

Adults Need Vaccines, Too!

Strategies for Increasing Adult Vaccination Rates

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Disclosures

- I have no relevant financial relationships with any manufacturer(s) or commercial product(s) and/or provider of commercial services discussed in this CME activity.
- I do not intend to discuss any investigational use of any commercial product or device in this presentation.

Outline

- Review the burden of vaccine preventable diseases
- Review adult vaccination coverage in the United States and New York City
- Review the Standards for Adult Immunization Practice
- Opportunities to increase adult vaccinations

Burden of Vaccine Preventable Diseases

Burden of Vaccine-preventable Disease Among U.S. Adults

- Influenza
 - 3,000 to 49,000 total influenza-related deaths per year¹
 - 80%–90% of deaths among adults 65 years and older²
- Invasive pneumococcal disease (IPD)³
 - 33,900 total cases/ 3,700 total deaths in 2013
 - 91% of IPD and nearly all IPD deaths among adults
- Pertussis in 2014⁴
 - ~24,000 cases
 - >5,000 among adults 20 years of age and older

Sources: MMWR. 010;59(33): 1057-1062, <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0066312>,
www.cdc.gov/abcs/reports-findings/survreports/spneu13.pdf, <http://www.cdc.gov/pertussis/downloads/pertuss-surv-report-2014.pdf>.

Burden of Other Diseases Among U.S. Adults

- Ebola: 4 cases
 - 1 NYC case
- Avian Influenza: None
- Zika: 4,900; 217 locally-acquired¹
 - NYC 1037 cases (including 343 pregnant women), and 0 locally-acquired cases

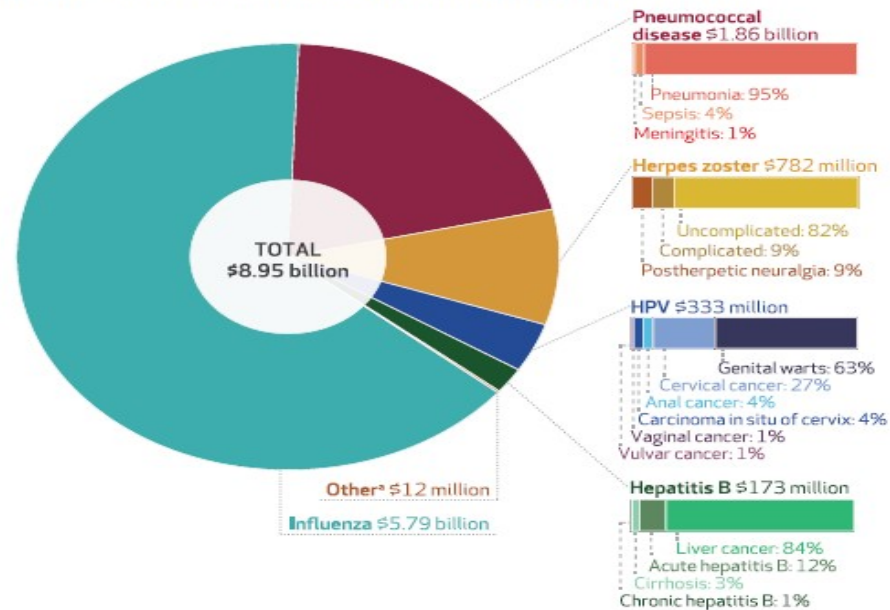
Impact of Influenza and Pneumococcal Disease in NYC, 2014

- 2,220 deaths due to influenza/pneumonia
 - 3rd leading cause of death in NYC
- 630 cases of invasive *S. pneumo* disease
 - 489 cases in adults 45 year of age and older
 - Highest crude rate in adults 65+ (21.6/100,000)

The Cost of Not Getting Vaccinated

EXHIBIT 3

Annual economic burden of vaccine-preventable diseases, by pathogen, 2015



SOURCE Authors' analysis. **NOTES** All dollar amounts are for all US adults relevant to each vaccine-preventable disease (which target different age groups). The breakdown of results by age is presented in the online Appendix (see Note 7 in text). HPV is human papillomavirus. *Includes economic burden attributable to diphtheria, hepatitis A, measles, meningococcal disease, mumps, pertussis, rubella, tetanus, and varicella.

- Vaccine preventable disease in adults cost the U.S. \$8.95 billion in 2015.
- 80 percent of that cost or \$7.1 billion can be attributed to unvaccinated adults.

Source: Sachiko Ozawa, Allison Portnoy, Hiwote Getaneh, Samantha Clark, Maria Knoll, David Bishai, H. Keri Yang and Pallawi D. Patwardhan, Modeling The Economic Burden Of Adult Vaccine-Preventable Diseases in The United States, Health Affairs published online October 12, 2016

