

Adult Immunization Quality Improvement Project



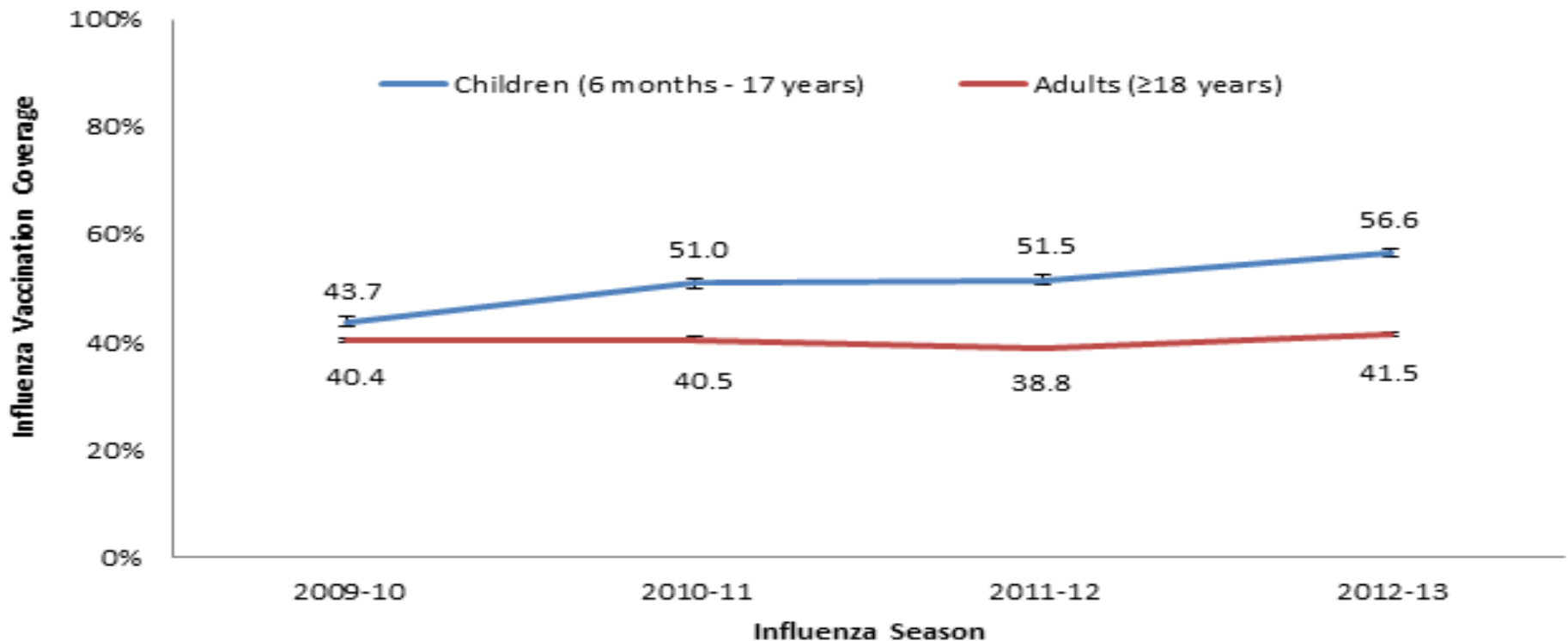
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Vaccination



- ❧ Influenza or “flu” vaccination is the most effective strategy to prevent people from getting the flu and potentially serious flu-related complications
- ❧ Over a period of 30 years, between 1976 and 2006, estimates of flu-associated deaths in the United States range from a low of about 3,000 to a high of about 49,000 people.
- ❧ For this reason, the Advisory Committee on Immunization Practices (ACIP) recommends flu vaccination for everyone 6 months and older.

Figure 1. Seasonal Flu Vaccination Coverage, by Age Group and Season, United States, 2009-2013



Error bars represent 95% confidence intervals around the estimates.

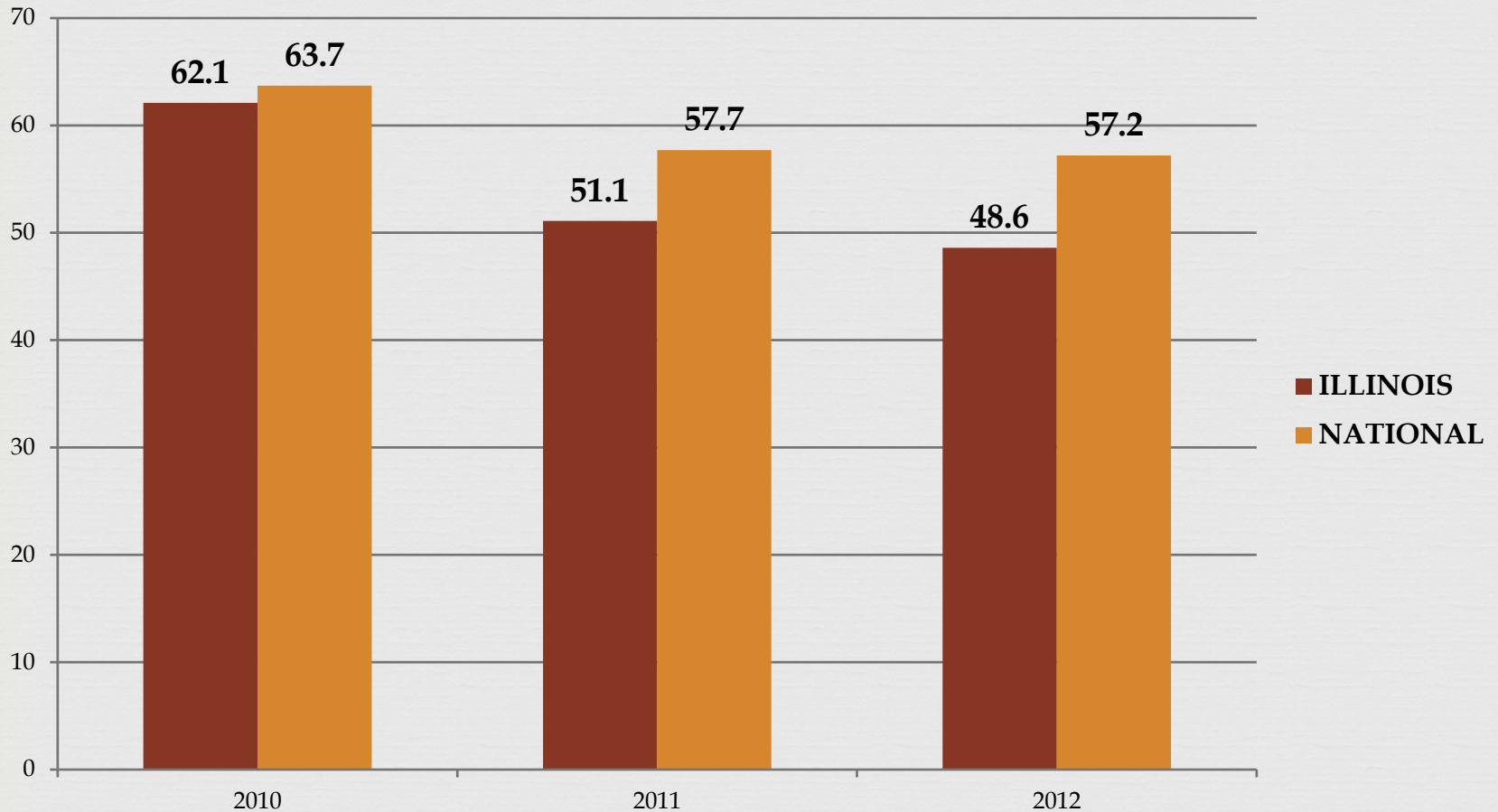
The 2009-10 estimates do not include the influenza A (H1N1) pdm09 monovalent vaccine.

Adult estimates for the 2011-12 and 2012-13 seasons reflect changes in methods of the Behavioral Risk Factor Surveillance System (BRFSS) (addition of cellular telephone sample and new weighting methods).

