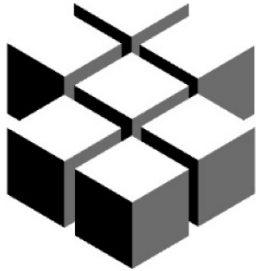


# Analyzing Pharmacies' Impact on Adult Influenza Vaccinations Reported to an IIS

Can IIS Data Be Used to Assess the Impact of Retail  
Pharmacies in Immunizing Adults?

*Michigan Department  
Of Community Health*



Sonderregger  
Research Center



Wisconsin  
Department of Health Services

# Study Goals

- Demonstrate IIS capability to assess retail pharmacy vaccination data
- Demonstrate the value of collaboration between IIS and retail pharmacies
- Demonstrate the value of retail pharmacy participation in an IIS
- Identify next steps

# Methods

- Influenza Seasons
  - 2011-2012, 2012-2013, 2013-2014
- First Valid Influenza Dose Administered:
  - To persons aged 18 years and older at the time of administration and resident in Michigan or Wisconsin
  - By retail pharmacies that submit data to IIS (doesn't include pharmacists in clinic settings)
- Denominator for coverage estimates – 2013 U.S. Census Population Estimates Data

# Michigan Care Improvement Registry (MCIR)

- A statewide, population-based IIS
  - Implemented in 1998 for health care providers to track children's vaccinations
  - Continually populated since 1994 with birth records through a linkage with Michigan's Vital Records
  - Required reporting within 72 hours of administration for children aged less than 20 years
- Expanded to adults in 2006
  - Strongly encouraged reporting for adult vaccinations

# MCIR Participation

|             | 2013 Census | MCIR- MI only*<br>(% of Census) | MCIR – All<br>Persons* |
|-------------|-------------|---------------------------------|------------------------|
| Adults 18+  | 7,650,421   | 5,847,809<br>(76%)              | 6,405,065              |
| 18-49 Years | 4,071,197   | 3,389,268<br>(83%)              | 3,835,181              |
| 50-64 Years | 2,091,631   | 1,193,814<br>(57%)              | 1,243,233              |
| 65+ Years   | 1,487,593   | 1,264,727<br>(85%)              | 1,326,651              |
| All Ages    | 9,839,187   | 8,161,445<br>(83%)              | 9,104,809              |

\*As of January 2015

# Wisconsin Immunization Registry (WIR)

- Statewide, population-based Immunization Information System (IIS), established in 1999 by the Wisconsin Division of Public Health (WDPH)
- Populated with demographic information from all birth records in Wisconsin beginning with the 1995 birth cohort
- WIR participation is not a requirement, however the WIR receives new client and immunization data from many public and private healthcare providers, pharmacies, HMOs, Medicaid and WIC
- As of March 2015 WIR receives data from 2,400 provider organizations and 15,300 active users

# WIR Participation

|             | 2013 Census | WIR- WI only<br>(% of Census) | WIR – All Persons |
|-------------|-------------|-------------------------------|-------------------|
| Adults 18+  | 4,434,937   | 5,014,668<br>(113%)           | 6,405,065         |
| 18-49 Years | 2,379,514   | 2,832,440<br>(119%)           | 3,835,181         |
| 50-64 Years | 1,205,456   | 1,140,793<br>(95%)            | 1,243,233         |
| 65+ Years   | 849,967     | 1,041,435<br>(123%)           | 1,326,651         |
| All Ages    | 5,742,713   | 6,482,641<br>(113%)           | 9,104,809         |

