New York State Immunization Information System

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What is an IIS?

- An immunization information system (IIS) is a secure, confidential, computerized system that:
  - Maintains consolidated immunization information reported by one or more providers.
  - Has functions and features needed by an immunization program and other public health programs (e.g. reminder recall, vaccine inventory management, adverse event reporting, coverage estimates, outbreak management, etc.).
  - Has interoperability with other health information systems including Electronic Health Records (EHR).

- **NYSIIS is the New York State Immunization Information System.**

Why do we need immunization information systems?

- By the age of two, children will need up to 20 vaccines and one in five U.S. children receives at least one unnecessary dose of vaccine.

- More than 20 percent of the children in the U.S. have seen more than one health care provider in their first two years, resulting in scattered paper medical records.

- CDC started the registry initiative in 1995 following the measles outbreak; too many kids were not up-to-date.

Registries work . . . an example

- The Hurricane Katrina disaster displaced children throughout the United States.

- The Houston (Texas)-Harris County Immunization Registry was connected to the Louisiana Immunization Network for Kids Statewide (LINKS).
  - One year later nearly 60,000 searches of immunization histories were recorded with 18,966 records found.

- Cost savings by avoiding unnecessary re-immunization of displaced children was estimated at $1.6 million in vaccine alone ($3.04 million for vaccine and administration fees).

  Source: The Success of an Immunization Information System in the Wake of Hurricane Katrina. PEDIATRICS. 2007;119(6):1213-17.

A Local Example, June 2006

•Catastrophic flooding of Mohawk River

•St. Mary's Health Center in Canajoharie (Montgomery County) was under water

•Building and contents were destroyed, including medical records, computers and equipment

•Because the practice participated in the regional Immunization Registry Information Source (IRIS) all the immunization records were easily retrieved from the central server

Fiscal Impact

- Projected annual cost for nationwide network of IISs for children 0-6 years = $100 million
- Cost offsets = $280 million
  - $168M immunization assessment activities for child care, Head Start and school entry
  - $58M manual pulling of records for all children entering Kindergarten
  - $26.5M duplicate immunizations
  - $2M Health Plan Employer Data and Information Set (HEDIS) reports
  - $11.1 National Immunization Survey

Source: Immunization Information Systems: Committee on Practice and Ambulatory Medicine.   PEDIATRICS. 2006;118(3):1293-95.

Benefits

- For parents and children:
  - Permanent immunization record
  - Reminders and tracking to keep up-to-date

- For public health:
  - Monitor population levels & guide interventions
  - Minimize vaccine misuse and wastage
  - Optimize vaccine management

Benefits for Providers (1)

- NYSIIS is not intended to be primarily a system to report data to the state.

- The true benefit to users will be in the information they get OUT of the system.
  - Without the historical data in the system, much of this functionality will be lost.

Benefits for Providers (2)

- Provides record consolidation of immunization information from multiple providers into a single reliable record.
  - Official immunization records printed for entrance into daycare, school, camp and college.

- Clarifies complex and changing immunization schedules and emerging vaccine combinations.
  - Patient-specific reminders of vaccine doses recommended, due or overdue and invalid doses.

Benefits for Providers (3)

- Generates reminder and recall lists and/or mailing labels to send out to parent/guardian to remind them when the child's immunizations are due or have been missed.
    - Tracking vaccine lot numbers in the event of a recall
    - Tracking practice coverage levels
- Allows provider's offices with electronic medical systems to submit data without duplicate entry.
- Generates timely immunization histories and summary reports to assist with HEDIS, QARR, VFC, and other quality improvement initiatives.

Saving Time for Providers

- Once the initial investment of staff time to provide historical data is complete, NYSIIS will actually REDUCE the staff time required to:
    - search for or replace patient immunization records;
    - provide official records for daycare, school, camp, or other activities;
    - calculate which vaccines are due;
    - give unnecessary immunizations when earlier shot records are missing;
    - request shot records from other providers; and
    - track vaccine inventory.

Cost Savings

- Ultimate cost savings when utilizing an IIS
  - **Savings** from not having to manually pull a chart for immunization records = $14.70 per chart (McKenna, 2002)
  - Downloading information is most cost-effective
    - $0.24 per shot for automated entry vs. $3.24 for manual data entry (Rask, 2000)
  - Increase cost of $0.56 per shot post-implementation with nurses spending 3.4 minutes per shot on registry activities (Glazner, 2004)

Source: Immunization Information Systems: Committee on Practice and Ambulatory Medicine. PEDIATRICS. 2006;118(3):1293-95

NYSIIS History

- New York State (outside of New York City)
  - Voluntary participation since 1994.
  - Regional registry model.
  - Legacy system required installation of software and updates on each office computer.
  - Individual consent was required.

- New York City has a separate registry (NYCIR) that has been mandated since 1997.

From Regional Registries to a Statewide, Web-based System

- 2003 – independent assessment was completed.
  - Recommendation: web-based application.
- 2005 – solicitation for a software vendor was initiated.
- 2006 – Contract awarded to EDS (now called HP Enterprise Services) to develop a web-based system using the Wisconsin Immunization Registry (WIR) platform.
- 2006 – legislation passed creating a statewide, mandated immunization information system.

NYS Immunization Registry Law

- Public Health Law Article 21, Title 6, Section 2168.
  - Signed into law August 2006, mandating creation of statewide immunization registry.
  - As of January 1, 2008, required health care providers to report immunizations given to persons less than 19 years old within 14 days of administration.
  - Past immunization history must be reported if this information has not been reported by another provider.

NYS Immunization Registry Law - 2

- There are no provisions for "opt-out" for those less than 19 years.

- With written consent, immunizations given to persons 19 years and older can be reported.

- Persons with medical or religious exemptions are noted as such in the registry.

- Vital records birth certificate information, including immunizations administered at birth, "seed" the NYSIIS database.

- Gives NYC authority to operate NYCIR and exchange data with NYSIIS within framework of the law.