For children, 5.1 percentage points increase for the 2012-13 season compared to the 2011-12 season and 12.9 percentage points from the 2009-10 season

For adults only 2.7 percentage points increase in 2012-13 , and 1.1 percentage points from the 2009-10 season.

Adults aged 65 - 76 who have had a flu shot within the flu season



Flu season	ILLINOIS (%)	NATIONAL (%)
2010	62.1	63.7
2011	51.1	57.7
2012	48.6	57.2
2013	-	61.5

Data sources: National Immunization Survey (NIS) and Behavioral Risk Factor Surveillance System (BRFSS)

Pneumonia Vaccination

❧ Pneumococcal pneumonia

- ❧ the most common clinical presentation of pneumococcal disease in adults.
- ❧ 900,000 Americans get pneumococcal-pneumonia each year and 5 to 7% die from it.
- ❧ Up to 400,000 hospitalizations per year

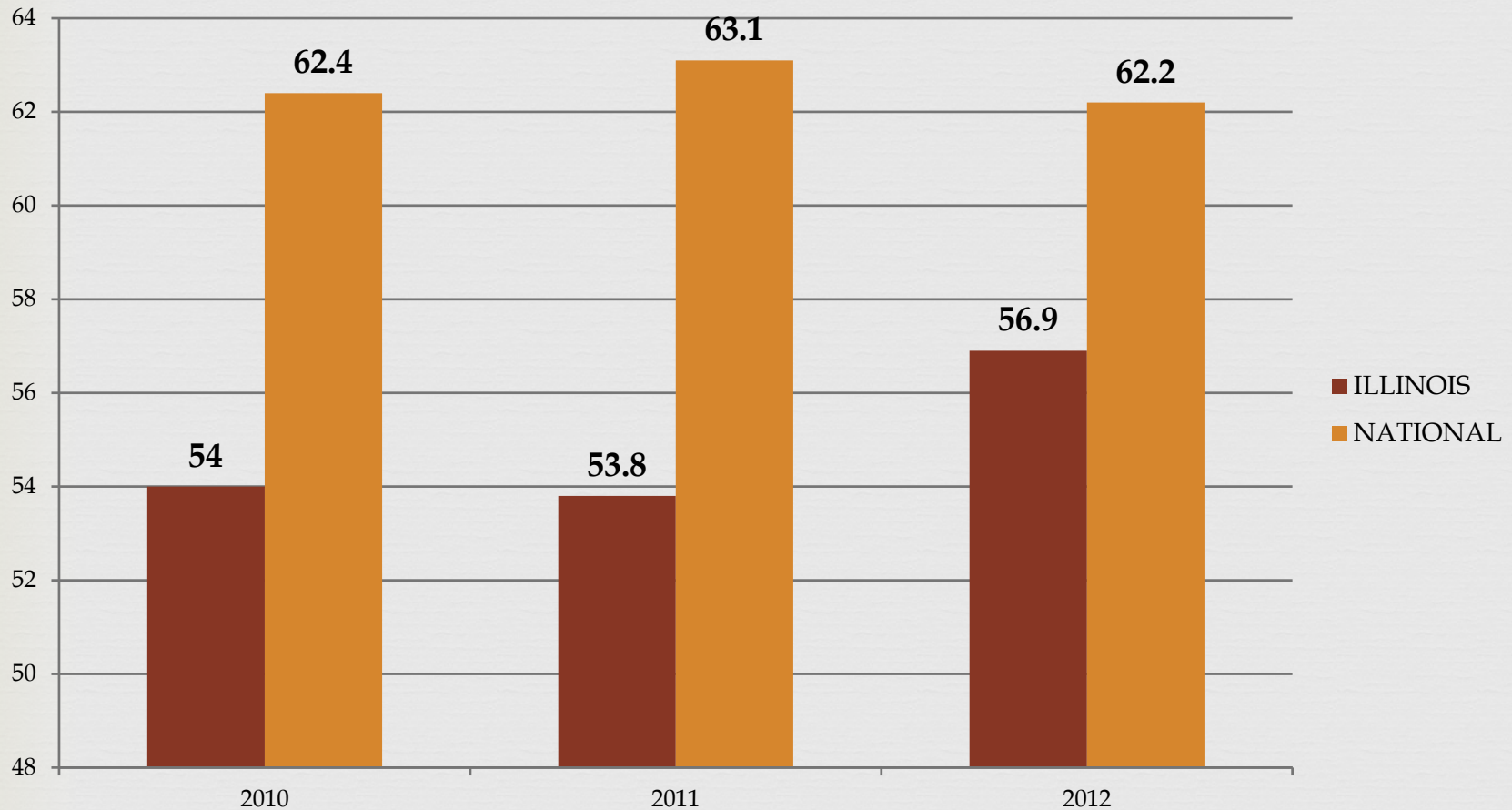
❧ Invasive pneumococcal disease (bacteremia and meningitis)

- ❧ 90% of invasive pneumococcal disease cases are in adults.
- ❧ More than 12,000 cases of pneumococcal bacteremia occur each year and of those cases about 15% will die from the infection.
- ❧ About 3,000 cases of pneumococcal meningitis occur each year and of those cases 10% will die from the infection.

❧ Pneumococcal vaccines

- ❧ Most (>95%) pneumococcal deaths in the United States are in adults.
- ❧ About 70 million adults at highest risk remain unvaccinated, leaving them vulnerable.

Adults aged 65 - 76 who ever had a pneumonia vaccination 2010 - 2012



YEAR	ILLINOIS	NATIONAL
2010	54.0	62.4
2011	53.8	63.1
2012	56.9	62.2
2013	-	-

Data sources: National Immunization Survey (NIS) and Behavioral Risk Factor Surveillance System (BRFSS)

Flu vaccines:

The **trivalent flu vaccine** protects against two influenza A viruses and an influenza B virus.

1. Standard dose trivalent shots that are manufactured using **virus grown in eggs**. These are approved for people ages 6 months and older. There are different brands of this type of vaccine, and each is approved for different ages.
2. A standard dose trivalent shot that is **egg-free**, approved for people 18 - 49 years of age.
3. A **high-dose** trivalent shot, approved for people 65 and older.
4. A standard dose **intradermal** trivalent shot

The **quadrivalent flu** vaccine protects against two influenza A viruses and two influenza B viruses.

1. A standard dose quadrivalent shot
2. A standard dose quadrivalent flu vaccine, given as a nasal spray, approved for healthy* people 2 through 49 years of age

(*"Healthy" indicates persons who do not have an underlying medical condition that predisposes them to influenza complications.)

Trivalent flu vaccine

Contraindications: People who have ever had a severe allergic reaction to eggs

Influenza, recombinant (RIV) Vaccine

- RIV does not contain any egg protein.
- Severe allergic reaction (e.g., anaphylaxis) after previous dose of RIV or to a vaccine component.

Precautions: Moderate or severe acute illness with or without fever. History of Guillian-Barré Syndrome within 6 weeks of previous influenza vaccination.

Pneumococcal Vaccine:

1. Pneumococcal conjugate vaccine (PCV13)
 2. Pneumococcal polysaccharide vaccine (PPSV23).
- PCV13 is routinely given to infants as a series of 4 doses, one dose at each of these ages:
 - 2 months, 4 months, 6 months, and 12 through 15 months.
 - Children who miss their shots or start the series later should still get the vaccine.
 - The number of doses recommended and the intervals between doses will depend on the child's age when vaccination begins
 - PCV13 may be given at the same time as other vaccines, except for PPSV23 and meningococcal conjugate vaccine.
 - For children who are recommended to receive PPSV23 in addition to PCV13, PPSV23 should be administered at least 8 weeks after the child has received the final dose of PCV13.

PCV13 vaccine in adults

Adults 19 years of age or older with certain medical conditions, and who have not previously received PCV13.