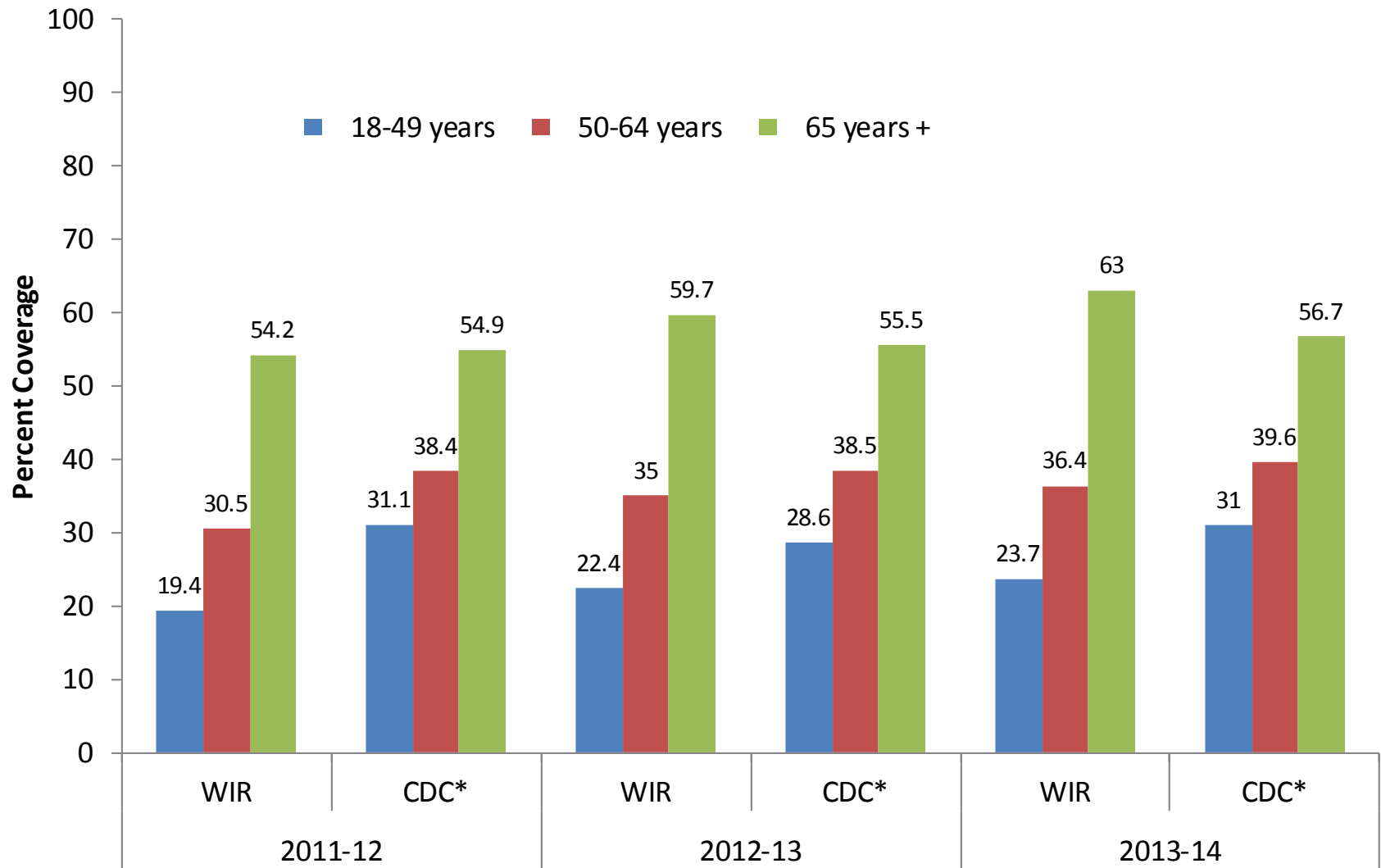


# Number of New and Active Pharmacies Reporting to the IIS by State

| Year | MCIR New Submitters | MCIR Active Submitters | WIR New Submitters | WIR Active Submitters |
|------|---------------------|------------------------|--------------------|-----------------------|
| 2011 | 92                  | 887                    | 13                 | 98                    |
| 2012 | 14                  | 901                    | 240                | 339                   |
| 2013 | 63                  | 964                    | 28                 | 366                   |
| 2014 | 101                 | 1065                   | 10                 | 375                   |