Immunization Registry Law

Who is required to report

-Vital Records: All births in NYS outside of NYC
-Public and private providers, including hospitals
-Only one report required to either NYSIIS or NYCIR, depending on where administered

NYSIIS ↔ **NYCIR**
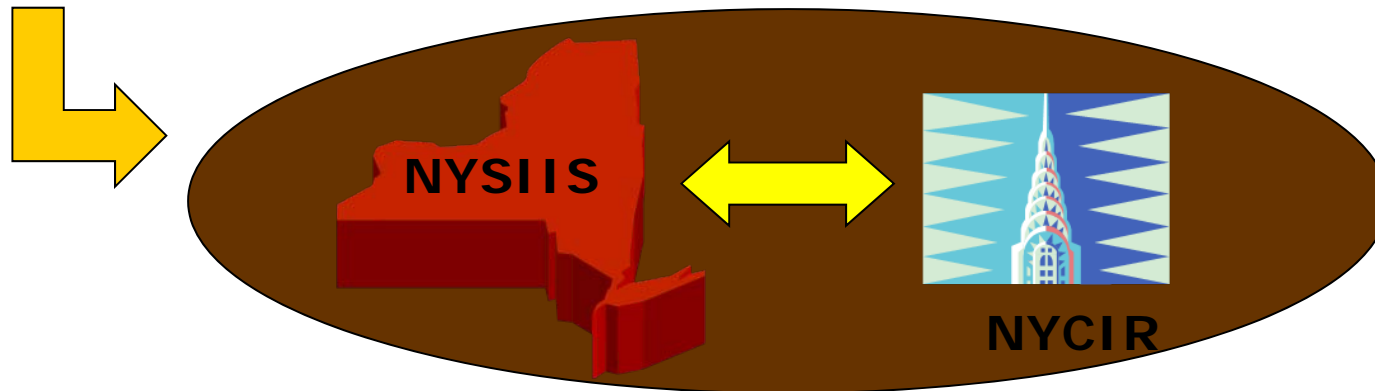
Who can have access to data

-Health care providers and designees
-Hospitals
-State and Local Health Departments
-Certified Home Health Agencies
-Local Social Services districts*
-Office of Children and Family Services*
-Schools, including licensed day care centers*
-Health Insurance Plans*
-Parents (through HCP only)
        *View-only access unless they administer immunizations

NYSIIS Web-based Application

- Advances in information technology now permit this system to run securely on the Internet.
- No fee to use NYSIIS.
  - Cost may be incurred to maintain Internet access.
- User access to NYSIIS is through their INDIVIDUAL account on the NYSDOH Health Commerce System.
- Data export files from provider electronic medical record (EMR) or clinical billing systems may be used to report data to NYSIIS.

Key Points for Implementation

- Language in the law provided for the "orderly implementation and operation of the registry."

- Key message: The focus of our efforts is communication & outreach, training & education, and technical support, NOT compliance and enforcement.

Provider Participation
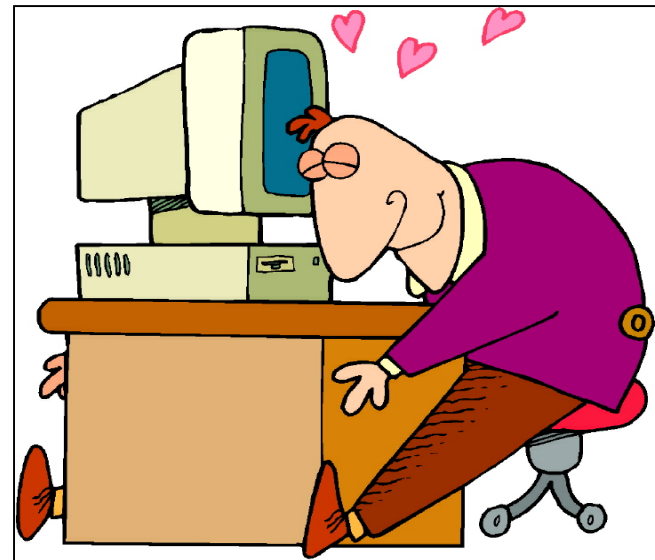
NYSIIS Numbers

As of September 1, 2010:

- 3.3 million patients
- 39.0 million immunizations
- 9,600 individual users
- 3,000 health care provider practices
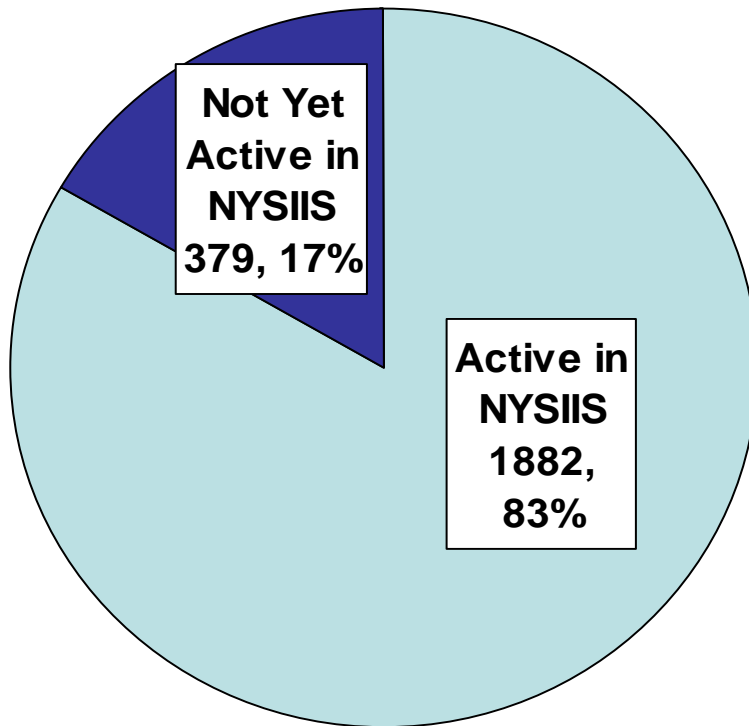- 300 pharmacies
- 20 health plans
- 1,700 schools

Coverage: 80.1% of NYS children (outside of NYC) less than six years of age have two or more immunizations recorded in NYSIIS (compared to 21.2% Jan '08).