1. Cerebrospinalfluid (CSF) leaks
2. Cochlear implant(s)
3. Sickle cell disease and other hemaglobinopathies
4. Functional or anatomic asplenia
5. Congenital or acquired immunodeficiencies
6. HIV infection
7. Chronic renal failure
8. Nephrotic syndrome
9. LeukemiaHodgkin disease
10. Generalized malignancy
11. Long-term immunosuppressive therapy
12. Solid organ transplant
13. Multiple myeloma

Adults with one of the above listed conditions who have not received any pneumococcal vaccine, should get a dose of PCV13 first and should also continue to receive the recommended doses of PPSV23

Which children and adults need the PPSV23 vaccine?

- ☞ All adults 65 years of age and older.
- ☞ Any adult 19 through 64 years of age who is a smoker or has asthma.
- ☞ Residents of nursing homes or long-term care facilities
- ☞ **Anyone 2 through 64 years of age who has**

Long-term health problem	Disease or condition that lowers the body's resistance	Drug or treatment that lowers the body's resistance
<ol style="list-style-type: none"> 1. Heart disease, 2. lung disease 3. Sickle cell disease 4. Diabetes 5. Alcoholism 6. Cirrhosis 7. Leaks of cerebrospinal fluid 8. Cochlear implant 	<ol style="list-style-type: none"> 1. Hodgkin's disease 2. lymphoma /leukemia 3. Multiple myeloma 4. kidney failure 5. Nephrotic syndrome 6. HIV infection or AIDS 7. Damaged spleen, or no spleen 8. Organ transplant 	<ol style="list-style-type: none"> 1. Long-term steroids 2. Certain cancer drugs 3. Radiation therapy

Pneumococcal conjugate (PCV13) and Pneumococcal polysaccharide (PPSV23)

Contraindications: Severe allergic reaction (e.g., anaphylaxis) after a previous dose or to a vaccine component, including to any vaccine containing diphtheria toxoid.

Precautions: Moderate or severe acute illness with or without fever.

Adult Immunization Quality Improvement Project



Abstract



- ❧ **Objective:** The quality metrics regarding prevention & screening are required for documentation for pay for performance.
- ❧ It is a quality improvement project to examine the effectiveness quality metrics for adult immunizations at the UICOMP Family Medical Center.
- ❧ It is a retrospective chart review
- ❧ This quality improvement project provides minimal risk to patients.

Research setting : Outpatient /Family medical clinic in Peoria, Illinois

Duration of observation : 4 years 3 months (2010 -01 to 2014-03)

Sample size: Include

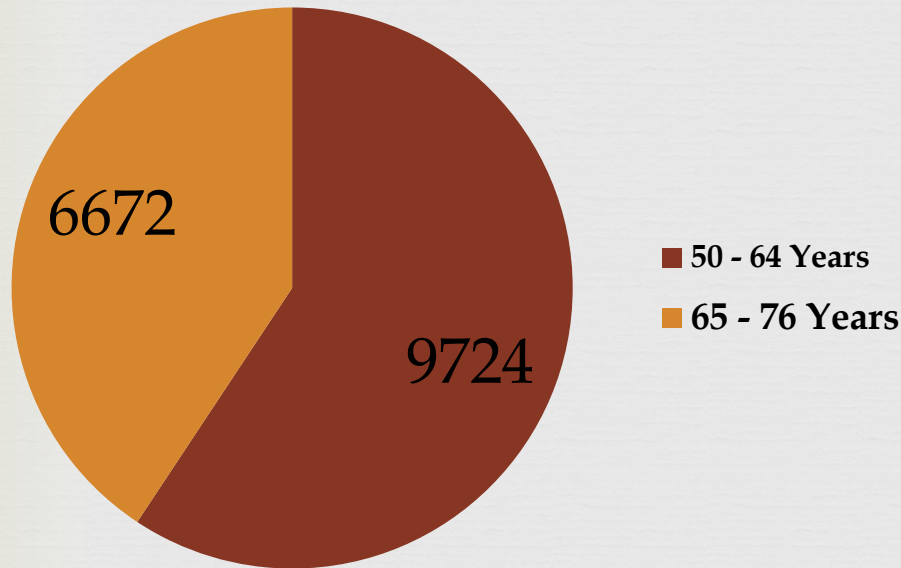
1. Total number patients aged 65-76 years
2. Patients aged 50 – 64 years who met inclusion criteria listed below.

Inclusion Criteria

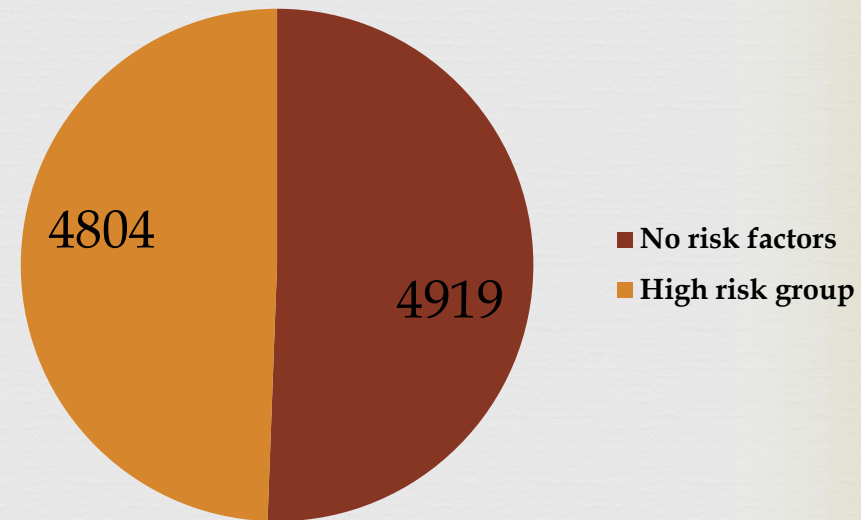
1. 50 – 64 year old
2. Sex (Male or Female)
3. Immunocompromising conditions (CKD, HIV or AIDS; Splenectomy
4. Long-term health problems (CAD, MI, COPD, Asthma, sickle cell disease, diabetes, Alcohol abuse, Cirrhosis)
5. Tobacco abuse

There were no other patient identifiers

50 - 76 aged patients



50 - 64 aged patients



Total number of patient encounters with age between 50 - 76 years visited FMC between 4 years 3 months = **16,396** patients

Sub age groups

65 - 76 years = 6,672 patients

50 - 64 years = 9,724 patients

50 - 64 years with inclusion criteria = 4919 (50 percent)

Data collection

- Adults aged 65 - 76 who had flu shot in flu season 2010/11 - 2013/14
- Adults aged 65 - 76 who ever had a pneumonia vaccination 2010 - 2013
- Adults aged 50- 64 with inclusion criteria who ever had a pneumonia vaccination 2010 - 2013

