

# IDENTIFYING TARGET POPULATION FOR ADULT IMMUNIZATION IMPROVEMENT PROJECT BY USING **USIS** DATA



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# It began with a request from Salt Lake County Health Department (SLCoHD)

We need  
GIS maps identifying zip codes  
with the lowest  
adult immunization rates  
in Salt Lake County, please!

We will target these areas for our adult  
immunization rates improvement  
campaign.

Sure!  
We can do that.



# Expected results

- GIS mapping has traditionally been used for childhood immunization rate assessments to identify pockets of need. The same principle should apply.
- Well known lower socio-economic areas in Salt Lake County should appear on the map with lowest immunization rates.

# SLCoHD data request specifics

- **Adults**

Age 19 and older as of January 1, 2013 with at least one vaccine on their USIIS record

- **Age Groups**

Younger adults (age 19-65) and older adults (age 66 and older)

- **Vaccination period**

Between Jan 1, 2013 and Dec 31, 2013

- **Immunizations**

Flu, Tdap, Pneumococcal and Zoster

# First, baseline data

Overview: age distribution of USIIS patient records with addresses with Salt Lake County zip codes who were 19+ years old and received a Flu, Tdap, Pneumococcal, or Zoster shot in 2013.

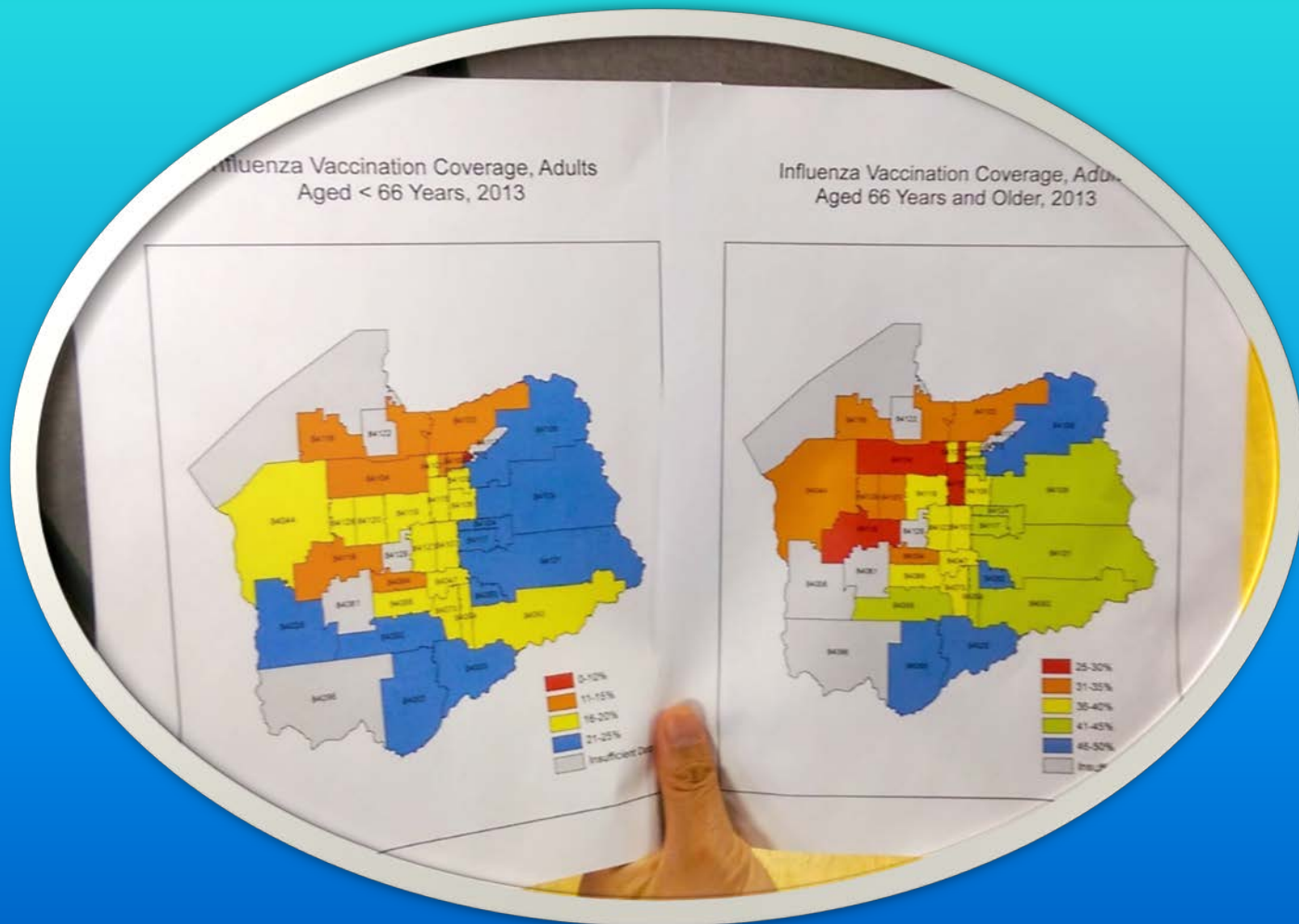
								Total		Age 19-65			Age 66+		
								Total Count	% of Denom	19-65 yrs	% of Vaccine Type	% of Denom	66+ yrs	% of Vaccine Type	% of Denom
<b>Denominator</b> (Total Count)	Total number of distinct USIIS patients who were 19+ years old as of 01/01/2013, with address containing Salt Lake County zip codes, and have at least one (any) vaccine on their record							572,616	100%	486,917	n/a	85.0%	85,699	n/a	15.0%
<b>Flu</b>	Number of distinct patients who were 19+ years old as of 01/01/2013 and had <u>at least one flu</u> shot in 2013							125,495	21.9%	91,735	73.1%	18.8%	33,760	26.9%	39.4%
<b>Tdap</b>	Number of distinct patients who were 19+ years old as of 01/01/2013 and had <u>at least one Tdap</u> shot in 2013							26,681	4.66%	23,598	88.4%	4.8%	3,083	11.6%	3.6%
<b>Pneumo</b>	Number of distinct patients who were 19+ years old as of 01/01/2013 and had <u>at least one Pneumo</u> shot in 2013							8,154	1.42%	4,724	57.9%	1.0%	3,430	42.1%	4.0%
<b>Zoster</b>	Number of distinct patients who were 19+ years old as of 01/01/2013 and had <u>at least one Zoster</u> shot in 2013							6,340	1.11%	3,380	53.3%	0.7%	2,960	46.7%	3.5%

