million immunizations
- ~1,750 pediatric provider sites of which ~90% report regularly and 88% participate in VFC

NYC IIS: CIR - Milestones

- In 2006, CIR reporting was linked to VFC ordering
 - Created CIR-generated VFC doses admin report (DAR) for each provider (# doses reported/ # doses distributed) with reduced VFC orders of providers with DAR < 90%
 - Large increase in reporting
 - More complete data made possible the use of CIR for multiple program functions
- All Providers report electronically since 2010
 - Online Registry; Batch file transfer; HL7 Web service (real-time, uni- or bidirectional)

The H1N1 Pandemic in NYC

- Spring 2009 - large outbreak in schools, rapid spread, high disease rates in children
- 12% of New Yorkers reported flu-like illness in May – June 2009
- Summer 2009 - Plan of Action was to:
 - Offer vaccine in all elementary schools and at weekend PODs throughout the City
 - Recruit providers serving adults
 - Distribute vaccine widely to all immunizers

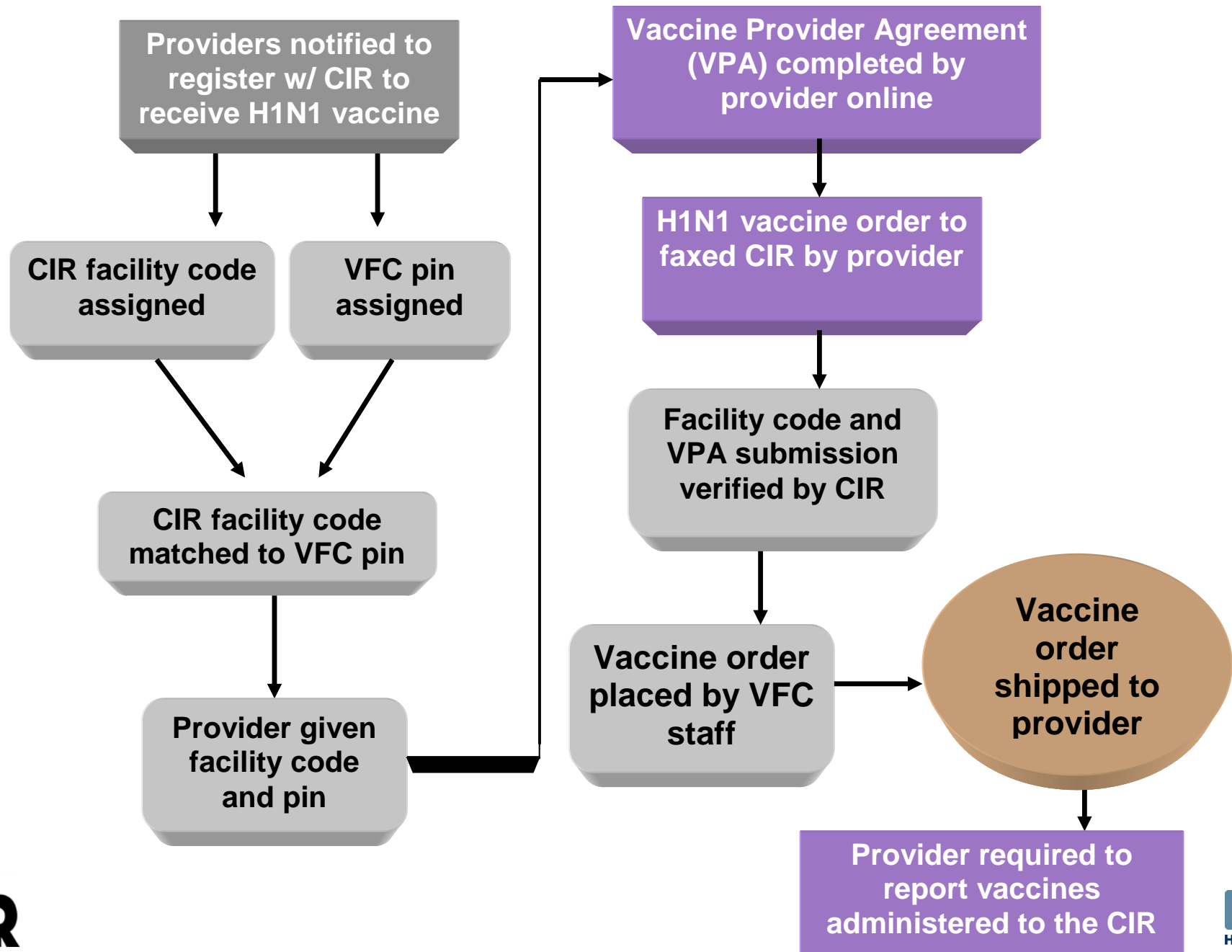
H1N1 – CIR Response

- CIR infrastructure was already in place