New York State Immunization Information System (NYSIIS) Participation as of October 11, 2010
N=5,461

VFC Participants
n=2,261

### Other (Non-VFC) Active NYSIIS Participants
n=3,200

Not Yet Active in NYSIIS 379, 17%

Active in NYSIIS 1882, 83%

Not Participating in VFC Active in NYSIIS	Count
Private Practice (Solo or Group)	682
OBGYN	46
College/University	33
Nursing Home/LTCF	42
Pharmacies	369
Schools (Read Only Access)	1,735
Health Plans (Query Access)	20
All Other Categories	273

No Longer Active in NYSIIS (with data)	96

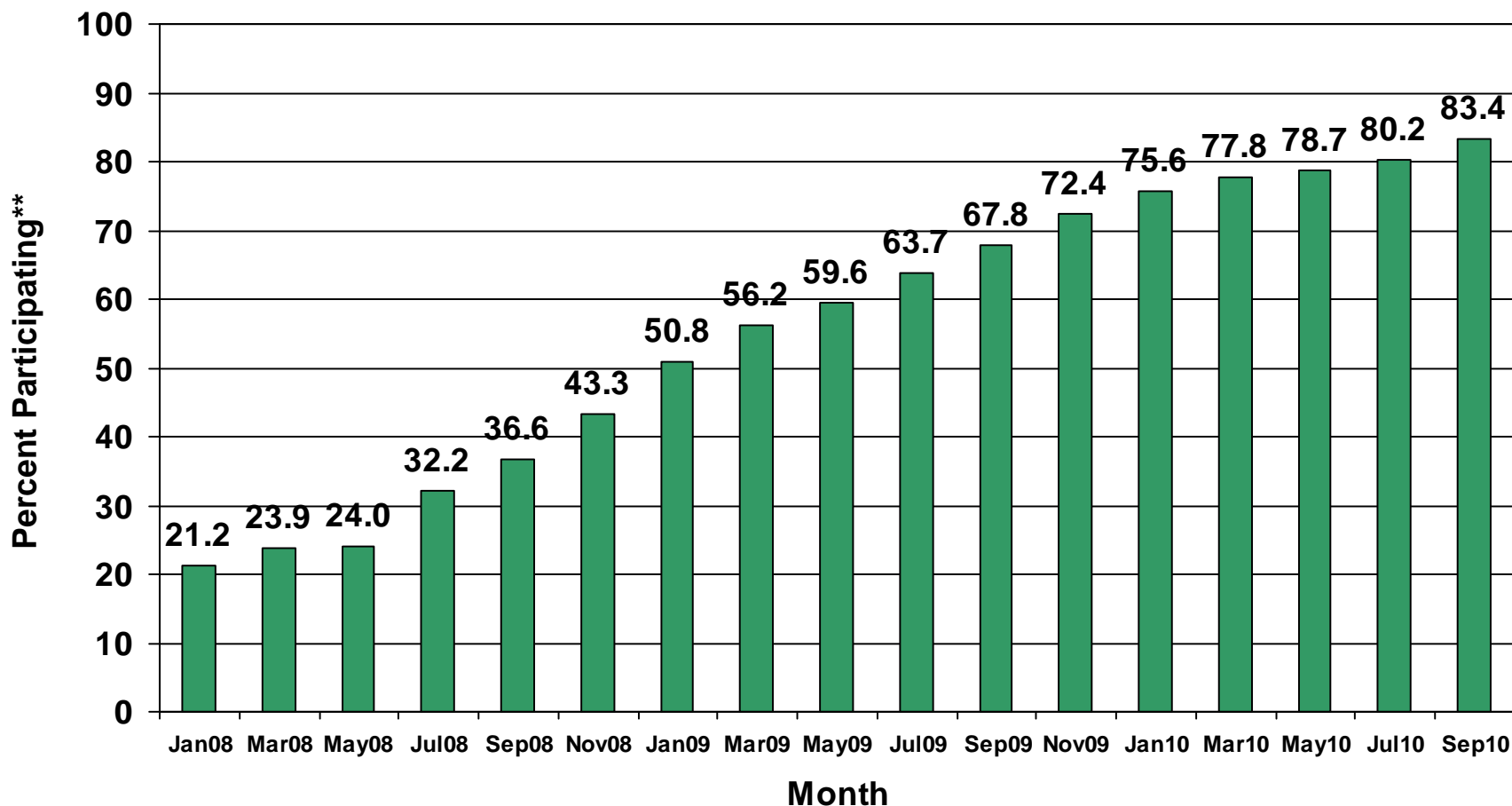# Provider Participation in NYSIIS
By Month, January 2009 – Present
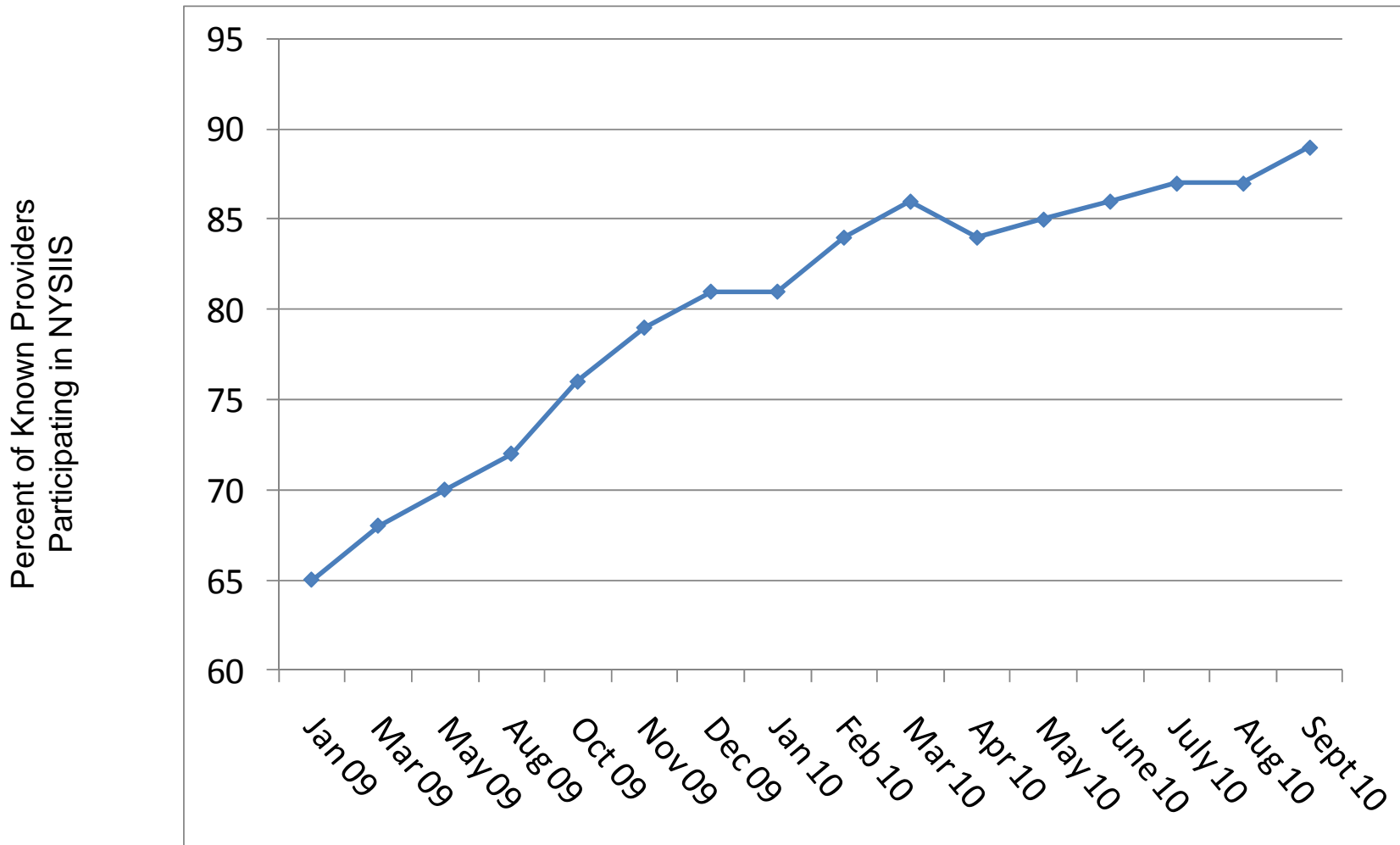
Percent of Children Less Than 6 Years of Age with Two or More Imms in NYSIIS*
New York State (Outside of New York City)