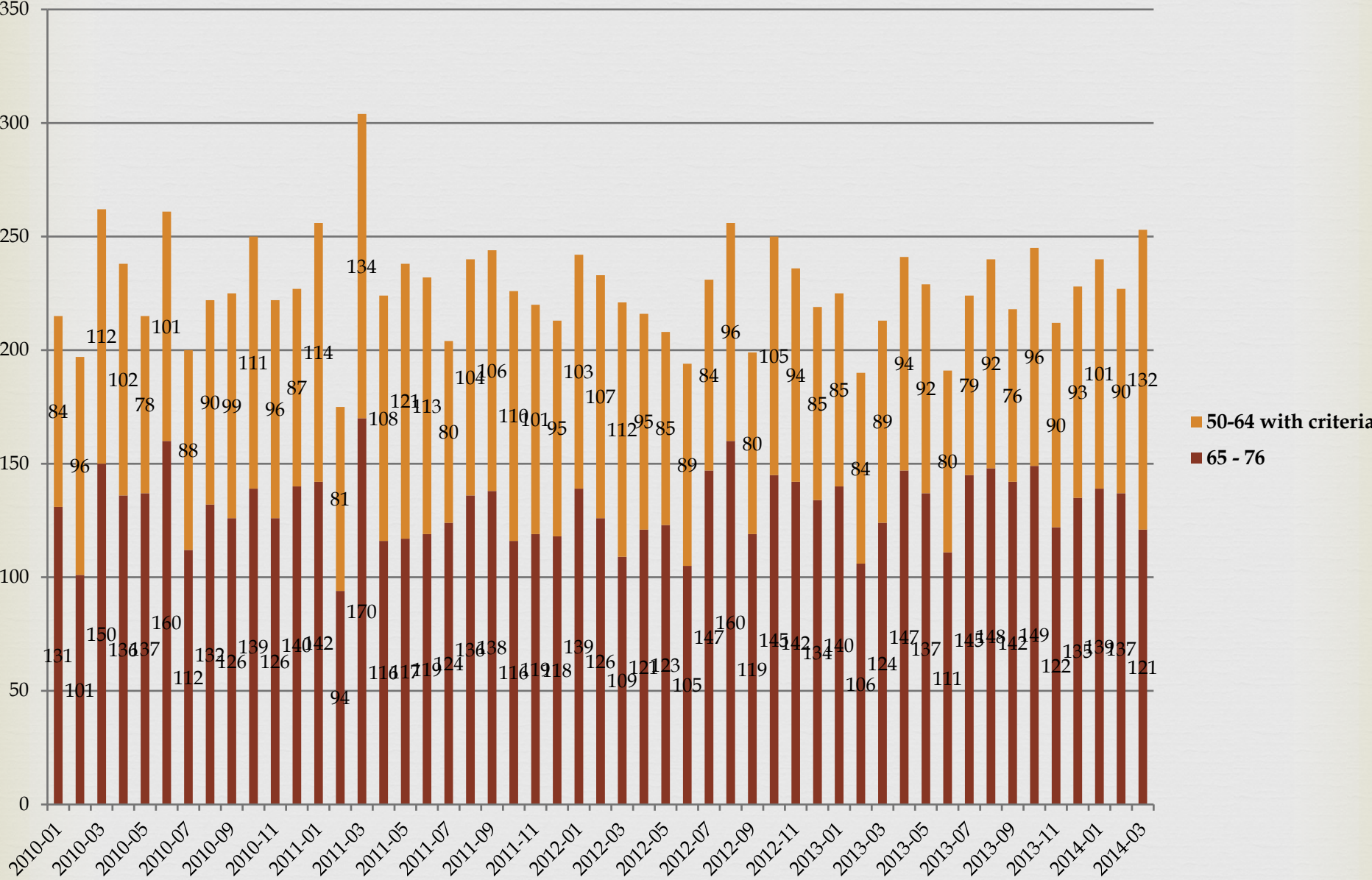
Methods:

- Compared with national & Illinois average

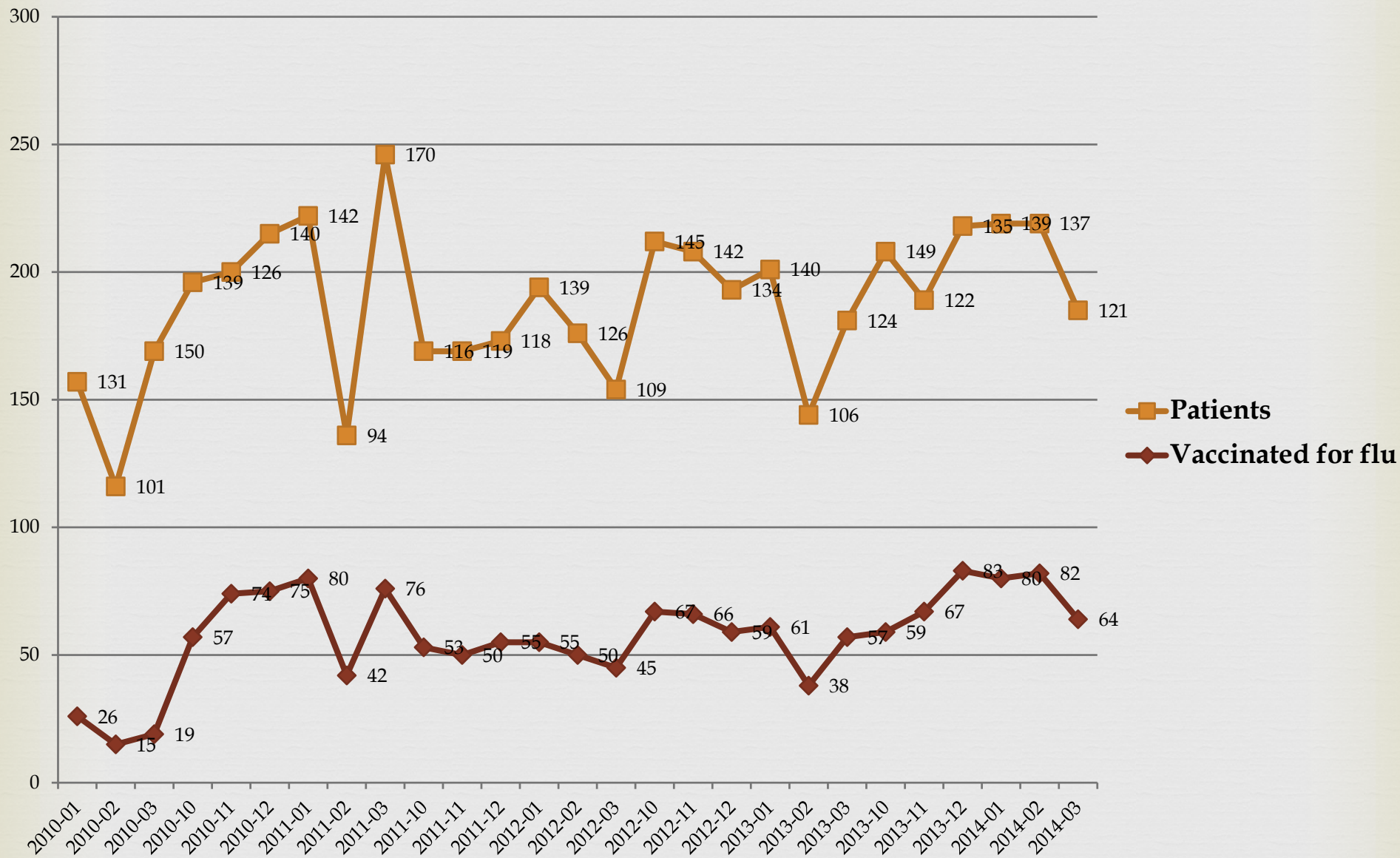
Quality metric screens' at FMC introduced in September 2011

- Compare the difference in percent before and after introduction of HAC
Quality metric screen