Are adults informed about Tdap, Pneumococcal, and Zoster immunization recommendations?

# Distributing immunization rates into 69 zip codes...Problems!!!

- Not all patients had zip codes in their records.
- About 30% of zip codes had less than 30 patients and so could not be included in the analysis.
- Some patients had business or clinic zip codes as their home zip codes.
- Among the zip codes with lower immunization rates, rates were not significantly different.
- The lower socio-economic zip codes did not have the lowest, or as low immunization rates as expected.

# Maps created based on the USIIS data. Should seeing be believing???



# AAAAAUGH!



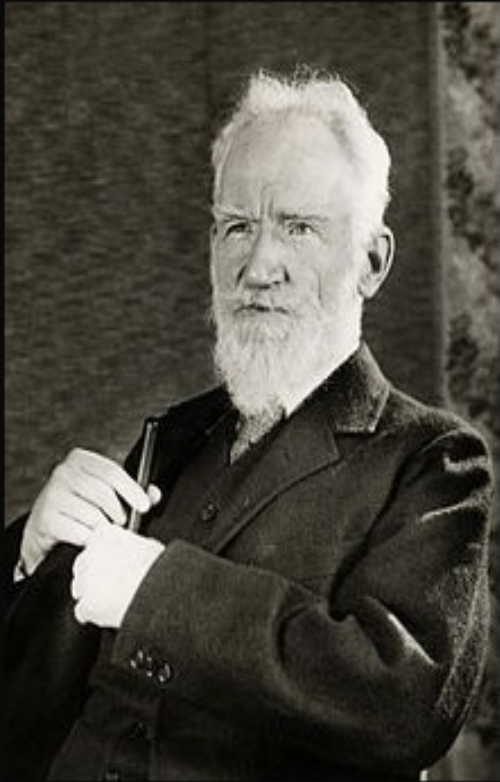
## With a little help from C. S. Lewis



If you make the same guess often enough it ceases to be a guess and becomes a Scientific Fact. This is the inductive method.

(C. S. Lewis)

## And from George Bernard Shaw



The moment we want to believe something, we suddenly see all the arguments for it, and become blind to the arguments against it.

(George Bernard Shaw)

# Reflections

- Perhaps we have been too fixated on geographic areas and the assumption that lower socio-economic areas  $\Rightarrow$  need intervention.
- Adults are more geographically mobile than children. Adult immunization rates may not be bounded by their residential areas.
- Accuracy of zip code data affects broad results. Relying solely on zip code information could lead to ineffective intervention efforts.