Percent Participating

Values by Month:
- Jan08: 21.2
- Mar08: 23.9
- May08: 24.0
- Jul08: 32.2
- Sep08: 36.6
- Nov08: 43.3
- Jan09: 50.8
- Mar09: 56.2
- May09: 59.6
- Jul09: 63.7
- Sep09: 67.8
- Nov09: 72.4
- Jan10: 75.6
- Mar10: 77.8
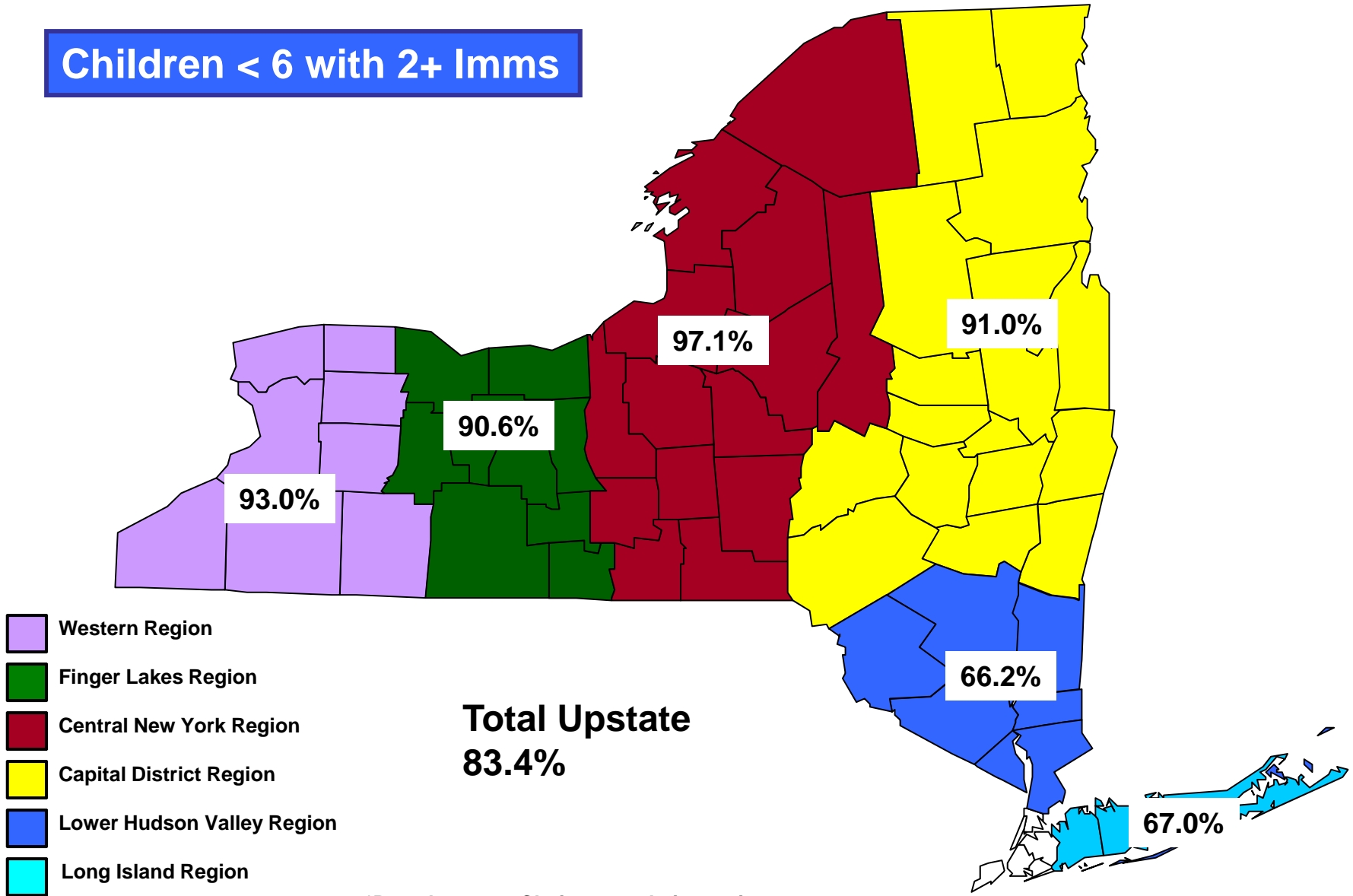- May10: 78.7
- Jul10: 80.2
- Sep10: 83.4

Month

*New York State Immunization Information System
**Based on Claritas population estimates for 2008 (Jan-Nov08), 2009 (Jan-Nov09) and 2010 (Jan10-present).