Adult Immunization Coverage Rates

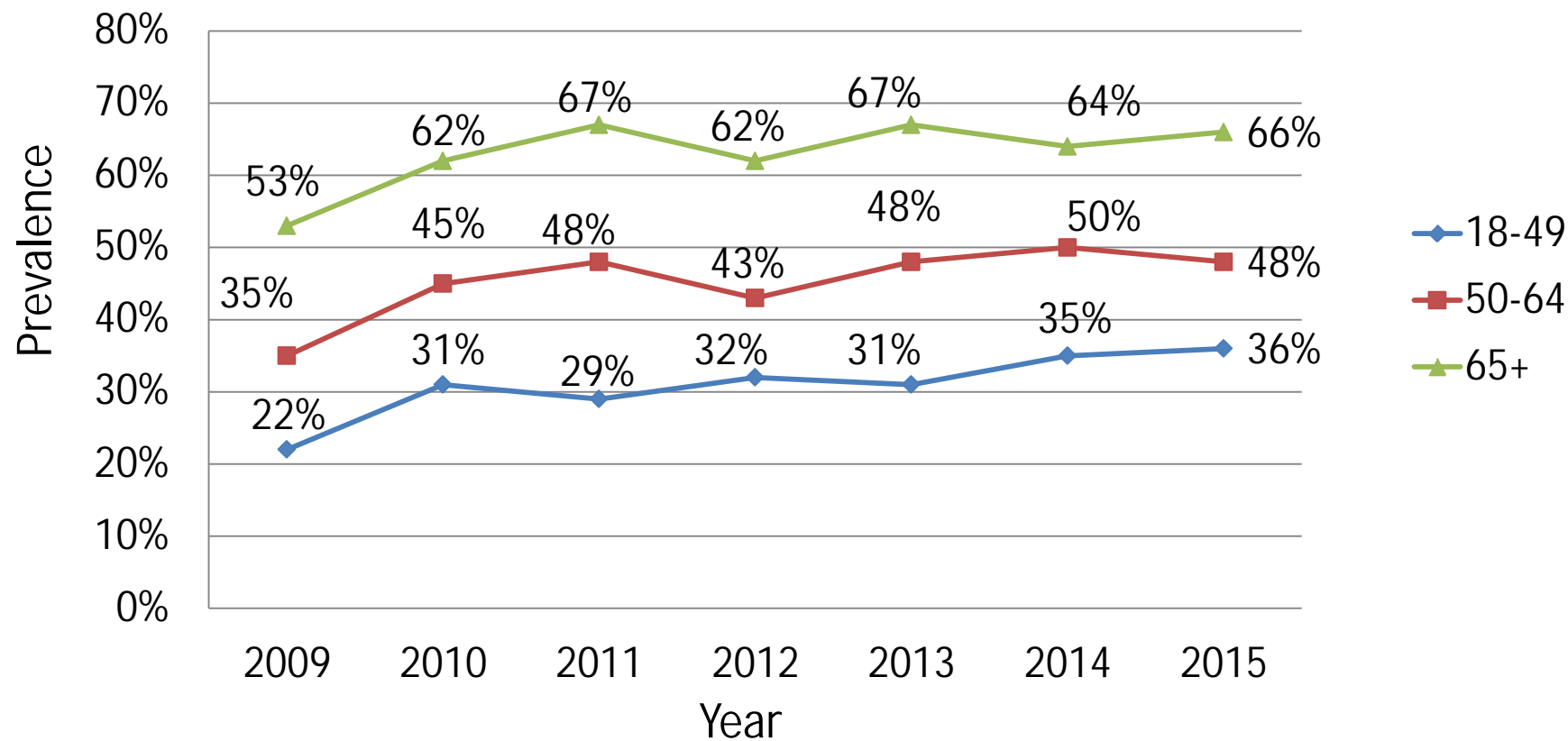
National Adult Vaccination Rates

Vaccine	Coverage Rate	Healthy People 2020 Goals
Influenza (18 years+)	42%	70%
Pneumococcal (65 years+)	70%	90%
Zoster (50 years+)	22%	30%**
Tetanus-containing (18 years+)*	59%	NA

**Healthy People 2020 Goal is for people 60 years+

Sources: 2014 Behavioral Risk Factor Surveillance System (BRFSS) Data, *2013 BRFSS Data

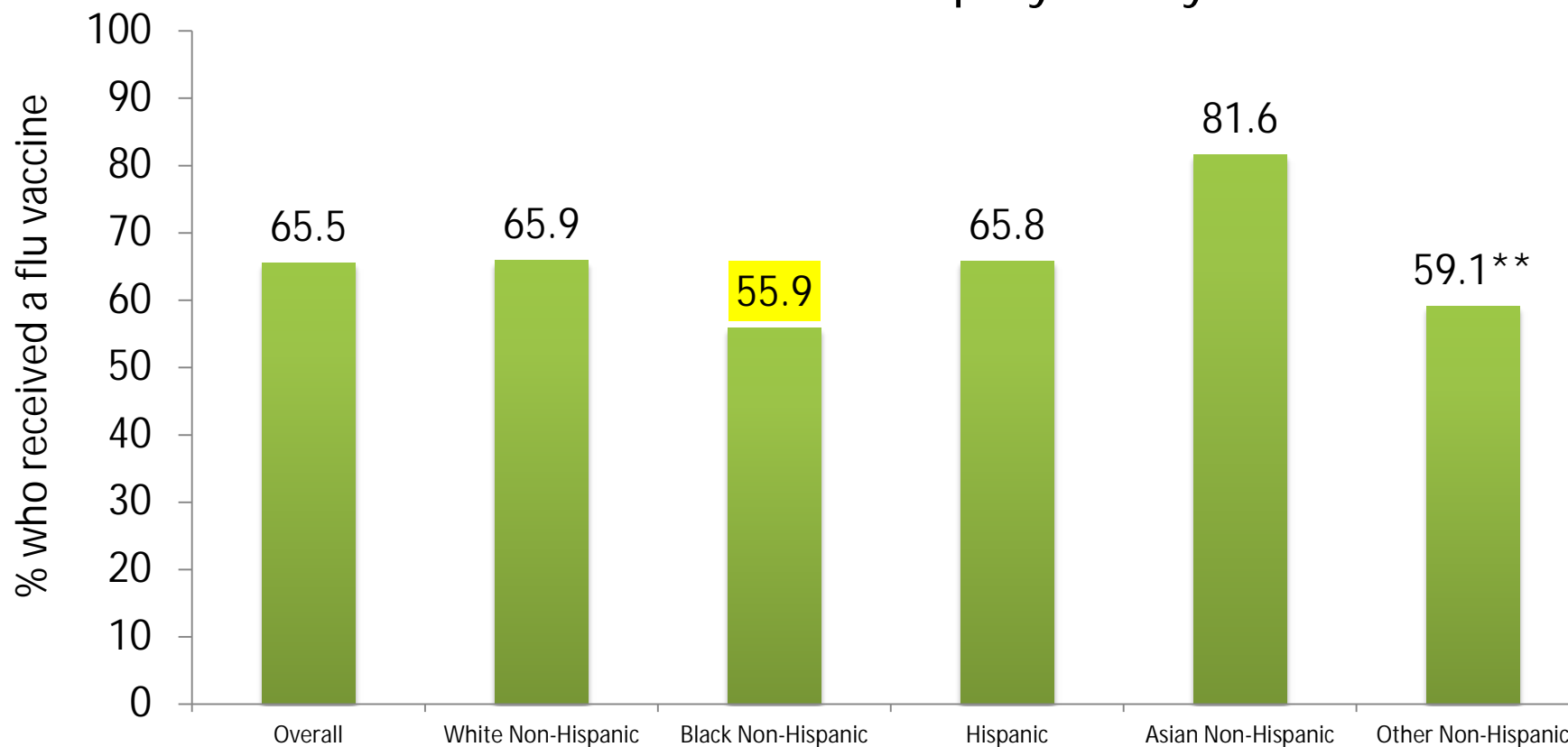
NYC Community Health Survey Influenza Vaccination Coverage 2009-2015