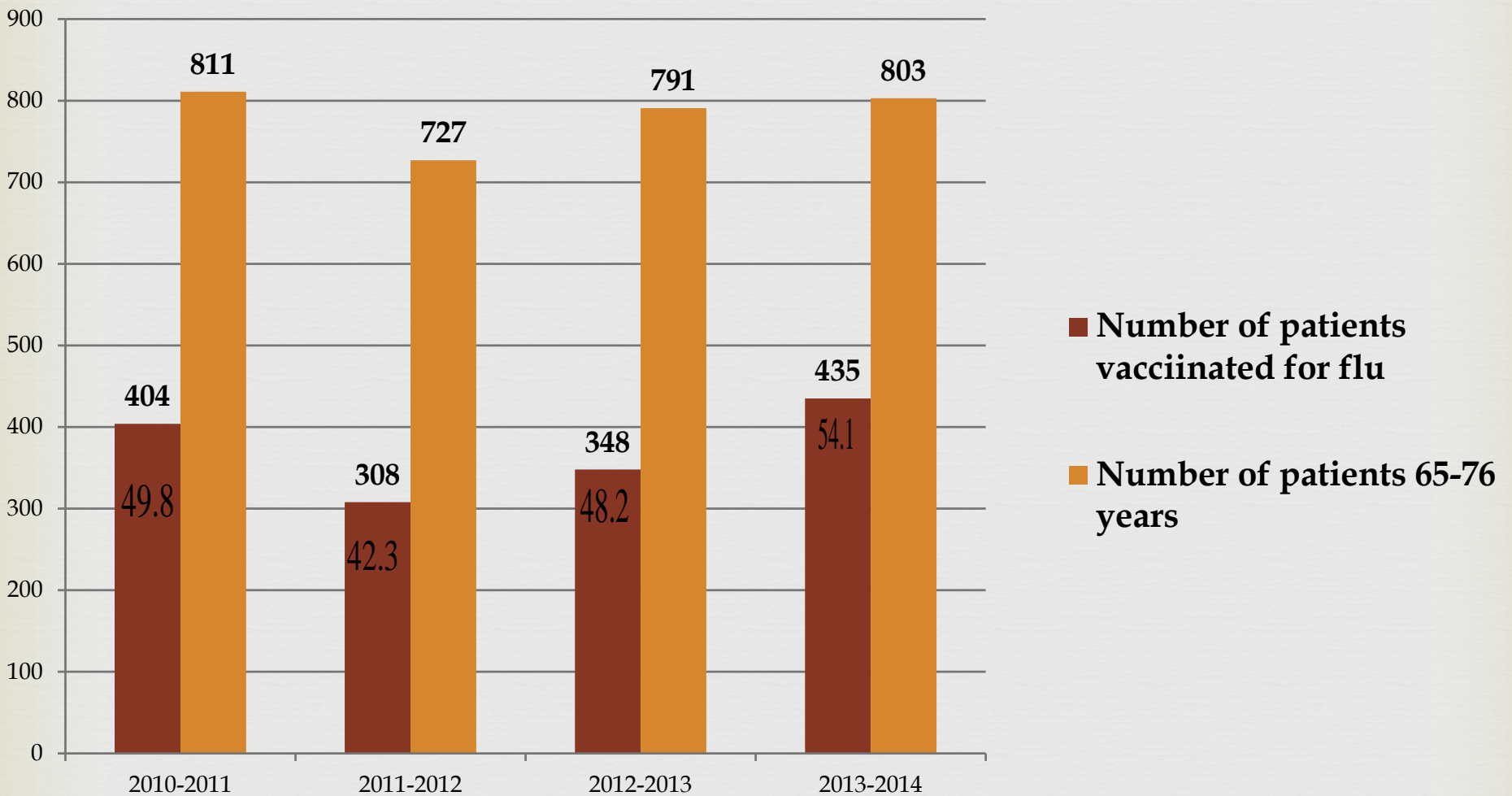
Number of patients aged 65 - 76 and 50-64 years who met inclusion criteria



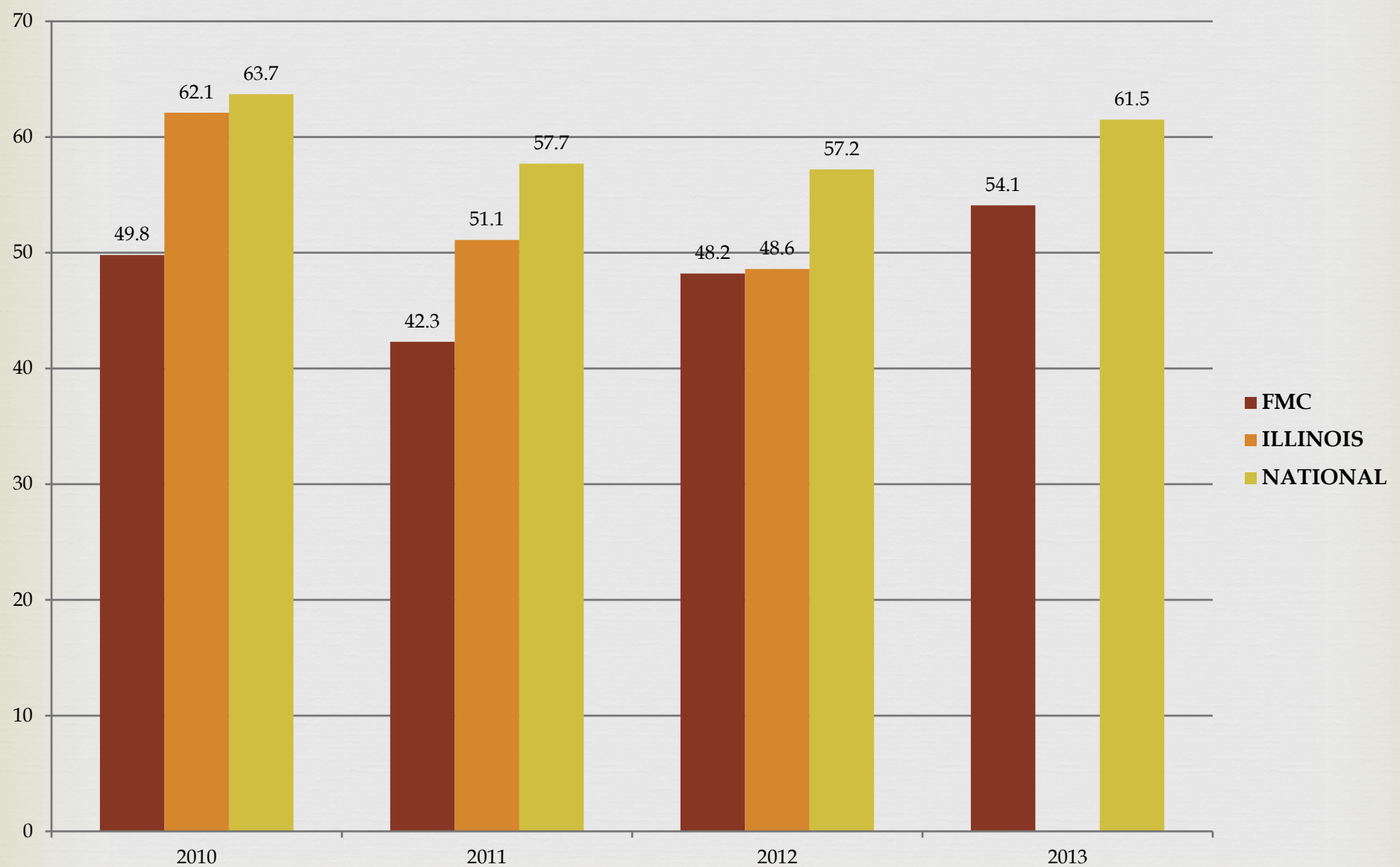
Number of patients aged 65 - 76 received flu vaccine during past four flu seasons



Number of patients aged 65 - 76 received flu vaccine during past four flu seasons