10/01/2010

2010 NYSIIS Saturation Rates* by Region

Children < 6 with 2+ Imms

91.0%

97.1%

90.6%

93.0%

66.2%

67.0%

- **Western Region**
- **Finger Lakes Region**
- **Central New York Region**
- **Capital District Region**
- **Lower Hudson Valley Region**
- **Long Island Region**

**Total Upstate
83.4%**

Based on 2010 Claritas population estimates.

Updated 10/13/2010

Population Distribution of Children Less Than Six Years of Age* (NYS outside of NYC)

12.2%

15.0%

11.0%

12.8%

22.6%

26.4%

Western Region

Finger Lakes Region

Central New York Region

Capital District Region

Lower Hudson Valley Region

Long Island Region

Total Upstate 758,321

* 2010 Claritas population estimates

Updated 08/24/2010
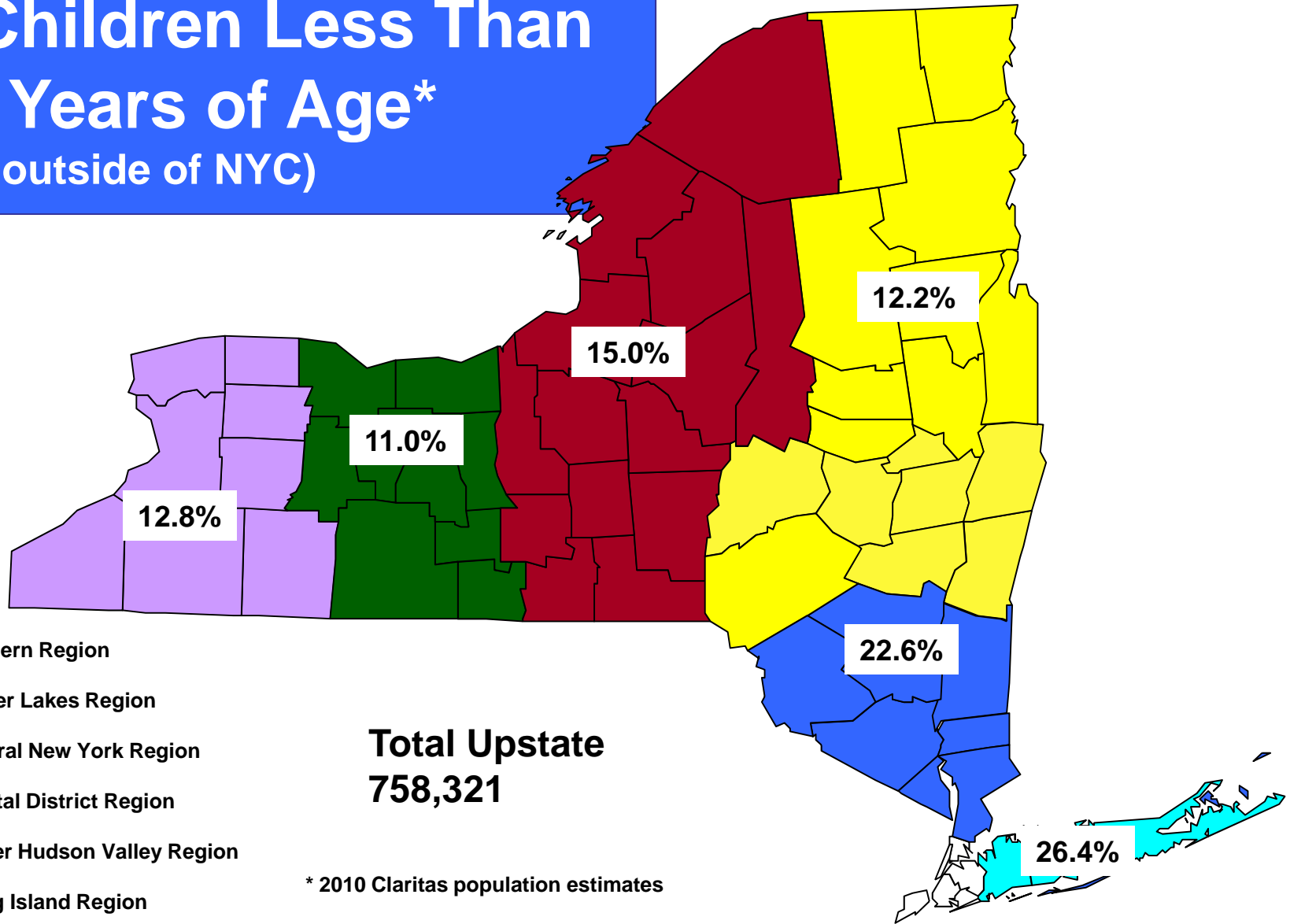
Percent of Children Under Six Years of Age with Two or More Shots in NYSIIS
October 1, 2010

■	95%+	(17)
■	85-94%	(22)
■	50-84%	(17)
■	Below 50%	(1)