Source: Community Health Survey, 2009-2015

Ethnic & Racial Disparities in Influenza Coverage, NYC Age 65

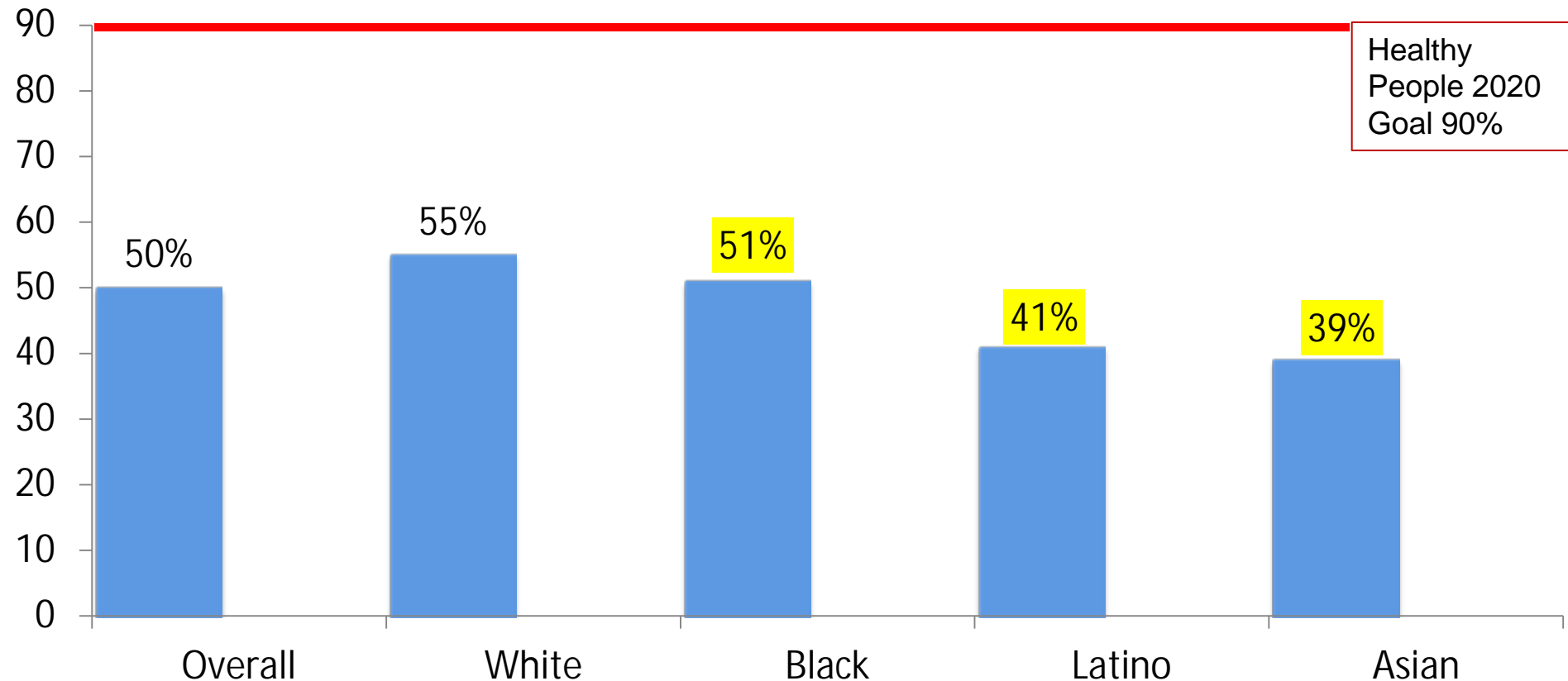
During the past 12 months, have you had a flu shot in your arm or a flu vaccine that was sprayed in your nose?



** Estimate based on small # of respondents

Source, 2015 Community Health Survey

2012 Pneumococcal Vaccine Coverage in Adults 65+



Source: 2012 Community Health Survey, NY State coverage, BRFSS 2014: 65%

Reasons for Low Adult Immunization Rates

- Adults not aware of vaccines they need
- Health care providers for adults busy and often have
 - Competing priorities
 - Incomplete vaccination history
- Not all providers stock all vaccines for adults
- Adults frequently see multiple providers, so vaccine history recordkeeping difficult

National Standards for Adult Immunization Practice

Standards for Adult Immunization Practice

- The National Vaccine Advisory Committee (NVAC) revised the Standards for Adult Immunization Practice in 2013.
- All providers, including those who don't provide vaccine services, have role in ensuring patients up-to-date on vaccines

What are Standards for Adult Immunization Practice?

- Call to action for ALL healthcare professionals to:
 - Assess immunization status of all patients at every clinical encounter
 - Strongly recommend vaccines that patients need
 - Administer needed vaccines or refer to a provider who can immunize
 - Document vaccines received by patients in state/city vaccine registries

www.cdc.gov/vaccines/hcp/patient-ed/adults/for-practice/standards/index.html

www.cdc.gov/vaccines/hcp/patient-ed/adults/for-patients/index.html



- **Assess**
- **Recommend**
- **Administer or Refer**
- **Document**

National Standards for Adult Immunization

ASSESS

ASSESS immunization status of all of your patients at every clinical encounter.

- To standardize assessment, use screening checklists and questionnaires.
- If a patient is coming for specific vaccine(s), screen the patient for all needed vaccines.
- Screen for ALL adult immunizations, not just the ones administered in your pharmacy.

National Standards for Adult Immunization RECOMMEND

Strongly RECOMMEND vaccines that patients need.

- Make recommendations for ALL vaccines a patient needs.
- **Recommendation from the healthcare professional is the strongest predictor of whether patients get vaccinated.
- Strongly recommend vaccines that your patients need, whether your pharmacy stocks them or not.
- Your recommendation can make a difference

National Standards for Adult Immunization RECOMMEND

- For some patients, a recommendation might not be enough. **SHARE** important information to help patients make informed decisions .
- **SHARE** the tailored reasons why the recommended vaccine is right for the patient given his or her age, health status, lifestyle, occupation, or other risk factors.
- **HIGHLIGHT** positive experiences with vaccines (personal or in your practice), as appropriate, to reinforce the benefits and strengthen confidence in vaccination.
- **ADDRESS** patient questions and any concerns about the vaccine, including side effects, safety, and vaccine effectiveness in plain and understandable language.
- **REMIND** patients that vaccines protect them and their loved ones from many common and serious diseases.
- **EXPLAIN** the potential costs of getting the disease, including serious health effects, time lost (such as missing work or family obligations), and financial costs.

National Standards for Adult Immunization

ADMINISTER

ADMINISTER needed vaccines you do stock, and REFER patients for recommended vaccines you do not stock.

- Important to provide the vaccination at the point of encounter.
- Having a patient return for a vaccine is a missed opportunity.

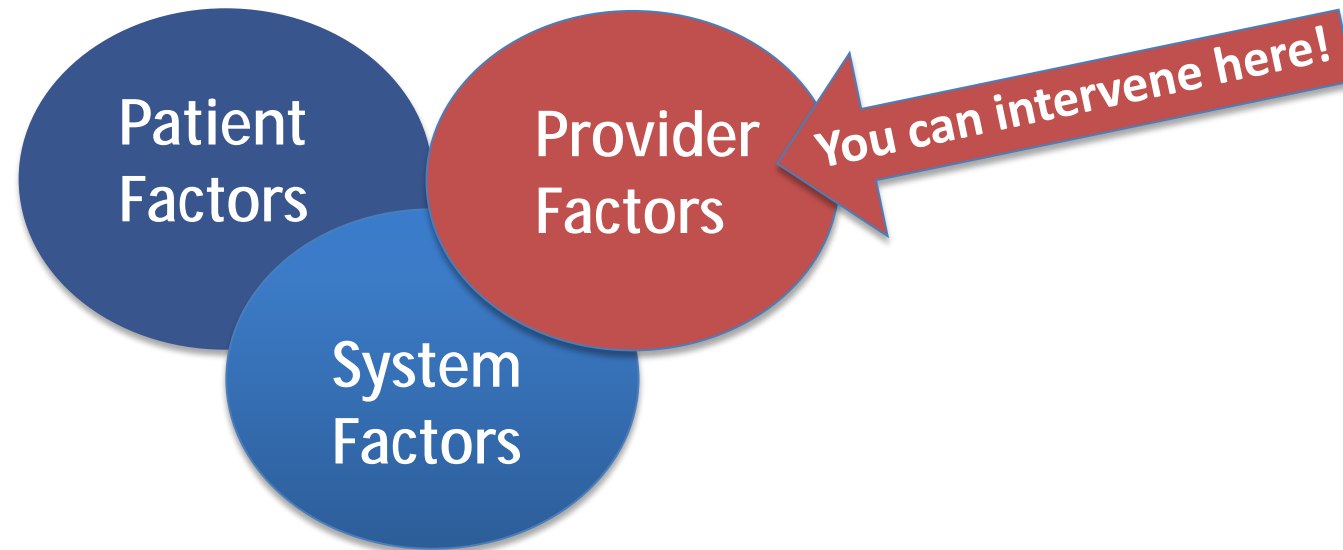
National Standards for Adult Immunization DOCUMENT