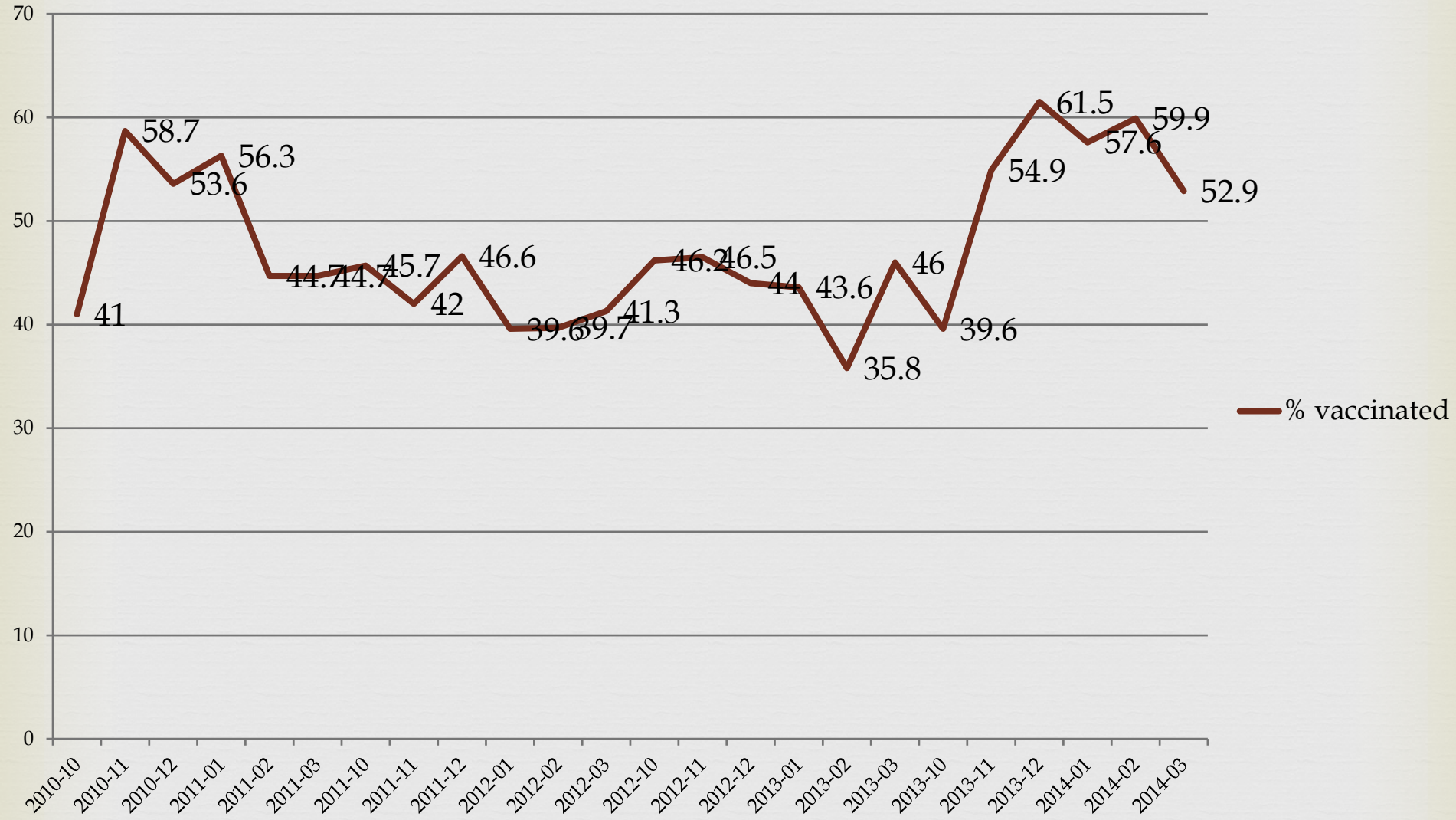


Compared data with state and national average

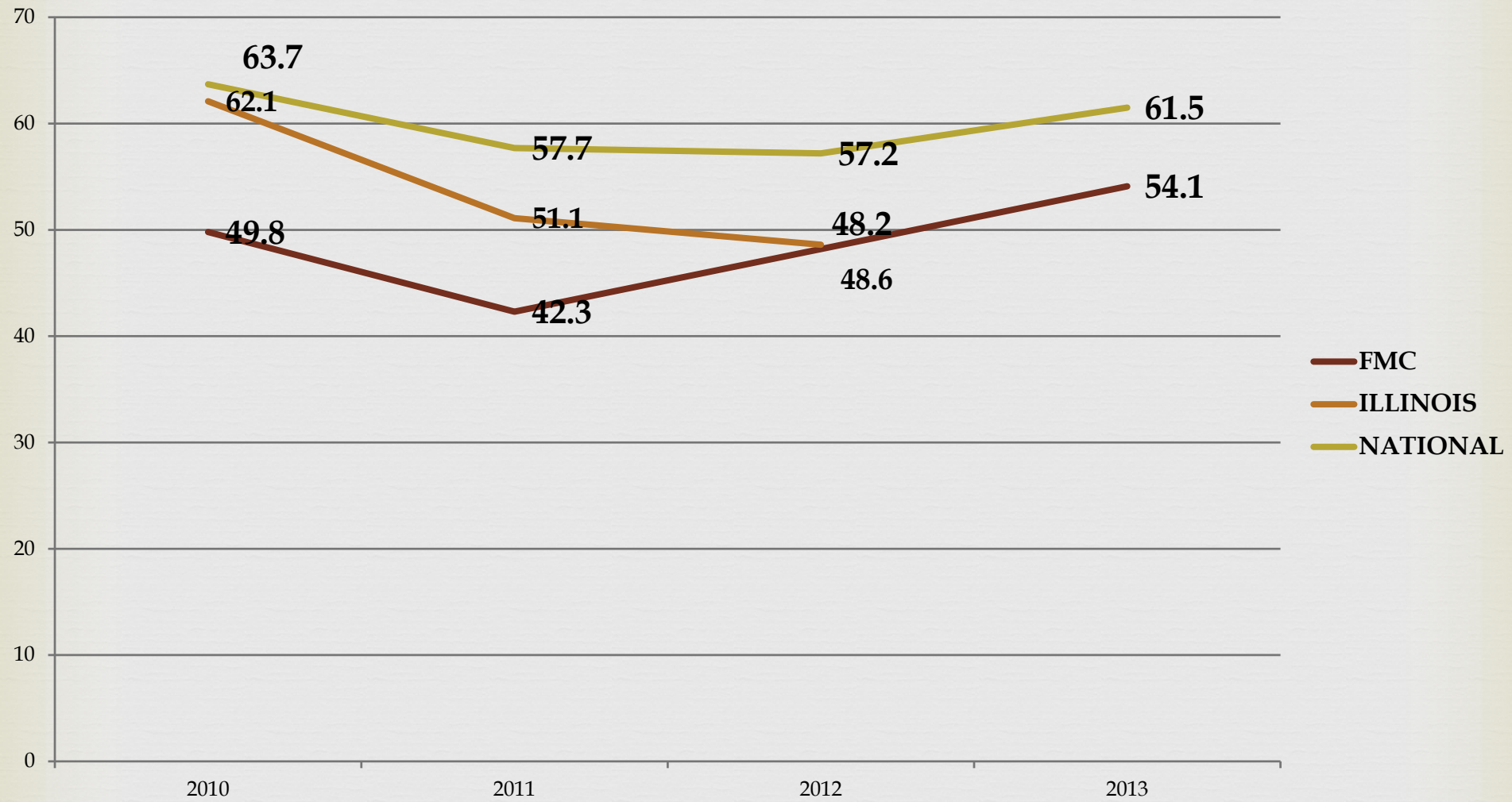


Difference in percent before and after introduction of HAC Quality metrics

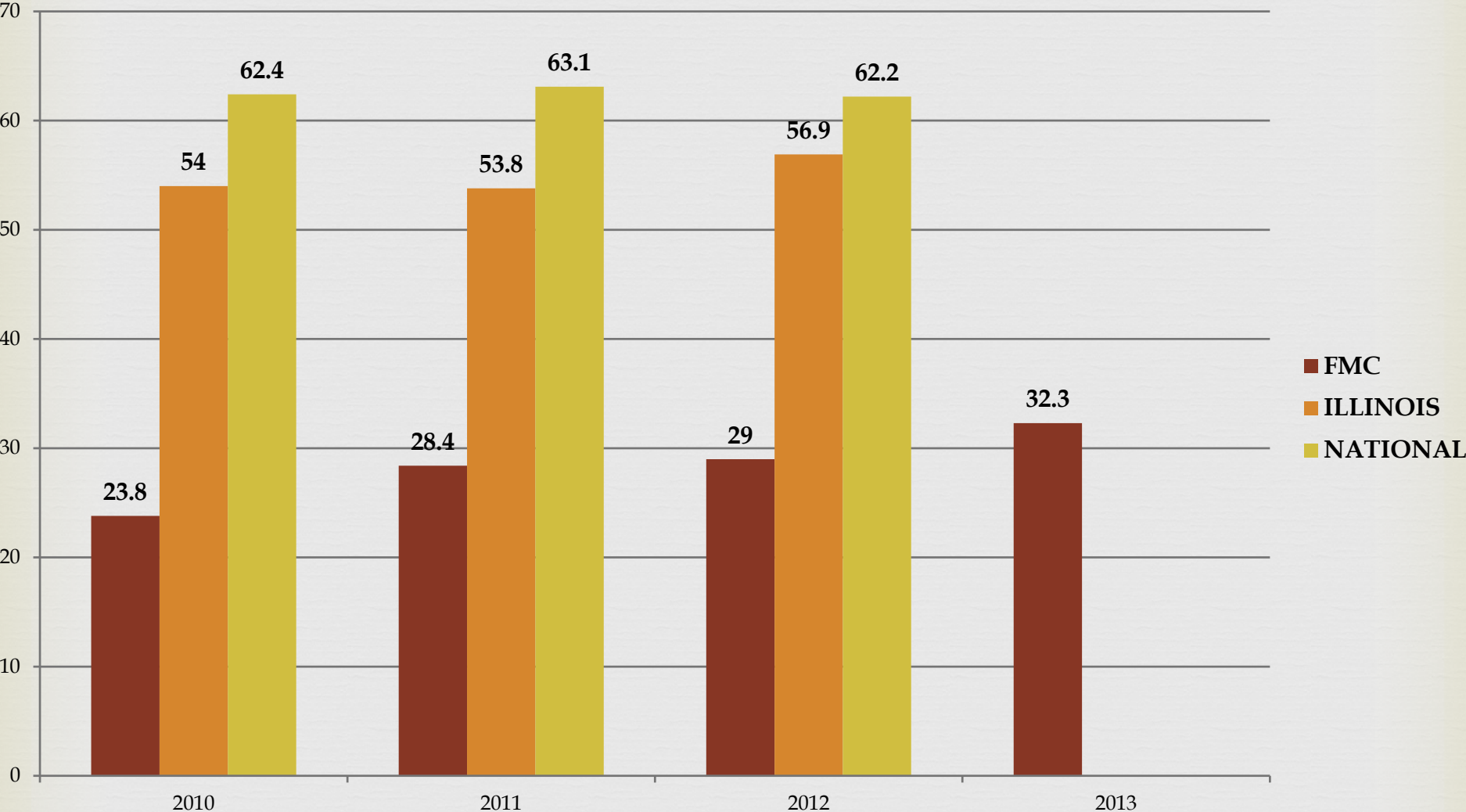
Percent of patients (65-76 years) vaccinated for flu