Clinton
Franklin
St. Lawrence
Essex
Jefferson
Lewis
Hamilton
Warren
Oswego
Herkimer
Washington
Niagara
Orleans
Monroe
Wayne
Oneida
Fulton
Saratoga
Genesee
Cayuga
Madison
Montgomery
Schenectady
Erie
Livingston
Onondaga
Rensselaer
Wyoming
Ontario
Seneca
Yates
Albany
Cortland
Otsego
Schoharie
Chautauqua
Cattaraugus
Allegany
Steuben
Schuyler
Tompkins
Chenango
Greene
Columbia
Chemung
Tioga
Broome
Delaware
Ulster
Dutchess
Sullivan
Orange
Putnam
Westchester
Rockland
Suffolk
Nassau
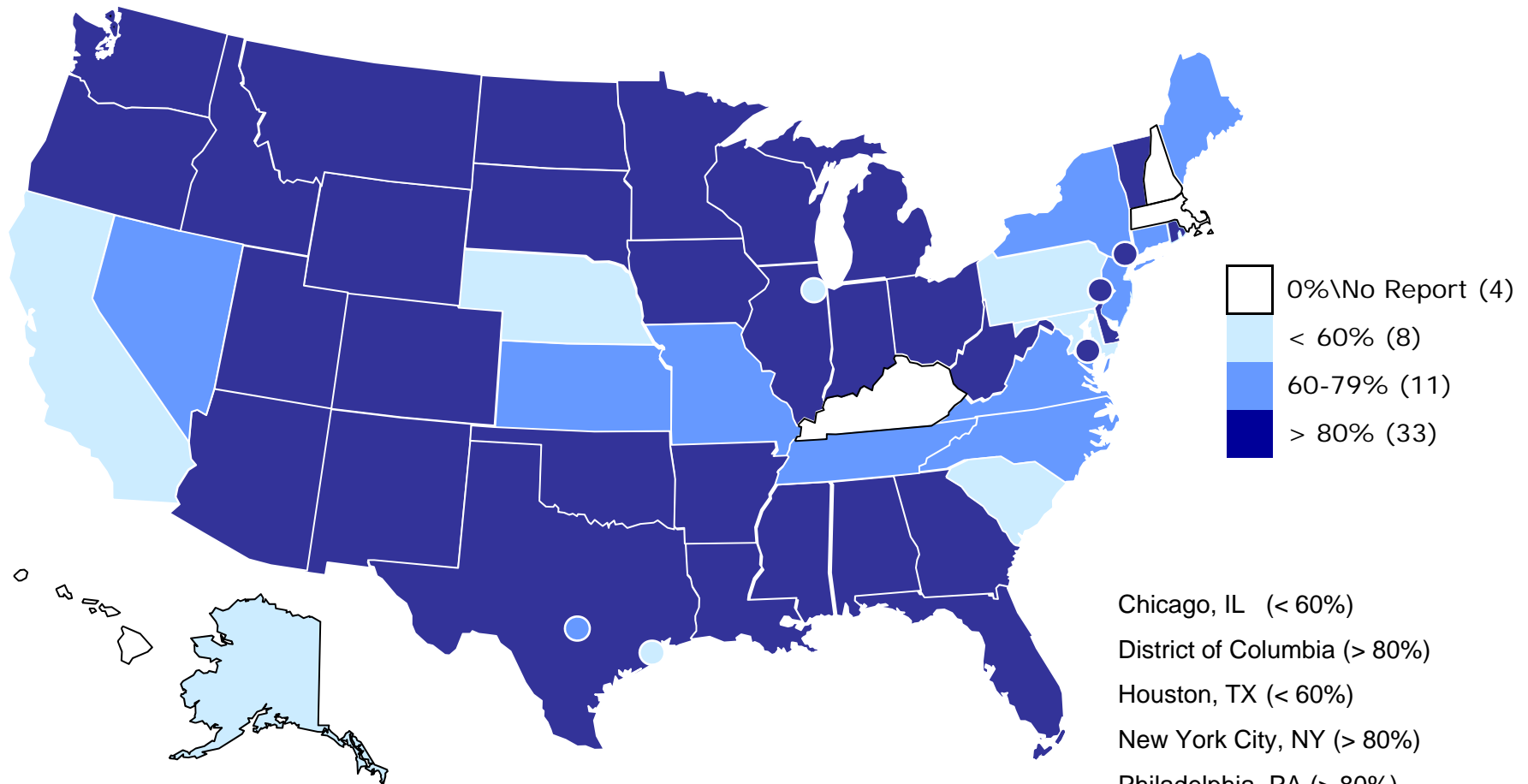
Counties Reaching 95%+

Broome
Chautauqua
Chenango
Cortland
Erie
Genesee
Hamilton
Lewis
Oneida
Onondaga
Oswego
Saratoga
Tompkins
Warren
Washington
Wayne
Wyoming

NYS Children Under Six Years of Age with Unknown County of Residence - 24,575
Children Under Six Years of Age with Unknown State and County of Residence - 10,632

Based on 2010 Claritas Population Estimates - 758,321

Percentage of children aged < 6 years participating in a immunization information system -- United States, 2009

Legend:
- 0%\No Report (4)
- < 60% (8)
- 60-79% (11)
- > 80% (33)

Chicago, IL   (< 60%)

District of Columbia (> 80%)

Houston, TX (< 60%)

New York City, NY (> 80%)

Philadelphia, PA (> 80%)

San Antonio, TX (60%–79%)

National Participation: 77% (excluding Territories)
Source: CY 2009 IISAR

Technical Activities

Data Linkages

- Historical data migration - uploaded data already contained in one of the previously existing regional immunization registries (HealthyShot or IRIS) to the NYSIIS database.
- Vital records birth certificate information, including immunizations administered at birth (Hepatitis B), are loaded into NYSIIS weekly.
  - Back loaded all hospital births in NYS outside of NYC since 1/1/2004.
- New York City sends a file to NYSIIS weekly with information on children with a NYS address outside of NYC.

Electronic Data Exchange Vendors and Providers

- NYSIIS accepts electronic batch loads from billing and EHR systems in flat file or HL-7 formats
  - Early efforts underway to implement HL-7 version 2.5.1
- 57 vendors serving 525 practices are 'live.' (An additional 18 vendors are in the data exchange set up process.)
  - 18 use HL-7 v2.3.1   34 use flat file   5 use both
  - 47 are true EHR systems, 8 are strictly billing software vendors, 2 are both
- An additional 141 practices are using in-house or "home grown" systems and electronically submit to NYSIIS.
- Although "only" 20% of our practices submit using data exchange, nearly **60%** of all incoming data are from data exchange.
- A complete list of vendors currently working with NYSIIS is available on the NYSDOH public web site at: http://www.health.ny.gov/prevention/immunization/information_system/providers/data_exchange_information/

Outbound files (NYSIIS to Provider)

- New features being pilot tested
- Organizational Extract – A file can be extracted that contains information on all patients associated with the practice. May assist providers who are manually using NYSIIS "seed" a new EHR.
- Update file – A file can be returned to the provider that is currently data exchanging that contains any updates to patients associated with the practice.