# A new demographic approach data specifications by USIIS

- **Six adult age groups**

Ages 19-30, 31-40, 41-50, 51-60, 61-70 and 71+

- **Gender**

Male and Female

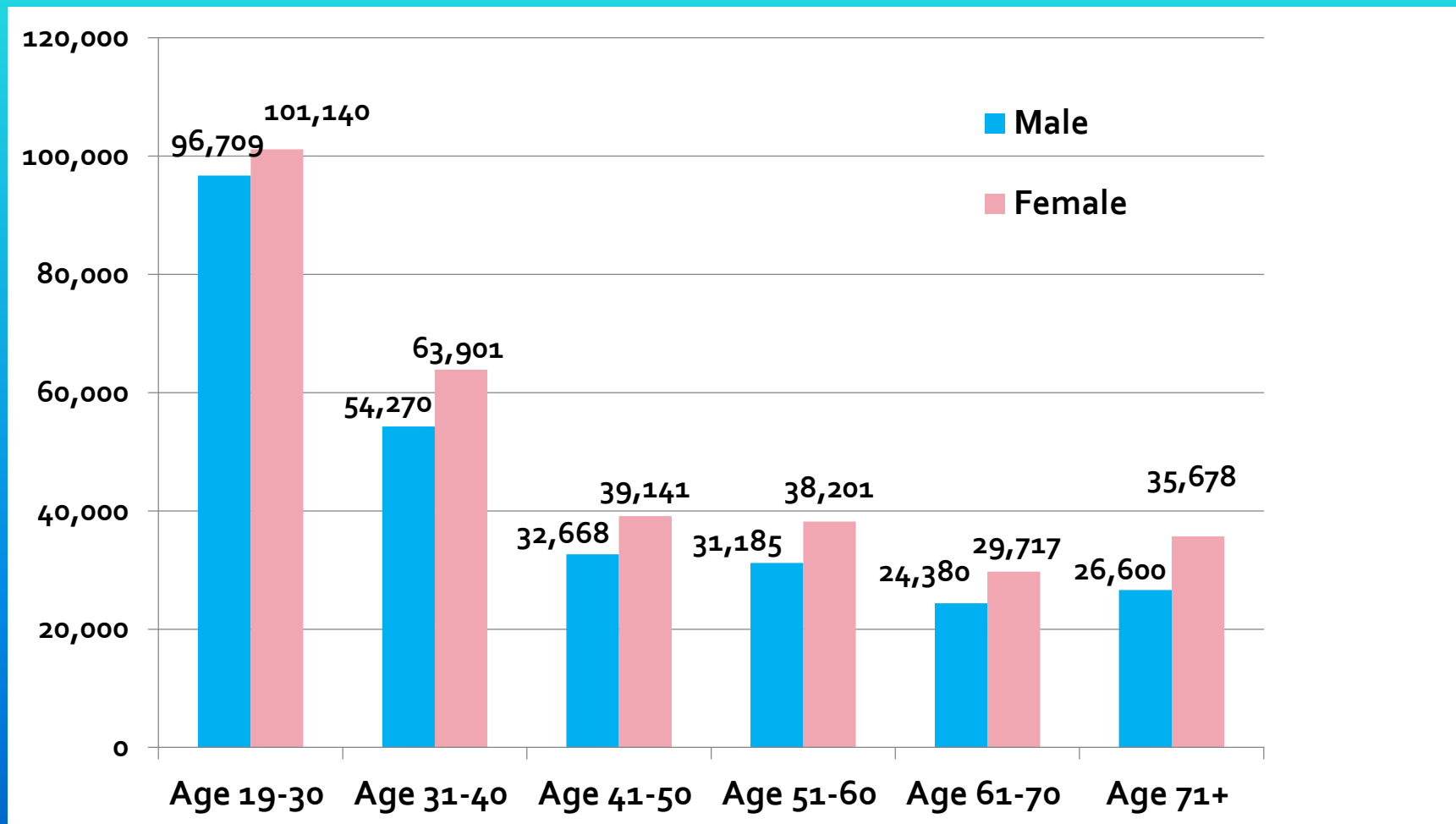
- **Type of provider**

Private, Local HD, CHC, Pharmacy and other

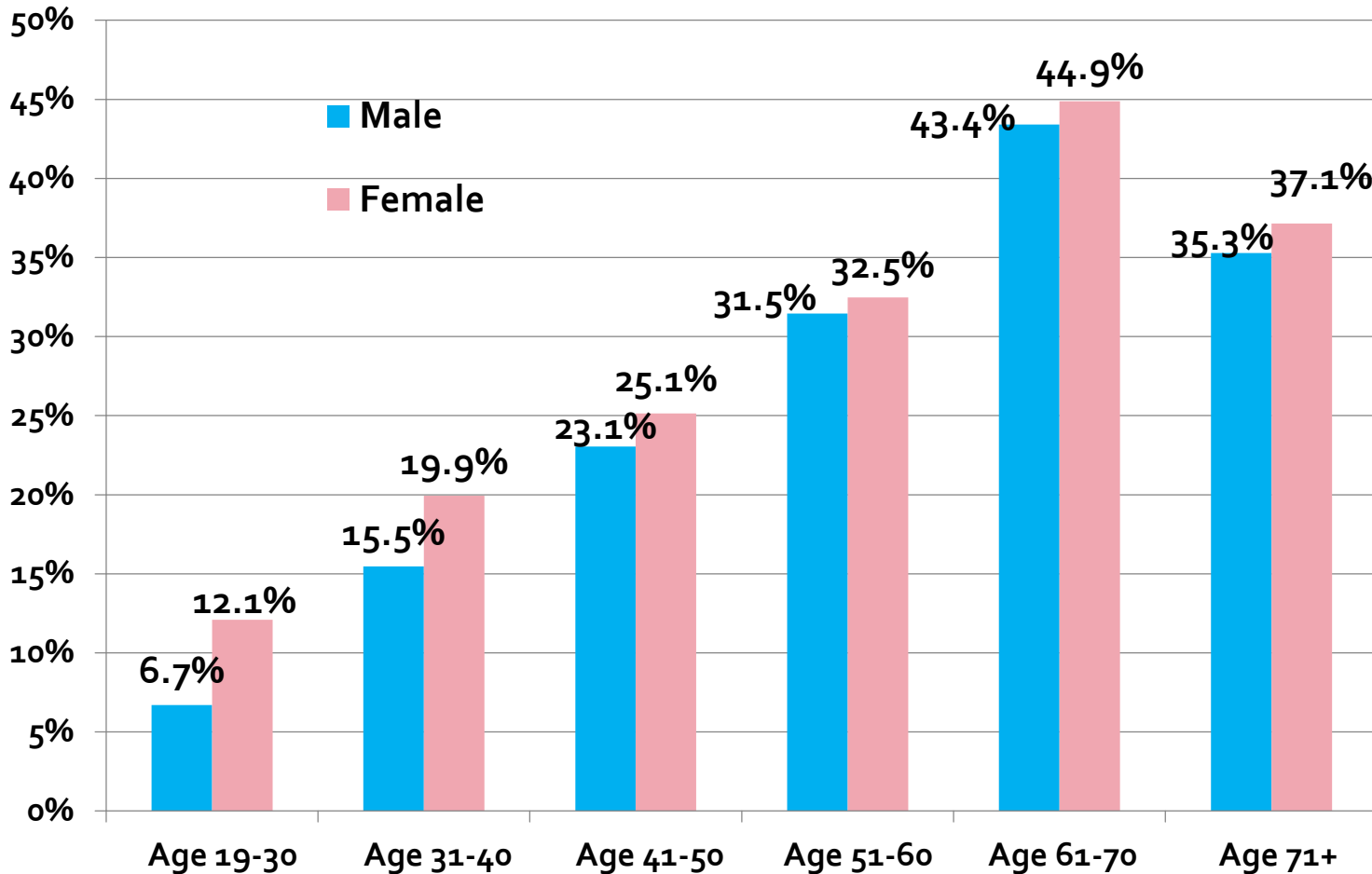
- **Payment Method**