 - Existing relationships in place with hospitals and pediatric immunizing facilities
 - Ability to capture large amounts of data
 - Adverse Events module available in CIR
- Plan was to use CIR to:
 - Account for use of vaccine and re-supply
 - Track uptake in priority groups
 - Estimate coverage
 - Track adverse events and determine frequency

Challenges Faced during the H1N1 Response

- Mandatory reporting to CIR only included < 19
- Large number of new adult providers needed to:
 - Register with the CIR
 - Order vaccine
 - Report H1N1 doses to CIR
- Need to prioritize allocation of limited vaccine supply

Use of CIR in H1N1 Vaccination Campaign



Challenges & Solutions: Expanding Mandatory Reporting

- **Challenges** – Mandatory reporting to CIR only included < 19 year olds
- **Solutions** – NYS Governor suspended consent requirement and NYC Health Commissioner issued a Declaration of a Public Health Emergency to modify NYC Health Code to require reporting of H1N1 doses administered to the CIR, including \geq 19 years old

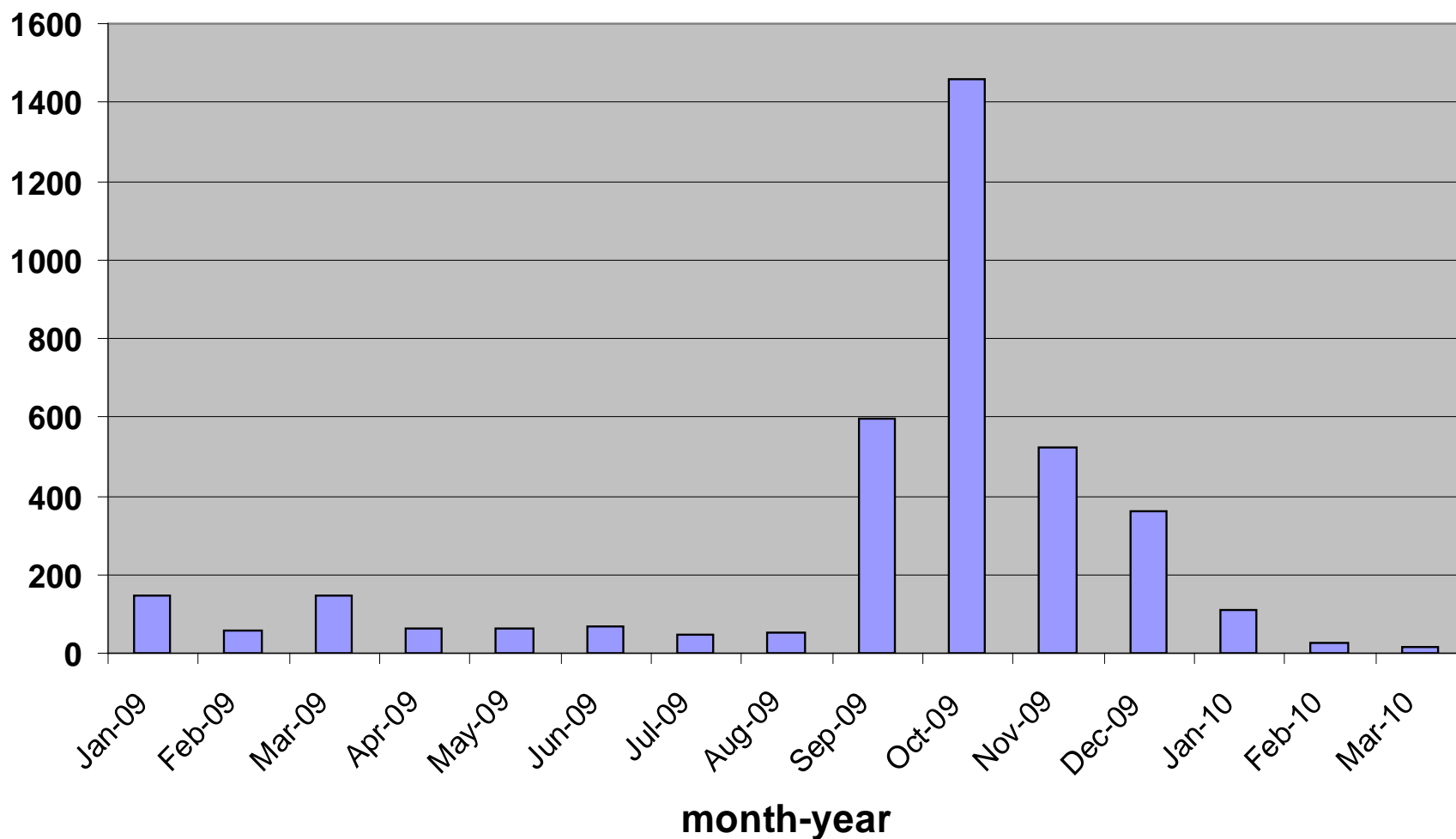
Challenges & Solutions: Provider Registration