Linking NYSIIS to the New York State HIE Infrastructure

- Goal = real-time, bi-directional interface for seamless exchange of PH information.

- $1 billion public and private investment in the Statewide Health Information Network for New York, or SHIN-NY.

- Testing the Universal Public Health Node (UPHN), a system designed facilitate bi-directional data between State DOH and local health information exchanges across the state for public health functions.

What is "Meaningful Use"?

- HITECH Act - a comprehensive, voluntary program meant to improve the nation's health by harnessing health information technology.
- Medicaid-Medicare EHR Incentive Program
  - Eligible providers and hospitals receive payments as they demonstrate various stages of "meaningful use" of data.
    - Adopt a certified EHR product
    - Meet all defined core objectives/report quality measures
    - Meet selected "menu" objectives – at least 1 public health
      - Submit electronic data to immunization registries/systems
- Additional information:
  - HHS/ONC: www.healthit.hhs.gov
  - CMS Meaningful Use FAQ site: www.cms.gov/EHRIncentivePrograms

Data Quality

- Patient address is critical
  - For data entry users: Complete patient address should be recorded, including COUNTY
- Manufacturer and Lot number – important for vaccine recall, safety issues
- For data exchangers: verify data is being sent and stored correctly. Problems should be reported to your vendor.

Data Quality – VFC Reporting

- VFC program is using NYSIIS in verifying shots administered.
  - Data exchangers should verify that VFC eligibility is being sent and stored correctly **AND** practice is identified as owning the shots you administer (i.e. not being sent as historical).
  - If VFC eligibility is not being sent, or is being stored incorrectly, your VFC reports are NOT VALID.
  - Any problems should be report to your vendor and NYSIIS staff.

System Modifications

- Release(s) 1.5.0-.3 – Oct & Dec 2009, Feb & Apr 2010
  - Countermeasure and Response Administration (CRA) module to support H1N1 response.
  - Scheduler updates to accommodate new vaccines, age range changes, and prevent conflicts among live viruses.
  - VFC eligibility tracking and reporting enhancements.
- Release 1.6 (Clinical) – Completed June 2010
  - Added new vaccines and modify schedules as appropriate for Hiberix, Cervarix, and Prevnar13.
  - Updated HPV schedule for age and adjacent dose rules
  - Included HPV series for males (Gardasil only)
- Release 2.0 Lead – Completed September 2010
  - Lead user interface module, historical data upload from LeadWeb
  - Phase 3 (reports and prompts) to follow later

Upcoming Releases

- Release 2.1 – Anticipated October 2010
  - VFC related enhancements including inventory tracking of doses given to adults not recorded in NYSIIS
  - Org relationship clean up (parent-child)
  - Log out links post-HCS portal re-design
  - 3 database maintenance items
- Future
  - Menveo
  - Patient status
  - Vitals address
  - Patient specific reports (VAR, Imm History, Imms Needed, Health Appraisal, Daycare, School)
  - Tradename/Manufacturer updates

Communication and Outreach

Training, Announcements & Tips

NYSIIS Training by Modality
December 2007 - Present
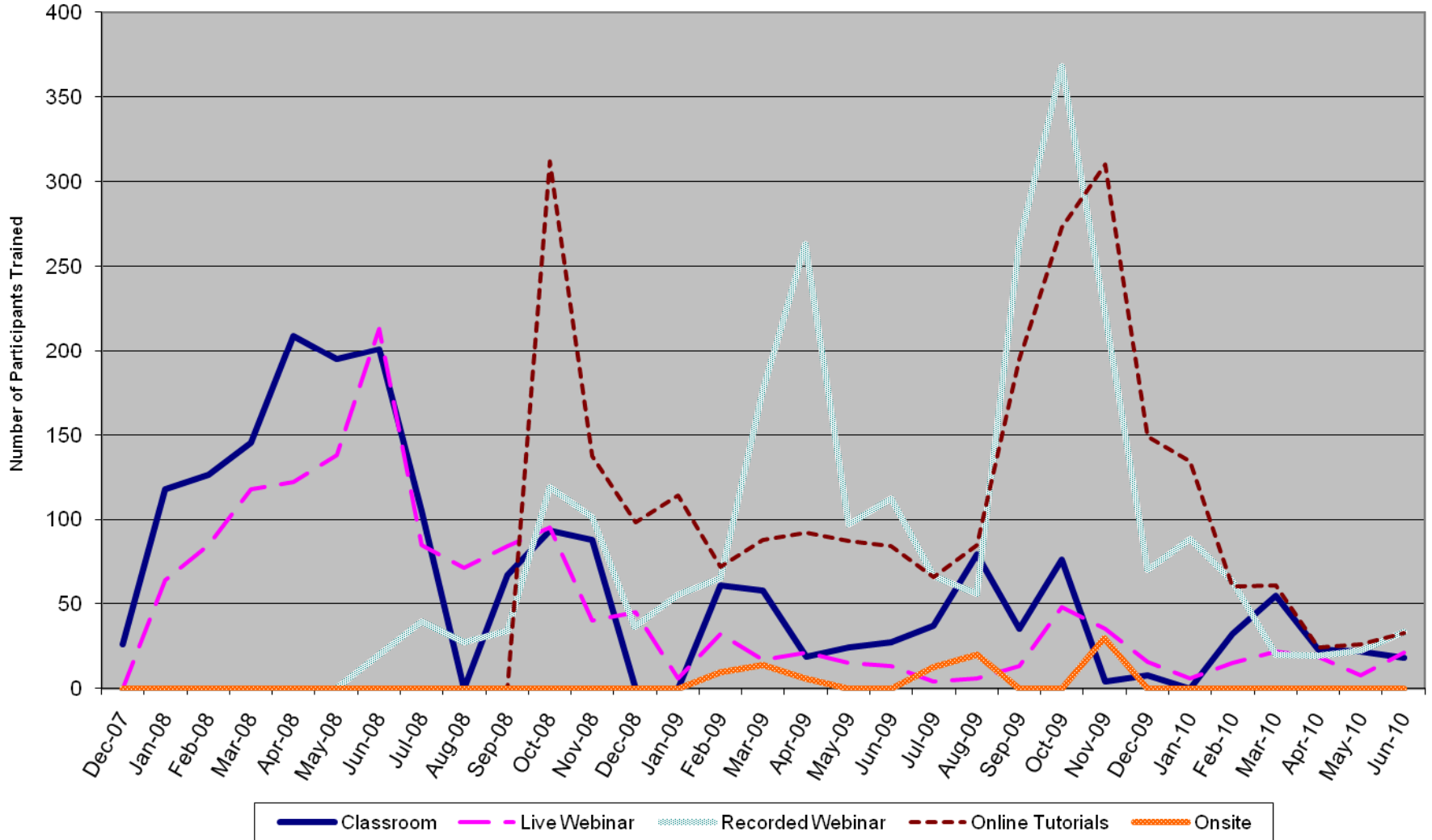
2010 TRAINING PLAN