Private insurance, Self-pay, Medicare, Medicaid and other

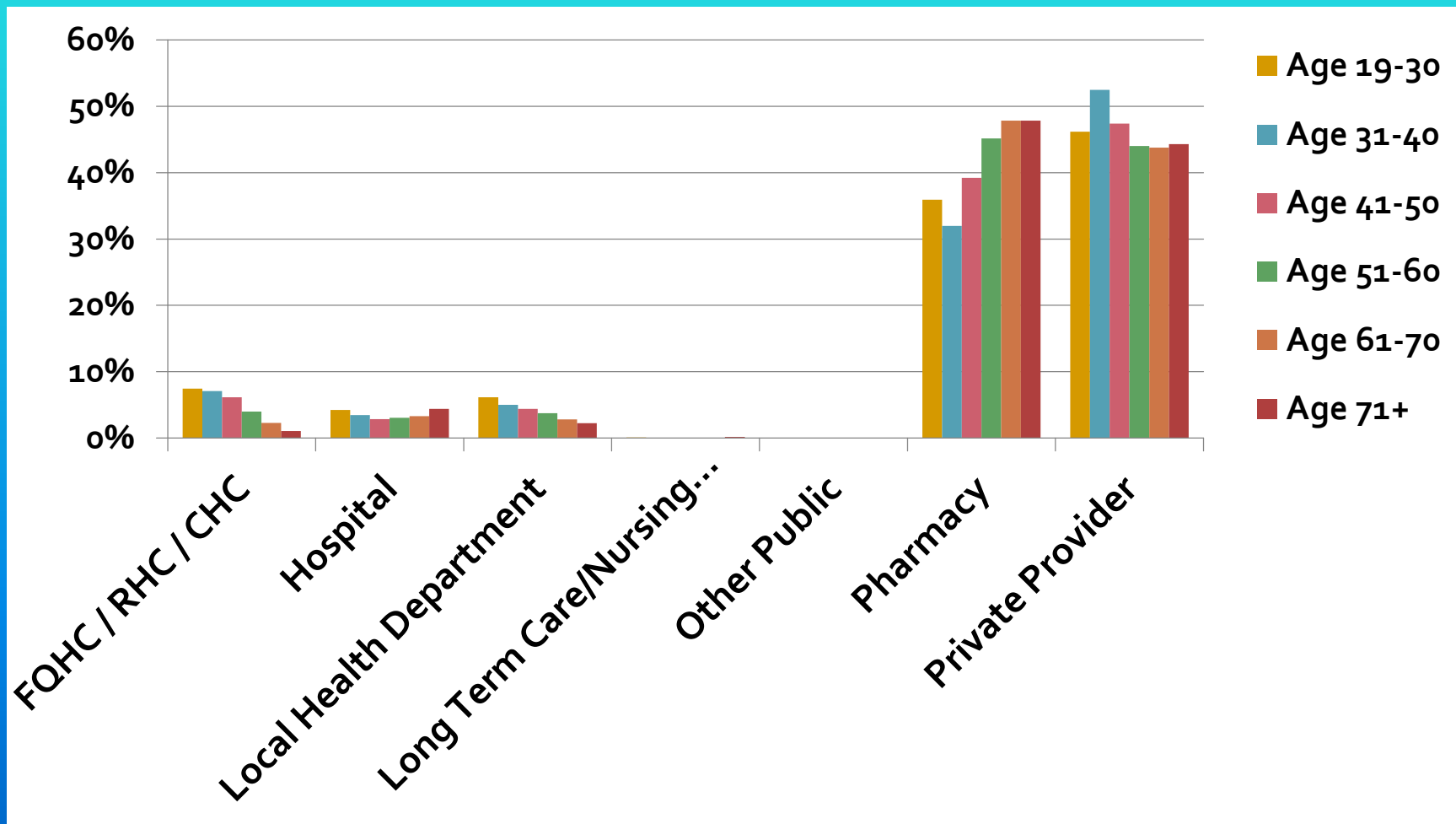
# Adult patients by six age groups and gender: USIIS data characteristics