DOCUMENT vaccines received by patients, including entering immunizations into immunization registries, ex: NYC Citywide Immunization Registry (CIR).

- Document vaccine(s) given and keep records on file for 7 years.
- Provide patients with a receipt of immunization.
- Reporting helps:
 - Improve continuity of care
 - Track the impact of hospital-based vaccination

Opportunities to Increase Adult Vaccinations

How can my facility vaccinate more adults?



US Community Services Task Force: Health-care Provider- or System-Based Strategies

Intervention	Status of Task Force Review
Provider reminder systems when used alone	Recommended (Strong evidence)
Provider assessment and feedback	Recommended (Strong evidence)
Standing orders	Recommended (Strong evidence)
Provider education when used alone	Insufficient evidence
Health care-based interventions when implemented in combination	Recommended (Strong evidence)



Source: www.thecommunityguide.org/vaccines/universally/index.html

Meta-Analysis of Interventions to Increase Use of Adult Immunization

Intervention	Odds Ratio*
Organizational change (e.g., standing orders, separate clinics devoted to prevention)	16.0
Provider reminder	3.8
Provider education	3.2
Patient financial incentive	3.4
Patient reminder	2.5
Patient education	1.3

*Compared to usual care or control group, adjusted for all remaining interventions

Source: Stone E. Ann Intern Med 136:641-51, 2002

Standing Orders

- Written non-patient standing order, approved by a physician or other authorized practitioner, that authorize nurses and pharmacists to:
 - Assess a patient's need for vaccination
 - Administer the vaccine without a clinician's direct involvement with the individual patient at the time of the interaction

Use of Standing Orders

- The most important factors associated with greater likelihood of a practice/hospital consistently using standing orders are:
 - being aware of the ACIP recommendations or Medicare regulations regarding adult immunizations
 - agreeing that Standing Orders are effective
 - having two or more clinical staff per physician
 - being a family physician
 - having office staff that works well together and is open to innovation
 - having an electronic medical record (EMR)
 - having an immunization champion in the practice/hospital

Are Standing Orders Effective?

- Based on a review of 29 studies (1997-2009) that examined standing orders either alone or combined with other activities, the Community Prevention Services Task Force found:
 - used alone, standing orders increased adult vaccination coverage by a median of 17 percentage points (range, 13% to 30%)
 - used in combination with other interventions,* standing orders increased adult vaccination coverage by a median of 31 percentage points (range, 13% to 43%)

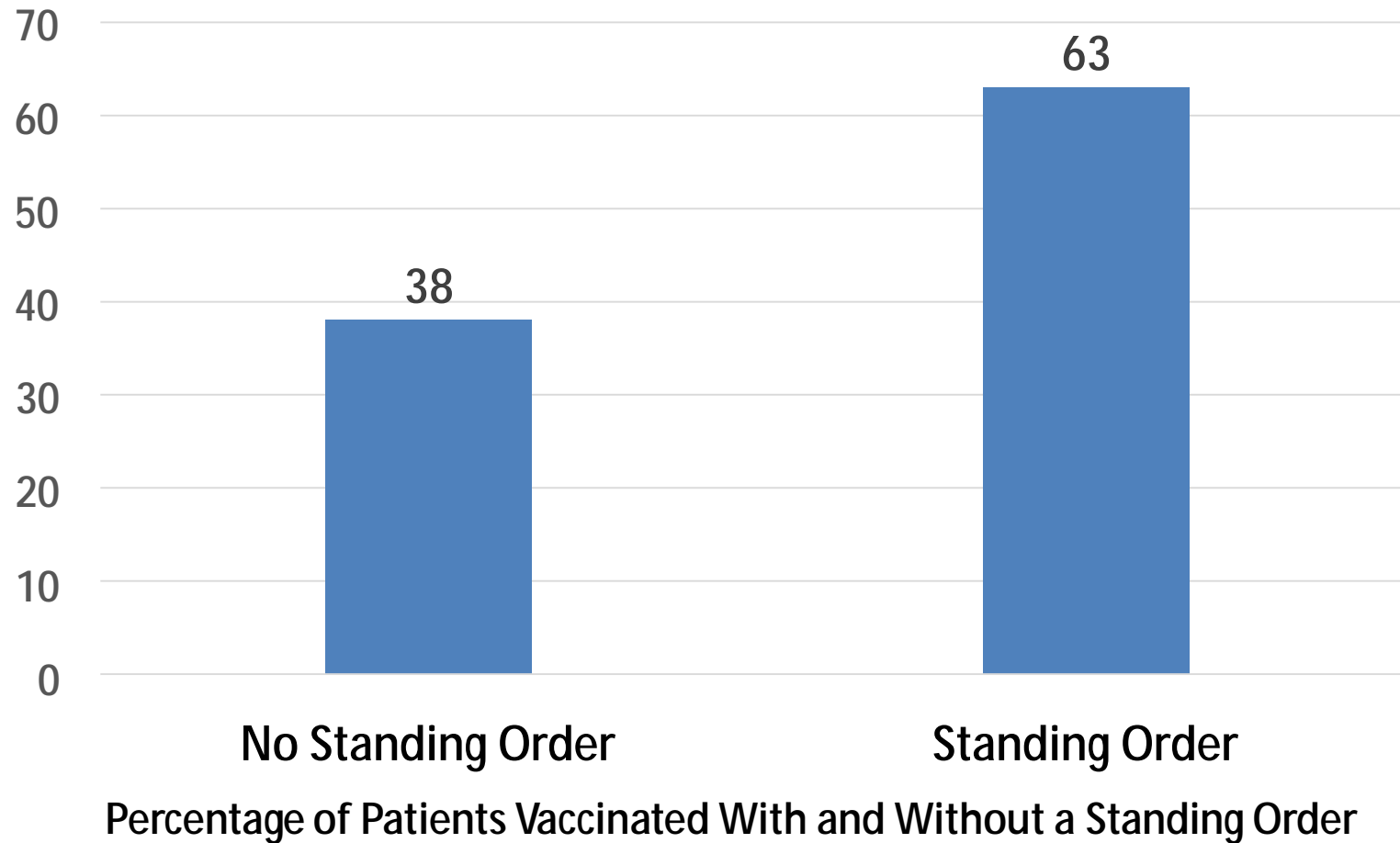
*Such as expanding access in healthcare settings, client reminder and recall systems, clinic-based education, provider education, provider reminder and recall systems, or provider assessment plus feedback

Source: www.thecommunityguide.org/vaccines/standingorders.html

Are Standing Orders Effective? (cont.)