- **Challenges** – needed to manually register large number of adult providers for both CIR and VFC programs
 - Telephone lines down repeatedly; constantly busy when up
 - CIR and VFC - two separate units and databases
- **Solutions** – staff reallocated, overtime, re-directed providers to use nycflu email box, high-level coordination

Total Registered Facilities

- Jan 1996 - Aug 2009
 - Registered ~2,000 facilities
 - ~1,800 were active in Aug 2009
- Aug 2009 – Mar 2010
 - Registered > 3,000 new facilities
 - 150% increase
- Current total: ~ 5,000
 - 1,997 new private adult sites registered
 - ~54% of all adult immunizing sites registered

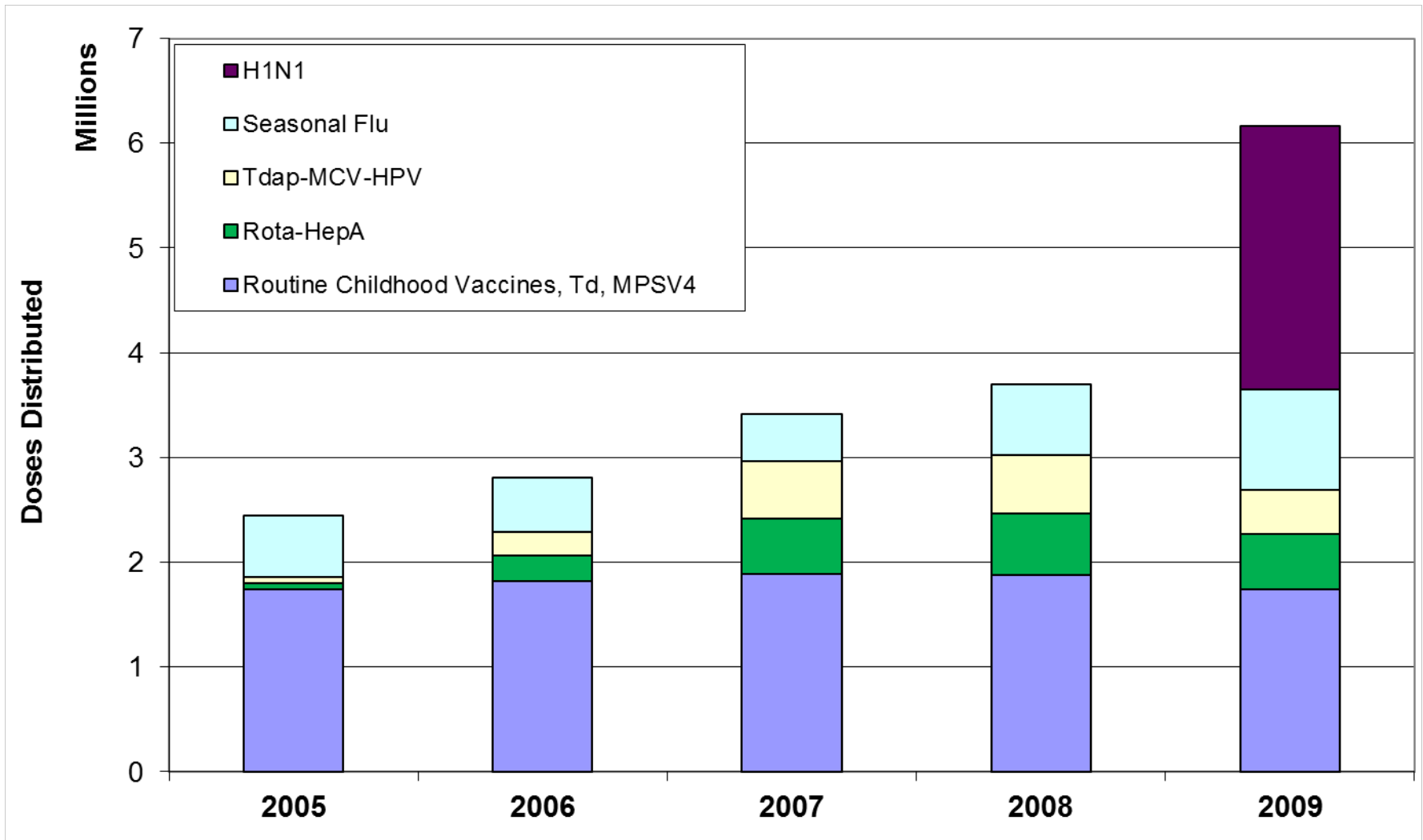
Number of New Facilities Registered in the CIR by Month (Jan 2009 - Mar 2010)



Challenges & Solutions: Vaccine Orders

- **Challenges** – needed to process large number of fax orders
 - Fax lines down repeatedly
 - Need to verify vaccine provider agreement before processing order
 - Hard to determine what orders to prioritize
 - CIR and VFC – two separate units and databases
- **Solutions** – staff reallocated, overtime, re-directed providers to use nycflu email box, high-level coordination







Doses Distributed by the Bureau of Immunization's VFC Program



Challenges & Solutions: Reporting of Vaccine

- **Challenges** – needed to facilitate reporting by newly registered providers (mostly adult providers)