Difference in percent before and after introduction of HAC Quality metrics

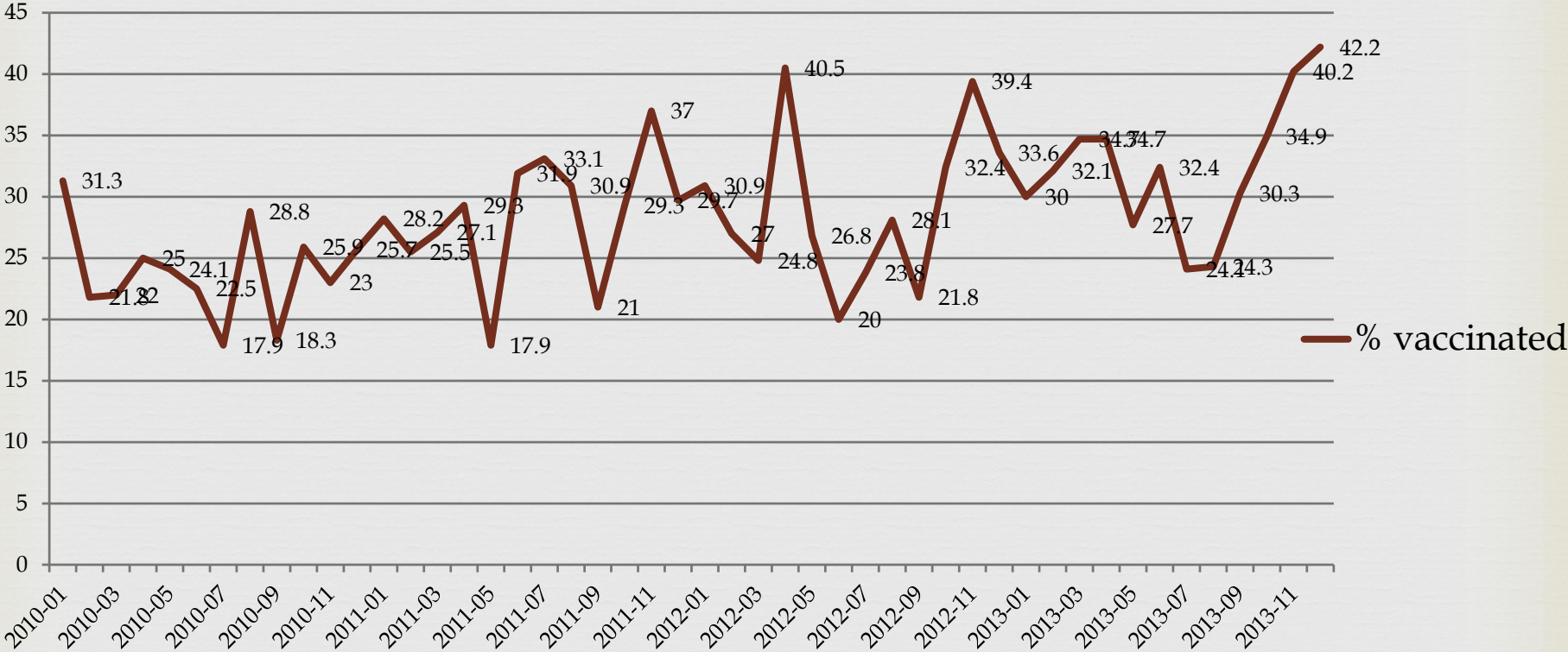


Adults aged 65 - 76 with single pneumonia vaccination 2010 - 2013

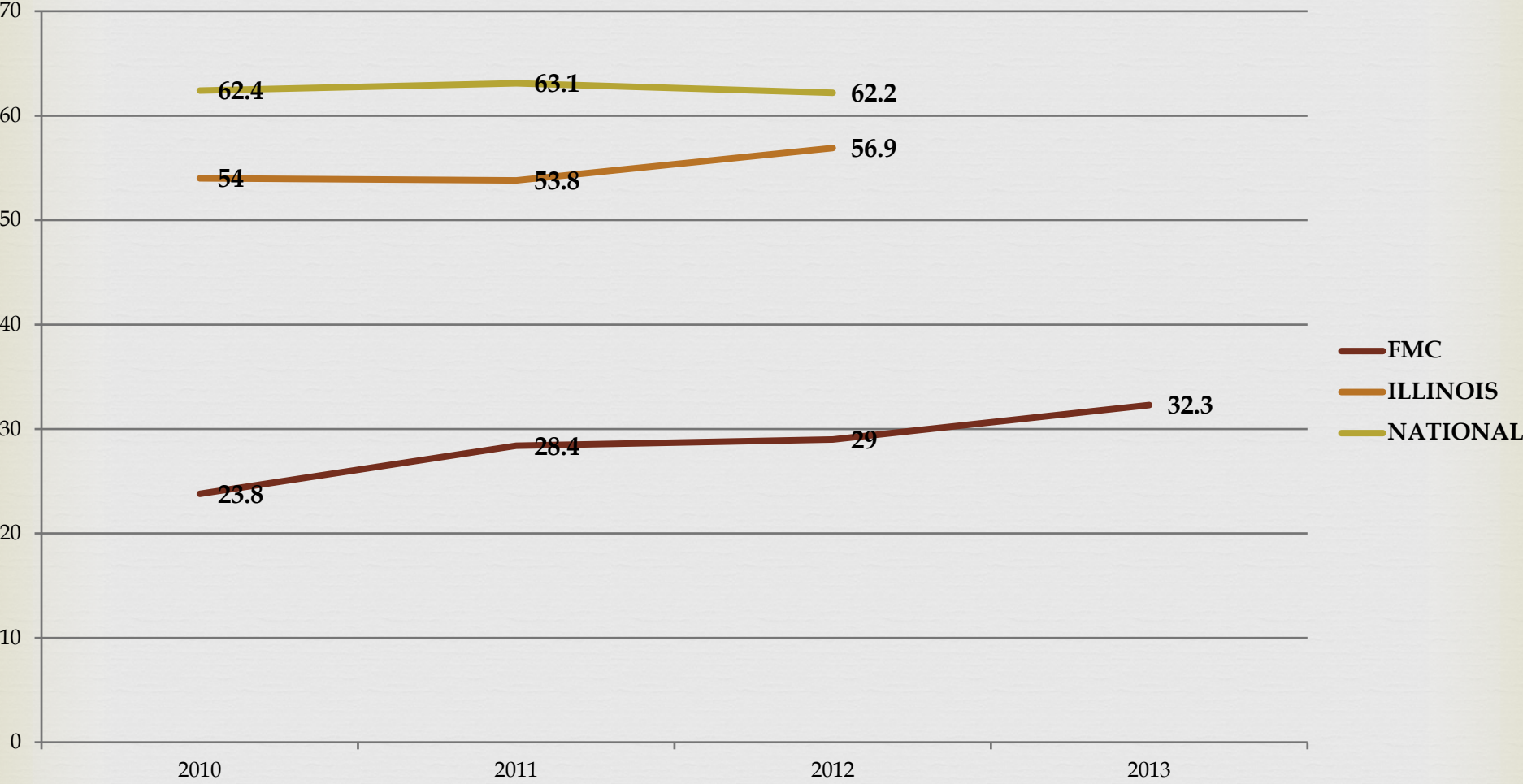


Difference in percent before and after introduction of HAC Quality metrics

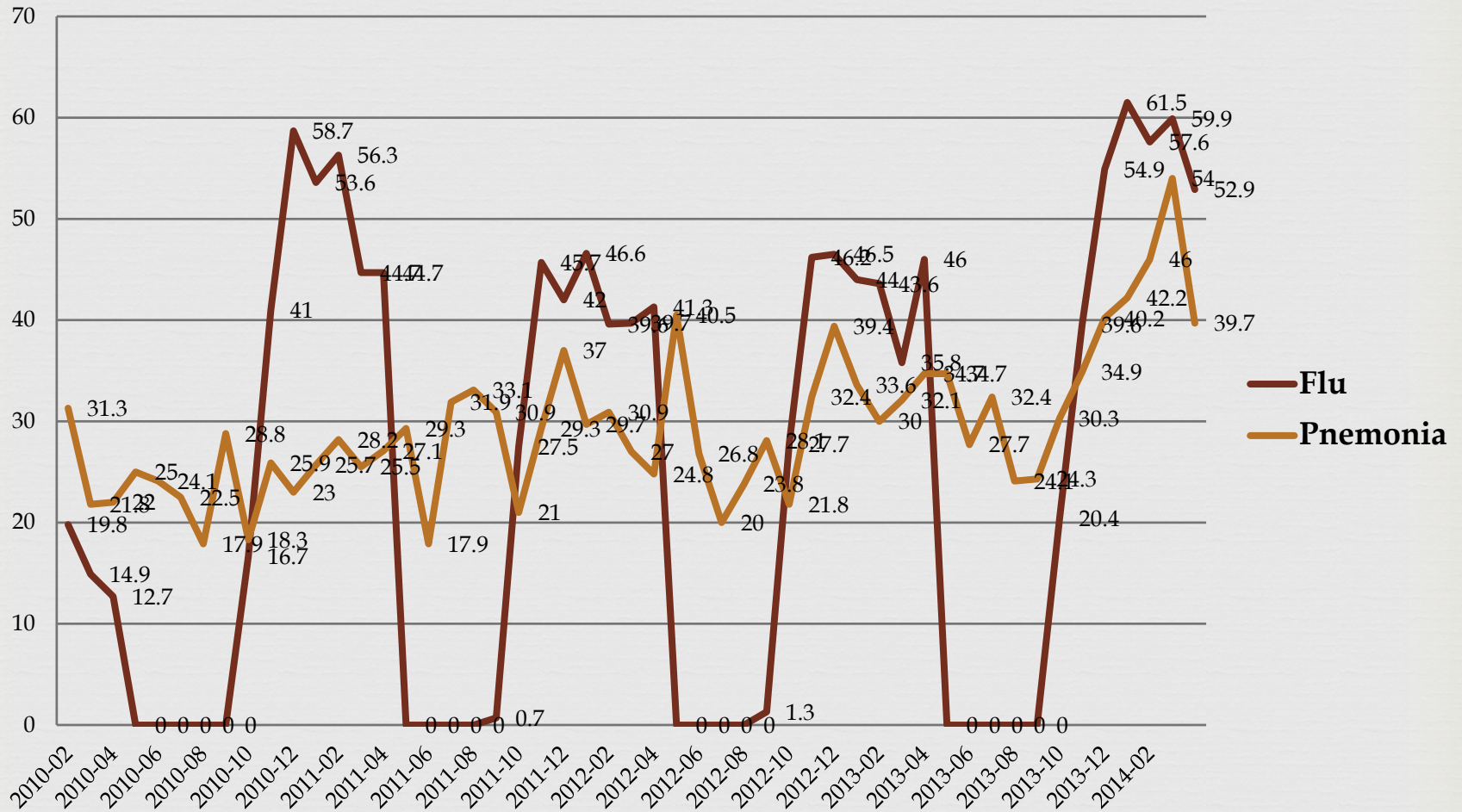
Percent of patients (65-76 years) who ever had Pneumonia vaccine



Difference in percent before and after introduction of HAC Quality metrics



Status of Influenza and Pneumonia vaccine at FMC



Observations



- ❧ Our vaccination status is below average for both flu and pneumonia
- ❧ Pneumonia vaccination rate decreases during non flu seasons
- ❧ Vaccination status for both flu and pneumonia was initially decreased after introduction of quality metrics (September 2011) than it started increasing.
- ❧ High risk patients eligible for Pneumovax between age 50-64, are not receiving it

Study limitations



- ❧ All risk factors not included
- ❧ Medication hx- difficult to include in data pull such as long term steroids, chemo-radiation treatments
- ❧ No accurate system to document refusal of vaccination
- ❧ No system to document if patients received vaccinations at another location than FMC