- The Community Prevention Services Task Force found:
 - standing orders were effective in **increasing vaccination rates** when implemented in a range of clinical settings, among various providers and patient populations
 - standing orders were effective for **vaccine delivery** to children (universally recommended vaccinations) and adults (influenza and pneumococcal)

Example: Use of Standing Orders for Influenza Vaccine in an Ambulatory Care Setting



Source: Goebel LJ et al. *J Am Geriatr Soc* 2005;53:1008-10

Example : Impact of Standing Orders on Adolescent Vaccination Rates, Denver Health, 2013

Vaccine	National (2013)	Colorado (2013)	Denver Health (2013)
Tdap	86.0	87.1	95.9
MCV4	77.8	73.6	93.5
HPV – Females ≥ 1	57.3	58.2	89.8
HPV – Females ≥ 3	37.6	39.1	66.0
HPV – Males ≥ 1	34.6	33.5	89.3
HPV – Males ≥ 3	13.9	9.9	52.5

Standing Orders in Clinical Practice

- Efficiency
 - Clinician time is not required to assess vaccination needs and issue verbal or written orders to vaccinate
 - Nurses (or others) take charge of vaccination program
- Increased number of patients seen = increased income stream
- Patient safety
 - improved vaccine coverage, less vaccine-preventable disease

NYC DOHMH Initiatives to Increase Adult Vaccinations

Standing Orders Pilot Program

- Hospitals invited to participate in a pilot program with DOHMH to implement standing orders for adult immunization
- DOH will work with hospitals (12 months) on steps to implementing standing orders and this will serve as a model for other NYC hospital settings
- Protocols and best practices developed in the pilot programs will be used to disseminate best practices and lessons learned to other NYC hospitals to increase the number of medical facilities using standing orders

Standing Orders Pilot Program

- DOH will provide tools and assistance to partnering hospital/health systems:
 - DOH will help to identify which areas in hospital setting are best for implementing standing orders
 - DOH will work with pilot sites on standing orders
 - DOH will help with adult immunization registry reporting
 - DOH will provide tools, e.g. adult immunization toolkits

Standing Orders Pilot Program

- February 2017-February 2018
- Receive technical assistance
- Inform best practices for all NYC hospitals
- Space is limited!

Nurse-Outreach Program – Coming Soon!

- Public health “detailing” program
- Recruit 100 medical practices
 - Incentive: 1-year UpToDate subscription
 - Two nursing visits in 6-month period
 - Provide technical assistance
 - Train staff on implementation of the Standards
 - Provide Adult Immunization toolkits

Summary

- Substantial burden of disease in adults for which vaccines are available
- Vaccination rates low among adults in U.S.
- New *Standards for Adult Immunization Practice* provide a framework for improving immunization
- Opportunities exist to implement evidence-based strategies
 - Implementing Standing Orders
 - Nurse Detailing Program

Thank You

Questions?

Contact:

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vhuang1@health.nyc.gov

347-396-2411

Thank you

You and your facility can lead the way as champions in adult immunizations.

Citywide Immunization Registry

Kathleen Blaney, MPH, RN

Bureau of Immunization

New York City Department of Health and Mental Hygiene

Outline

- Introduction to the Citywide Immunization Registry (CIR)
- Benefits of the CIR
- Reporting to the CIR
- CIR Data

Citywide Immunization Registry (CIR)

- Database of patient immunization records submitted by NYC health care providers
- Used by providers for clinical decision support
- Utilized by the health department as a tool to:
 - Assist in surveillance investigations
 - Monitor vaccine uptake and coverage
 - Emergency preparedness activities

CIR Background


- 1996: Mandate for reporting of immunizations for children <8 years
- 2005: Expanded mandate to <19 years
- 2009-2010: H1N1 pandemic
 - >2,000 adult providers registered
 - 258 hospitals received over 500,000 doses of vaccine
- Contains >6 million patient records and >85 million immunizations
- >650 pharmacy sites registered

New York State Public Health Law


- PHL Article 21, Title 6, Section 2168, effective October 21, 2014
 - Registered nurses and pharmacists authorized to administer immunizations must report immunizations administered to adults ages 19 years and older upon the consent of the patient
 - Consent can be verbal or written

Consent

- Verbal or written
 - Keep signed originals at your site.
 - There is no need to send signed forms to DOHMH
- Consent form available on CIR webpage



CIR Citywide
Immunization
Registry
We help you call the shots!
www.nyc.gov/health/cir



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Mary T. Gorman, M.D., M.P.H.,
Commissioner
NYC
Health
Phone: (347) 396-2400
Fax: (347) 396-2559

Health Care Providers may document verbal voluntary consent or adapt this sample form for use.

Consent for Participation in Citywide Immunization Registry (CIR)
for individuals 19 years of age and older

The New York Citywide Immunization Registry (CIR) is a confidential, computerized system that allows authorized users access to a person's immunization records. Strict federal and state laws protect the privacy of personal information in the system. Here are some benefits of participating in the CIR:

- Your health care provider can use the CIR to ensure that you receive all needed immunizations.
- The CIR provides you with a permanent and easily accessible record of your immunizations.

Participation in the CIR is voluntary for people 19 and older, so immunizations you receive after 18 years of age will not be included unless you give consent. If you want to participate, please carefully read the statement below and sign in the space provided. For additional information about this consent, please call (347) 396-2400.

Declaration of Consent

I give my consent for _____ (name of doctor or organization) to release my immunization(s) and identifying information to the New York Citywide Immunization Registry (CIR). I understand the purpose of the CIR is to assist in my medical care and to record the immunizations that I have had or will receive in the future. My immunization information may potentially be used by the Department of Health for quality improvement purposes, epidemiologic research, and disease control purposes. Information used for quality improvement or any research purposes will have my personal identifying information removed.

The immunization information in the CIR may be released to the following: myself, my health insurance organization, the state and local health departments, the school that I am registered to attend, and authorized medical providers that deliver my medical care.

I understand that there will be no effect on my treatment, payment, or enrollment for benefits if I choose not to participate in the CIR. This consent may be withdrawn at any time by using the form provided. Information about immunizations received by the CIR with my consent will remain in the CIR if I later choose to withdraw my consent. However, future immunizations will not be recorded in the CIR.