- **Solutions** – CIR enhanced with Quick-Add Patient & H1N1 Vaccination feature, H1N1 vaccine forecasting rules and increased visibility of Adverse Event module; set-up of hundreds of new CIR Online Registry accounts and support and training for new users through Webinars, documentation

H1N1 Quick Add

Online Registry  PATIENTS Search  MyList  Reports  Add/Edit  PRACTICE Tools  VFC  Set Up  H1N1  ? Help LogOut

Welcome **Melissa Mickle**
Facility: **Citywide Immunization Registry**
Address: **2 Lafayette Street**

Vaccine Antiviral

- This page is for the quick entry of H1N1 Influenza immunizations. You are required to report all H1N1 Influenza immunizations regardless of age. Click [here](#) for more information about CIR reporting requirements.
- For the most recent CDC MMWR guidance regarding H1N1 Influenza vaccine, click [here](#).
- For patients under 19 years of age, you may either use this quick entry form to report H1N1 vaccine administration, or use the [Search](#) or [MyList](#) screen.

Quick-Add Patient and H1N1 Vaccination

* - Required Fields
+ - Recommended Fields

Patient Information:

First Name: * Middle Name: + Last Name: *

Gender: * ☐ Male ☐ Female DOB: * / / (mm/dd/yyyy)

Patient's Address and Phone:

Building #: * Street: * Apartment/Suite #: +

City: * Please Select... State: * NY Zip: *

Phone: +

We are asking for your address so we can locate your record more easily when you return for your 2nd dose.