- Outreach by HP (formerly EDS) staff
- Increased onsite trainings and org-specific webinars (key strategy)
- Classroom sessions
- Webinars (live and recorded)
- Online Self-Guided Tutorials
- Ask The Trainer Webinar
- Newly revised user manual released Jan 2010

2010 Classroom Schedule

- Classroom Locations:

- November 9-10 Plainview, LI
- December 8-9   Commack, LI

- Statewide classroom sessions will resume in February 2011

Webinars

- Register at: http://nysdoh.webex.com
- Live instructor led sessions scheduled periodically.
- Previously recorded sessions available on demand.
  - Standard User
  - Combined Standard/Administrator User
  - Advanced Reports
  - AFIX-CoCASA
  - School Access User (read-only)
  - Standard User for Pharmacy
  - Health Insurance Plans (look up)
  - *NEW* NYSIIS-Lead Training

ON-LINE SELF-GUIDED TUTORIALS

- 13 modules posted on NYSIIS Training Page in Health Commerce System: https://commerce.health.state.ny.us/hpn/bcdc/immunization/training_info.html

- Upcoming MODULE – Lead Training (early 2011)

ASK THE TRAINER

- This open forum webinar was designed to allow NYSIIS users to bring their questions to the NYSIIS trainers for one-on-one resolutions.

- **Last Friday Each Month at 11:30-12:30**

  http://nysdoh.webex.com – click "Training Center"
  Select "Ask the Trainer: NYSIIS Noon Time Webinar"
  Enter Name and Email
  Enter Session Password: train10

COMMUNICATIONS

- NYSIIS News – Summer 2010 distributed electronically

- NYSIIS application announcements and blast email distributions
  - Important vaccine related information
  - Maintenance notices
  - Training opportunities
  - NYSIIS Tips of the Month

User Group Meetings

□ Opportunity to update current users on implementation and enhancement activities, share some tips and tricks for using specific features, and provide a forum for new and veteran users to discuss successes and challenges.

- Six ½ day sessions held across the state twice per year (Spring and Summer).
- Albany, Syracuse, Rochester, Buffalo, Lower Hudson Valley, Long Island
- 400 participants registered for Fall 2010

July Tip of the Month

- **How to record Menveo in NYSIIS**
  - Until Menveo is an available trade name in NYSIIS, please use the following work around:

    NYSIIS users who manually enter but <u>DO NOT</u> use NYSIIS inventory: Record a Menveo dose administered as a historical shot. To do so complete the following steps: On the Add Immunizations screen place a "1" in the "Hist #" box that corresponds with the Meningo immunization and click OK. On the Historical Immunization screen complete the date provided and lot number fields (use the lot # on the box), leave the trade name field blank and in the "Historical Org Name" field type "Menveo". Leave "Source of Imm" field as Source Unspecified.

    For NYSIIS Users who data enter and <u>DO</u> use the NYSIIS inventory: You can add lots of Menveo under the Menactra trade name temporarily. Make sure to keep track of the Menveo lot numbers added in this way. Once Menveo is available you must go back into show inventory and edit the trade name to Menveo. Once this is saved all corresponding shots will automatically switch to Menveo.

Administrative Activities

Program Linkages and Future Priorities

Program Linkages

- Health Insurance Plans – query only capability to support QUARR and HEDIS reporting
- WIR Consortium – continued code sharing with various projects, especially Oregon
  - Enhanced immunization evaluator (scheduler)
  - Data exchange file interacting with inventory module
- Newborn Hearing Screening – legal authority to share data authorized! Initial work underway to develop solution.
- Inter-state data sharing agreement
  - Working to secure Legal approval of template language

Future Priorities – 2010 and Beyond

- Commissioner's Prevention Agenda
  - http://www.nyhealth.gov/prevention/prevention_agenda/

- Healthy People 2020 Objectives (proposed)
  - 'Complete' records in IIS for children <6
  - % adolescents with 2+ imms in IIS

- American Recovery and Reinvestment Act (ARRA) aka "Stimulus Funding"
  - Disaster recovery server/plan
  - Immunization reporting support visits
  - NYSIIS enhancements
  - Bi-directional interfacing

- Additional Authorized Users:
  - WIC Programs

Help Desks

- Commerce Accounts Management Unit (CAMU) Help Desk
  - For HPN access or account issues
  - (866) 529-1890   or   hinhpn@health.state.ny.us

- NYSIIS Technical Help Desk
  - For NYSIIS user access or questions on how to use the system
  - (866) 389-0371   or   nysiishelpdesk@hp.com

- NYSIIS staff
  - For general program or policy questions
  - (518) 473-2839   or   nysiis@health.state.ny.us

- Growing Up Healthy Hotline
  - For parents/public
  - 1-800-522-5006

Q & A

(518) 473-2839
nysiis@health.state.ny.us