_____	_____
Print Name	Date of Birth
_____	_____
Signature	Date

Visit Us Online! nyc.gov/health/cir

The Citywide Immunization Registry
42-09 28th Street, 5th FL, CN 21, LLC, NY 11101-4132
Phone: (347) 396-2400 Fax: (347) 396-2559
Email: cir@healthnyc.gov

CIR Adult HCP Facts Access Consent 2014

Consent

- Can be embedded into registration process

Signature and Consent

Name: TEST
TESTPATIENT

- | | |
|---|--|
| <input checked="" type="checkbox"/> HIPAA Compliance | In compliance with Health Insurance Portability and Accountability Act (HIPAA) I have received a copy of the NYC Department of Health and Mental Hygiene (DOHMH) Notice of Privacy. |
| <input checked="" type="checkbox"/> VIS Compliance | I have read or had explained to me the information contained in the Vaccine Information Statement (VIS) or the appropriate important statement about the disease(s) or vaccine(s) administered. |
| <input checked="" type="checkbox"/> Patient Bill of Rights | I have received a copy of the Patient Bill of Rights. |
| <input checked="" type="checkbox"/> Primary Care Provider Notification | I agree to provide my / my child's primary care provider with a copy of my / my child's immunization records. |
| <input checked="" type="checkbox"/> Consent for Services | I hereby grant permission to the NYC Department of Health and Mental Hygiene (DOHMH) to administer vaccine(s) as deemed necessary. |
| <input checked="" type="checkbox"/> CIR Authorization | I hereby grant permission to the NYC DOHMH to keep a record of my immunizations in the NYC Citywide Immunization Registry (CIR). |
| <input checked="" type="checkbox"/> Authorization to Release Information | I hereby grant permission to the NYC DOHMH to release information to Medicaid and other third-party health care payers, obtain information from NYC Human Resources Administration (NYCHRA) or Business Associate, if the information is necessary to pay for my medical care. |

[Cancel Encounter](#) [Save & Close](#) [Continue >](#)

Benefits of the CIR

- Consolidate immunizations across providers
- Directly query/report immunizations
 - Help find vaccines for compliance activities (QI/QA)
- Use decision support to see which immunizations are due
 - Patients receive only the vaccines they need
 - Patients do not miss opportunities for vaccination
- Pandemic preparedness

Benefits of the CIR (ctd).

- VFC management (if enrolled)
 - Order vaccine, make returns, complete reenrollment, perform inventory management
- Generate “My List” coverage reports
- Reminder/Recall functionality
 - Letters
 - Text messaging

MACRA

- Medicare Access and CHIP Reauthorization Act
 - Pays clinicians for the value and quality of care
- Merit-based Incentive Payment System (MIPS)
- 4 Categories
 - Quality (2017)
 - Improvement Activities (2017)
 - Advancing Care Information (2017)*
 - Cost (2018)

MACRA

- Advancing Care Information
 - Essentially replaces Medicare Meaningful Use program
 - Reporting to a Public Health and/or Clinical Data Registry= Bonus point



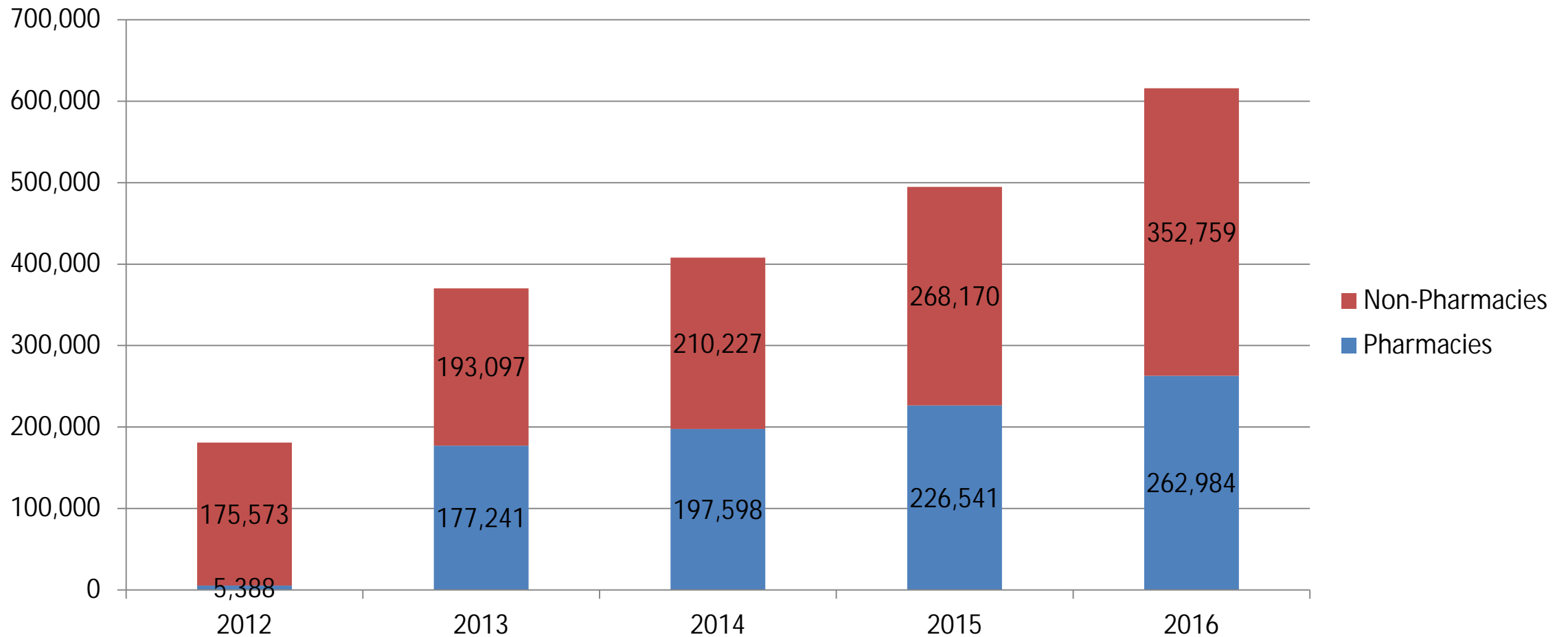
- Reporting to the CIR ensures maximum payment for Medicare patients

Reporting Options

- Electronically through your electronic health record (EHR)
 - Information is extracted from your encounter and sent to the CIR in real time via the HL7 Web Service
- Directly using Online Registry
 - Look up individual records, add vaccinations
- Electronically through batch files
 - Information is extracted from your system and sent to the CIR using a flat file