Vaccine Information:

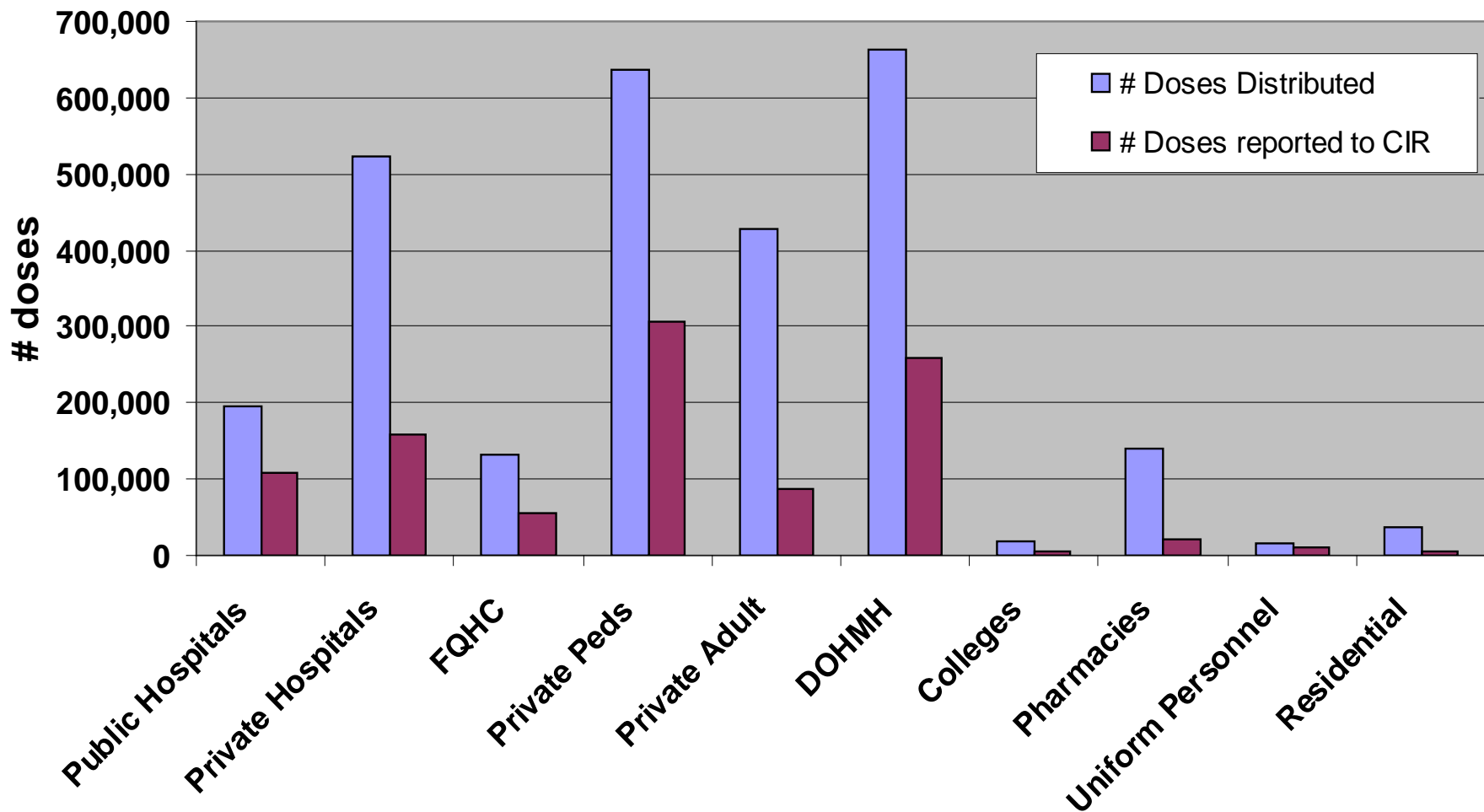
Vaccination Date: * 09 / 08 / 2009 (mm/dd/yyyy)

Vaccine Administered: * Select Vaccine...