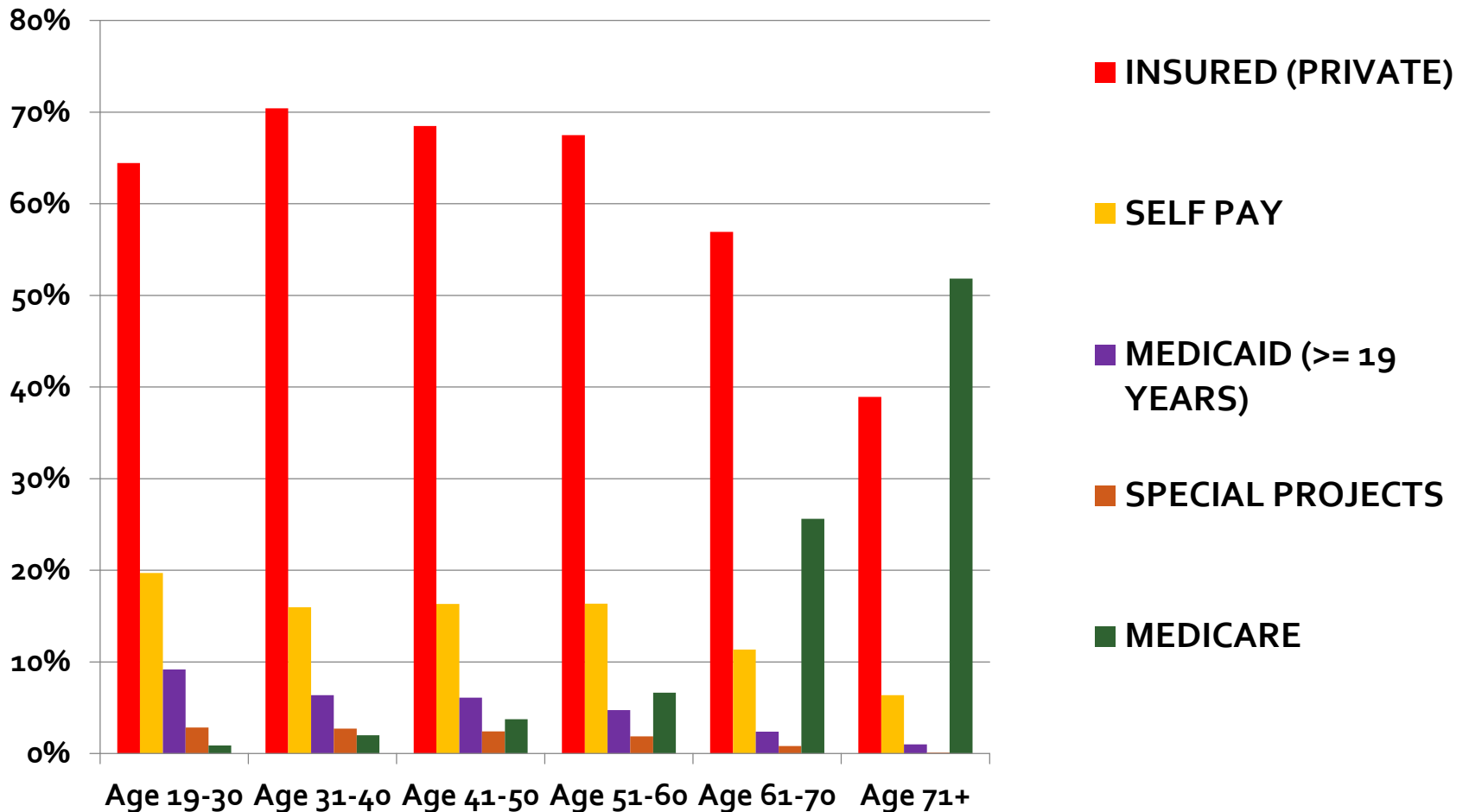
# Flu rates by six age groups and gender: Lower for younger adults and males