- ❧ High risk data group started at age 50 instead of 19
- ❧ Unable to pull the data from HAC for people 50 – 64 with inclusion criteria
- ❧ Are we even asking high risk group about pneumovax?

Future improvement?



- ❧ Track specific provider rates and implement into dashboards to provide immediate feedback
- ❧ Use EPIC for more accurate data extraction
- ❧ Document refusal and if vaccine received at another institution

GOAL

- Create awareness regarding vaccination status

References

1. <http://www.cdc.gov/flu/fluview/coverage-1213estimates.htm>
2. [Early release of selected estimates based on data from the 2012 National Health Interview Survey,](#)
3. [2004 National Nursing Home Survey, Residents, table 33B \[PDF - 719 KB\]](#)
4. <http://www.cdc.gov/vaccines/vpd-vac/pneumo/vacc-in-short.htm>
5. Adult immunization schedule www.cdc.gov/vaccines/recs/schedule/adult-schedule.htm
6. CDC vaccines webpage [www.cdc.gov/vaccines/default.](http://www.cdc.gov/vaccines/default.htm)
7. <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx>
8. UpToDate http://www.uptodate.com/contents/approach-to-immunizations-in-healthyadults?source=search_result&search=adul+vaccination&selectedTitle=1%7E37
<http://www.cdc.gov/flu/keyfacts.htm>



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