Lot: + Select Lot... [Add New Lot to List](#)

Clear Confirm

H1N1 Doses Distributed and Reported to the CIR by Facility Type (Oct 2009 – Mar 2010)



Estimated Coverage for H1N1 Based on CIR Data as of April 14, 2010

Age*	# with 1 H1N1 (per CIR)*	Census Denominator	% with 1 dose (per CIR)
6 months - 3 years	119,621	394,475	30.3%
4 - 10 years	244,452	716,678	34.1%
11 - 18 years	119,578	839,347	14.2%
Total	483,651	1,950,500	24.8%

*The number of children in each age group includes all children that were at that age at the time of the H1N1 administration. Some children may have aged out of that cohort at the time of this report. As a consequence, coverage for that age group is slightly overestimated

Challenges & Solutions: Vaccine Allocation

- **Challenges** – needed to prioritize distribution and communicate to providers about vaccine and product availability with changing CDC forecasts and not enough vaccine or right kind to meet initial demand, then huge surplus!
- **Solutions** – all orders reviewed by senior staff, started sending weekly update letters via CIR blast email and fax, brand of vaccine no longer honored, resupplied based on doses reported to CIR

Lessons Learned & Post-H1N1 Enhancements (1)

- **Lesson Learned** - need to streamline CIR registration and vaccine ordering processes and fully integrate CIR and VFC units
- **Post H1N1 Enhancements**
 - CIR\VFC Programs under one director – Late 2010
 - Online Vaccine Ordering Tool – deployed May 2010
 - No more Faxes! Allows for order status tracking
 - Orders automatically populate VTrcks eliminating duplicate data entry
 - CIR Registration System – deployment Oct 2013
 - Providers register online and information pre-populates CIR tables for quicker processing

Lessons Learned & Post-H1N1 Enhancements (2)

- **Lesson Learned** - need to make reporting easy for newly registered providers
- **Post H1N1 Enhancements**
 - Created off the shelf webinars and documentation to facilitate use of Online Registry
 - Began connecting sites to HL7 Web Service for reporting of doses administered in 2009/2010

Lessons Learned & Post-H1N1 Enhancements (3)

- **Lesson Learned** – need to better classify providers for prioritization of vaccine orders and need to communicate regularly with providers
- **Post H1N1 Enhancements**
 - Built provider classification schema which better defines provider type
 - Built automated blast email application and CIR staff regularly clean up provider email addresses for regular communication

Next Steps

- Continue to enhance Provider Registration System
 - Integrate with VFC, Vaccine Provider Agreement, and streamline Online Registry Registration Process
 - Integrate with DOHMH registration systems including Pharmacy and Long Term Care registration application
- Register adult immunizing sites for Meaningful Use Stage 2– ease of reporting
 - HL7 Web Service accepts electronic submission of data from providers and pharmacies

Next Steps (continued)

- Initiatives underway to expand mandatory reporting to the CIR to include all adults
 - Verbal consent now necessary; no longer written
 - Pharmacy reporting now includes major chains
- Agency working on a master NYC provider list
- Sentinel Site Grant
 - Add adjuvant capture to CIR applications
 - Continue to recruit adult providers
 - Ability to report to CDC for next pandemic – already successful for H1N1 vaccine campaign

Barriers

- Adult Immunization Reporting
 - Difficult to engage providers not actively involved in IIS
 - Consent still required for adults
 - Challenge to EHR systems as many do not capture adult consent in their systems
- Pharmacies can only vaccinate ≥ 18 years
 - Advocate to vaccinate < 18 years
- Lack of Emergency Preparedness Funding
 - Further enhancements \$\$
 - Need for servers, equipment

Conclusions

- CIR facilitated H1N1 vaccine distribution, tracking of uptake and helped target re-supply during shortage
- Established relationships with adult immunizers
 - Registered in CIR database – included in blasts and receive communications about influenza vaccination
- Post H1N1 enhancements have improved CIR functions for day-to-day operations and prepared us for a pandemic especially streamlining of registration and ordering of vaccine
- Further enhancements are necessary to fully automate processes

Contact Information

Citywide Immunization Registry
NYC Department of Health & Mental Hygiene
www.nyc.gov/health/cir

Paul Schaeffer, MPA
Deputy Director, CIR
Tel.: 347-396-2519
pschaeff@health.nyc.gov