# Flu immunizations by provider type and age group: Given by private providers & pharmacies



# Flu Immunization payment method by age group: Private and government insurance



# Revealed observations

- Fewer younger adults aged 19-40 got Flu shots, compared with older adults.
- This is more noticeable in males.
- Most Flu shots are given by private providers and pharmacies (paradigm change!).
- When adults have insurance (private or government), they get a Flu shot. Only about 20% of Flu shots were paid out of pocket.

# The new target population

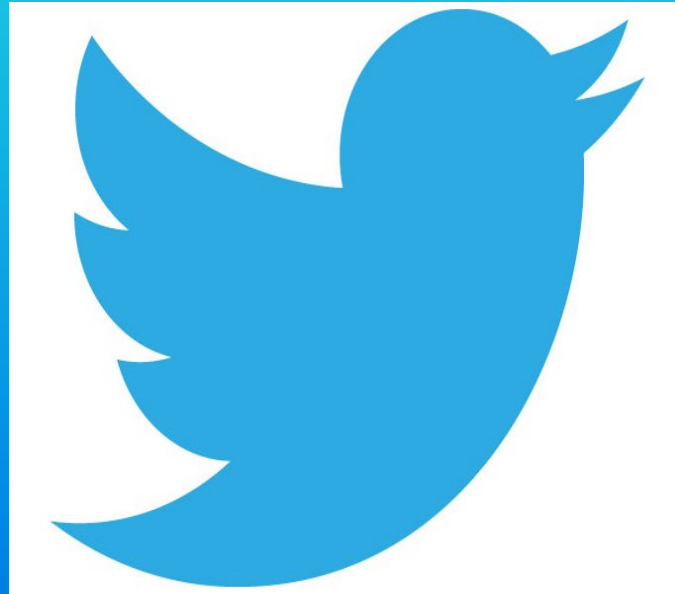


- ◆ **Ages 19-40**
- ◆ **Male**
- ◆ **Uninsured**
- ◆ **Uninformed**

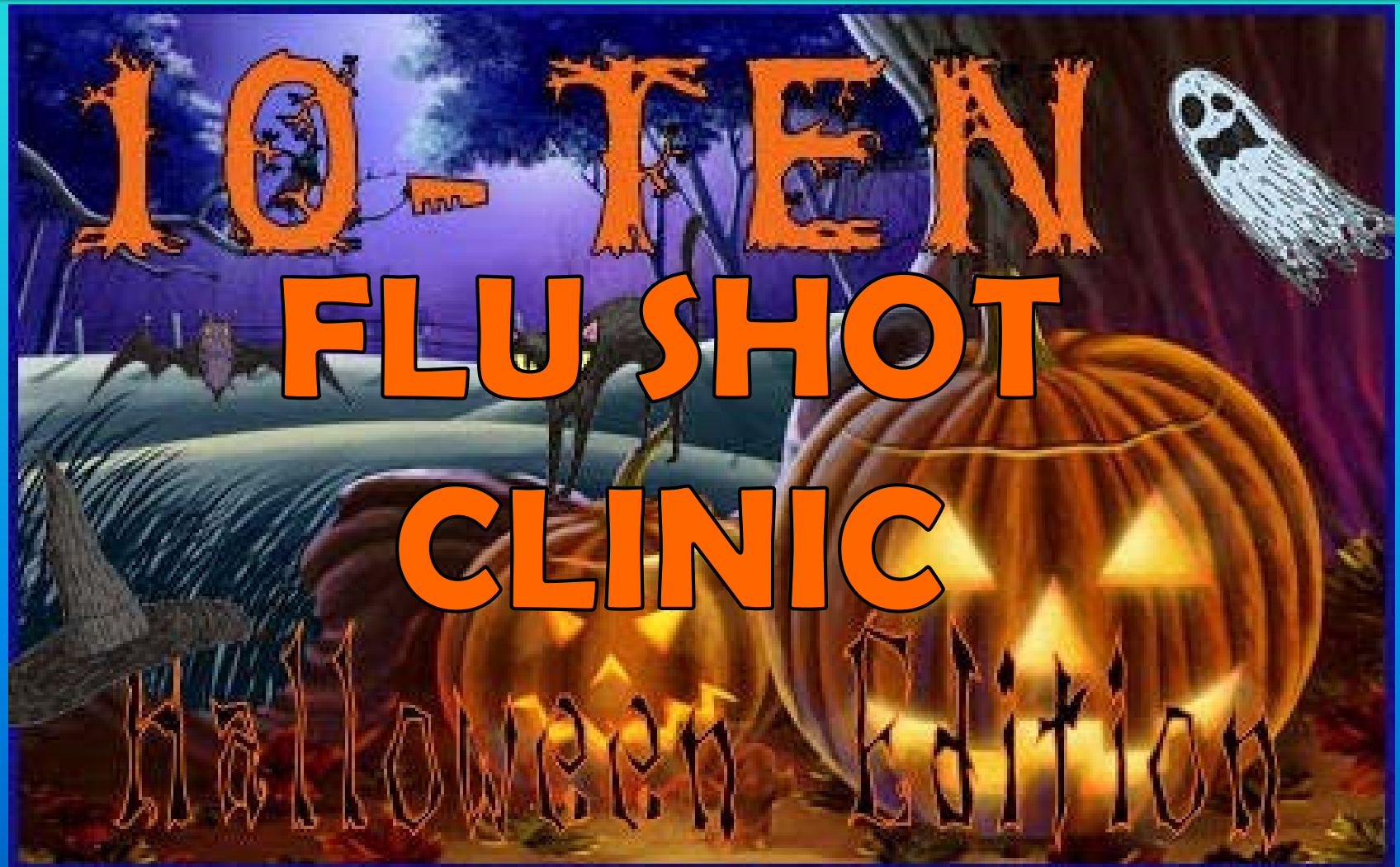
# Adult immunization rates improvement strategies discussed

- Educate all adults about recommended immunizations—especially Tdap, Pneumococcal, and Zoster.
- Most adults receive immunizations from private practices and pharmacies—route them accordingly.
- Inform and guide young adults about getting insurance—e.g. through the Affordable Care Act.
- Inform adults about the costs of immunizations and where to get affordable immunizations.
- Reach out to young adults at locations they frequent—e.g., schools, malls, workplaces, etc. Make Flu shot clinics attractive and fun.

You can always find younger adults here...



Some fun Ideas...



More fun ideas...



**Ho-Ho-Ho!**  
**Get a Flu shot**  
**and win an iPad!**

Thank you everyone! Goodnight!