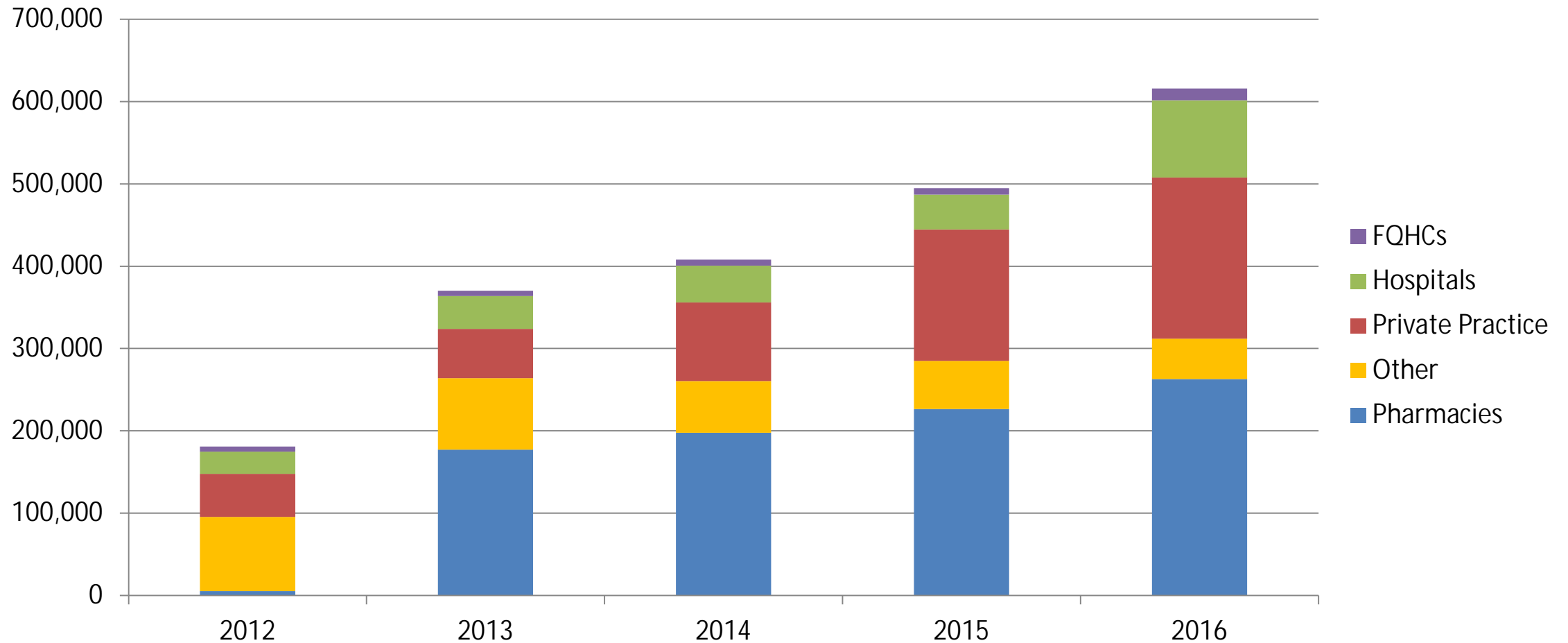
CIR Data

Adult Immunizations Reported to CIR



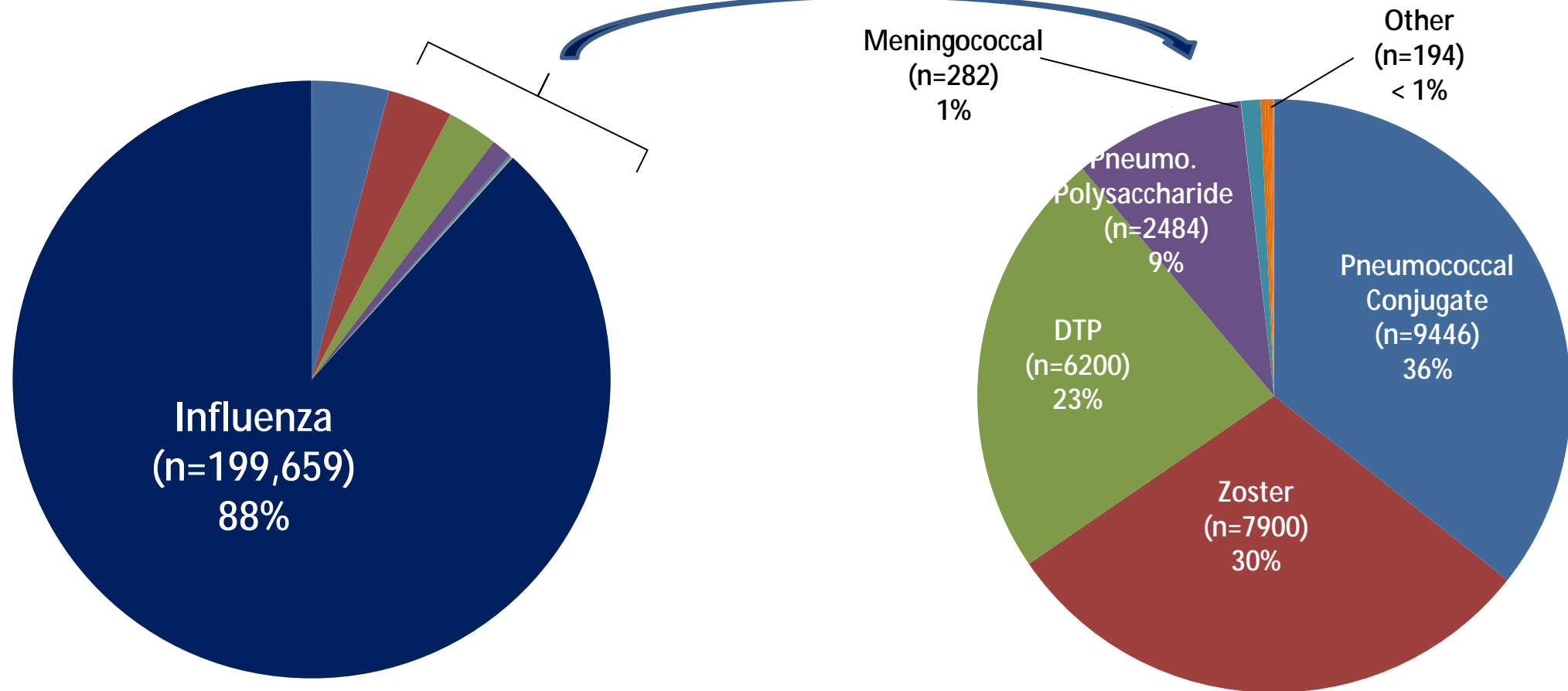
Source: CIR data, as of 1/11/2017

Adult Immunizations Reported to CIR



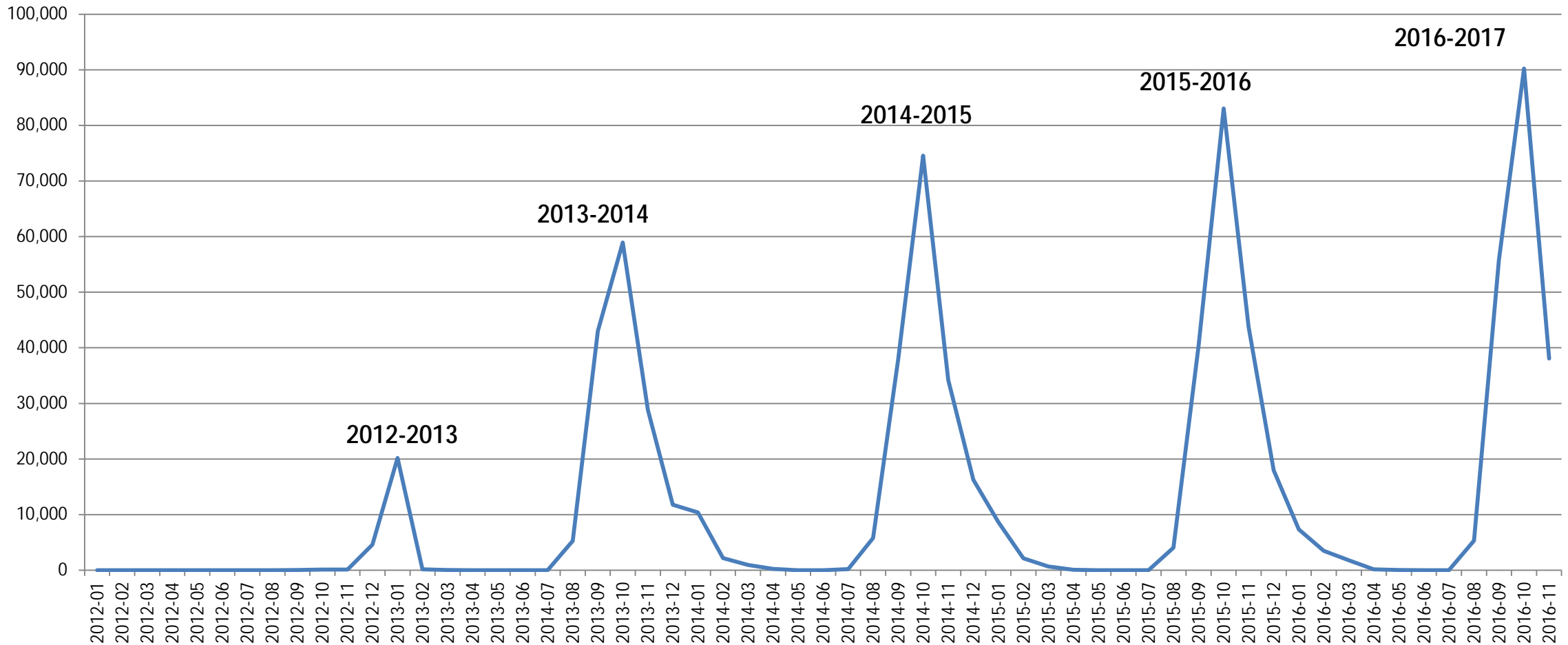
Source: CIR data, as of 1/11/2017

Pharmacy Reporting of Immunizations, 2016



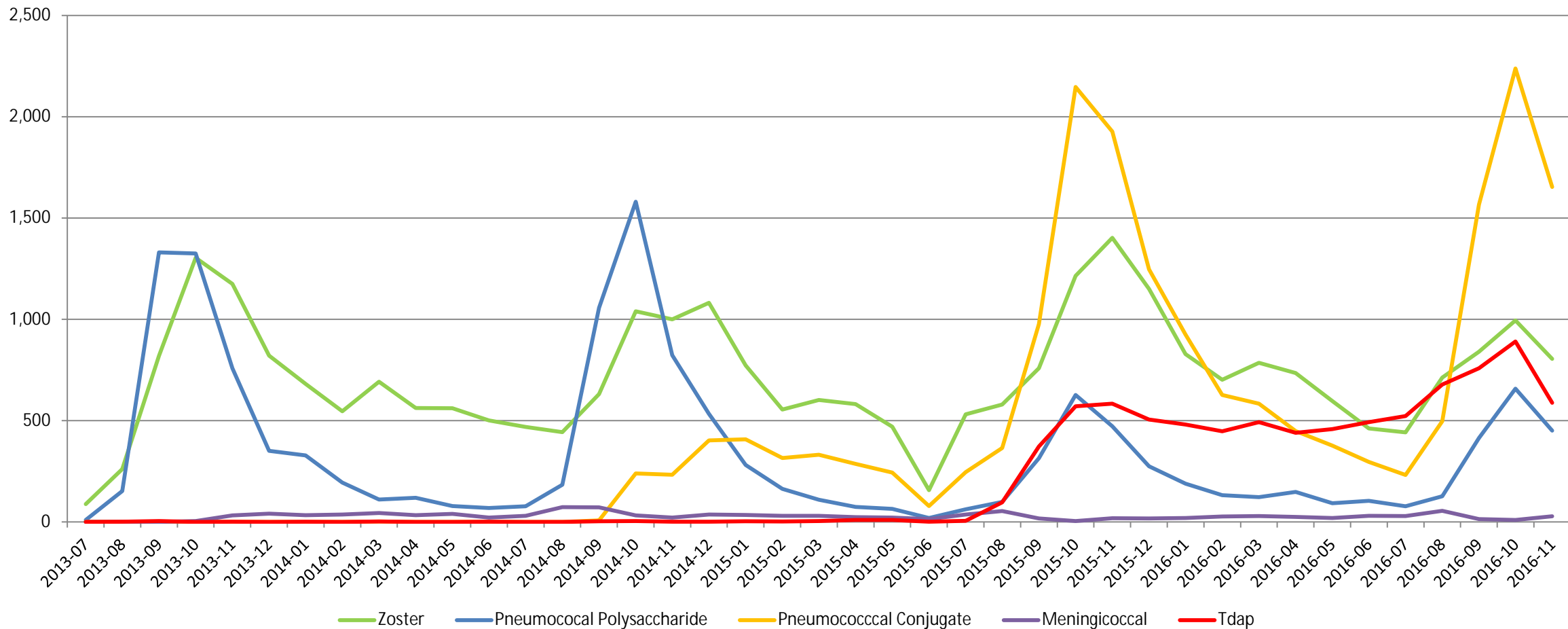
Source: CIR data, as of 11/23/2016

Pharmacy Reporting of Influenza Immunizations



Source: CIR data, as of 11/23/2016

Pharmacy Reporting of Immunizations Other than Influenza



Source: CIR data, as of 11/23/2016

Connect to the CIR

- Register at www.nyc.gov/health/cir
 - Sign form and fax to Online Registry
 - One person per site receives site security administrator (SSA) status
 - SSA will receive an email from CIR with an assigned User ID and link to create password
- Report via HL7 Web service!
- Call us at 347-396-2400

Questions?

Thank you!

DOHMH

www.nyc.gov/health/cir
cir@health.nyc.gov

Hotline: 347-396-2400

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kblaney@health.nyc.gov