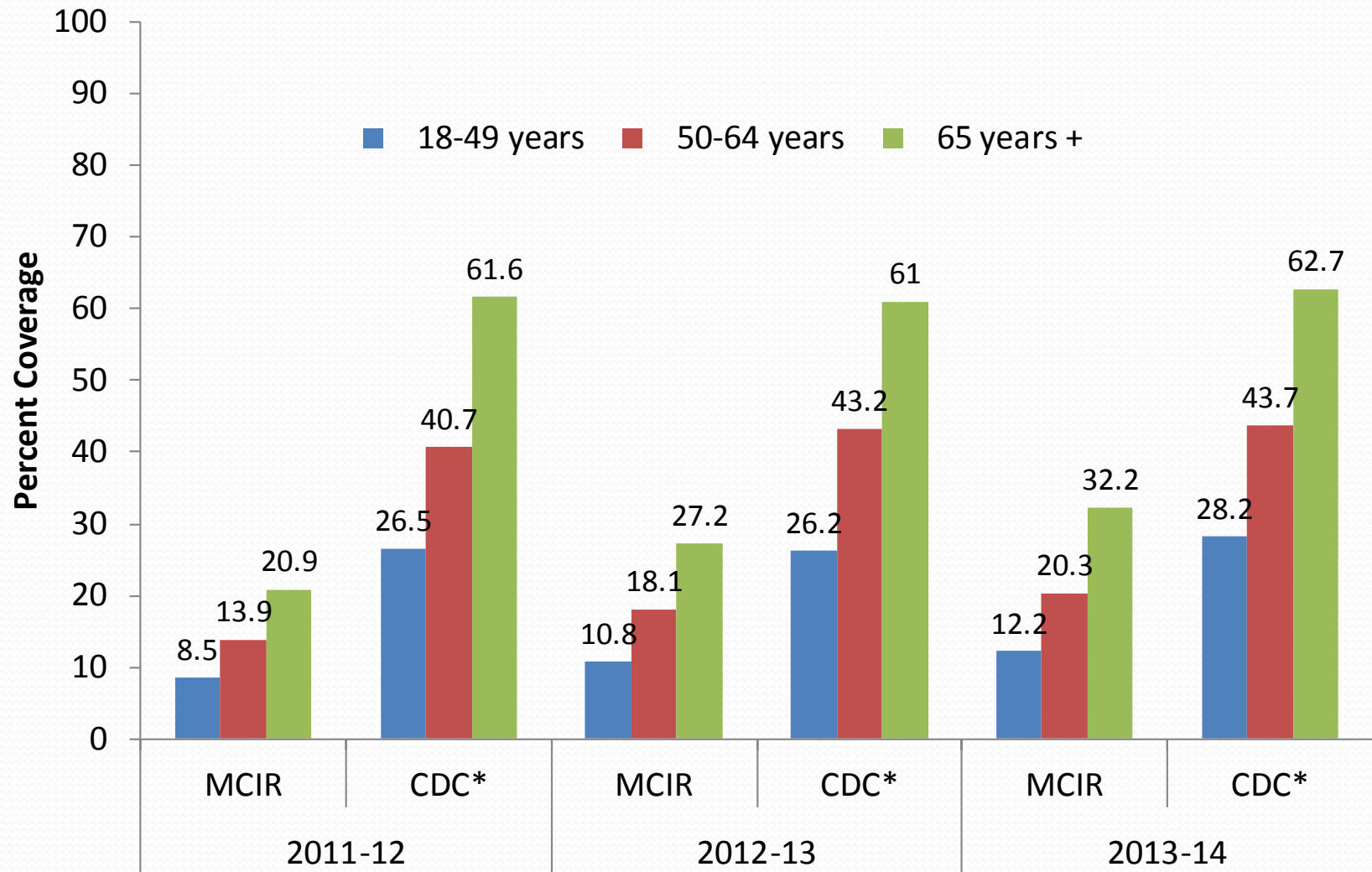
In 2014, MCIR had 1574 pharmacies enrolled and WIR had 626 pharmacies enrolled.

# Influenza Vaccination Coverage by Season, WIR compared to CDC



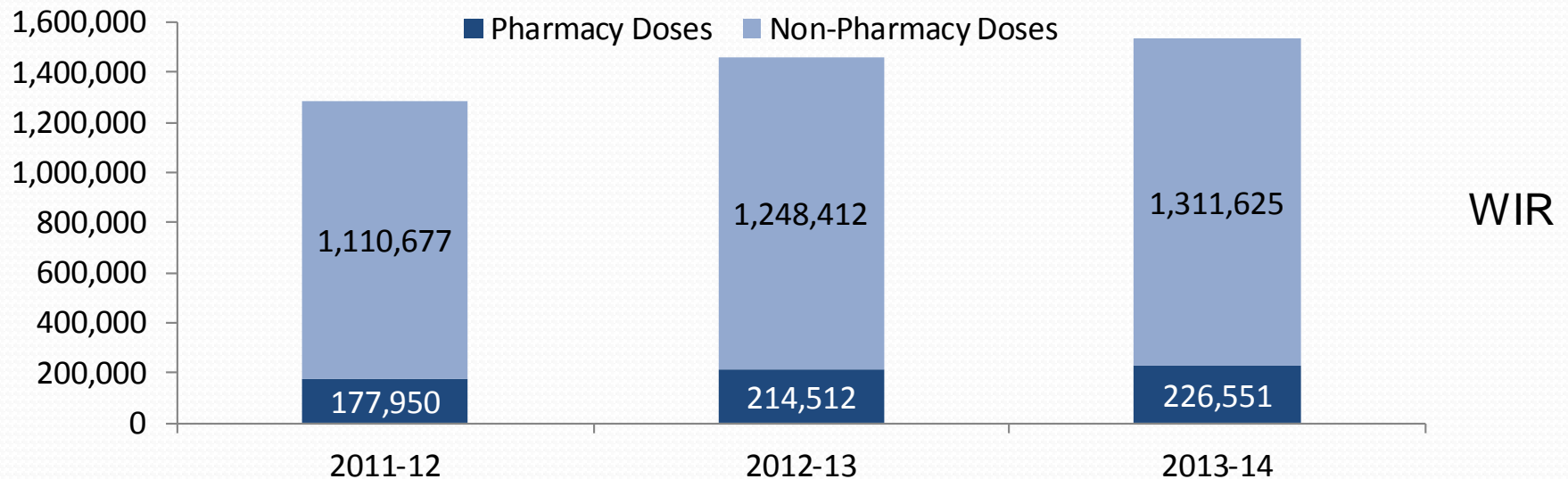
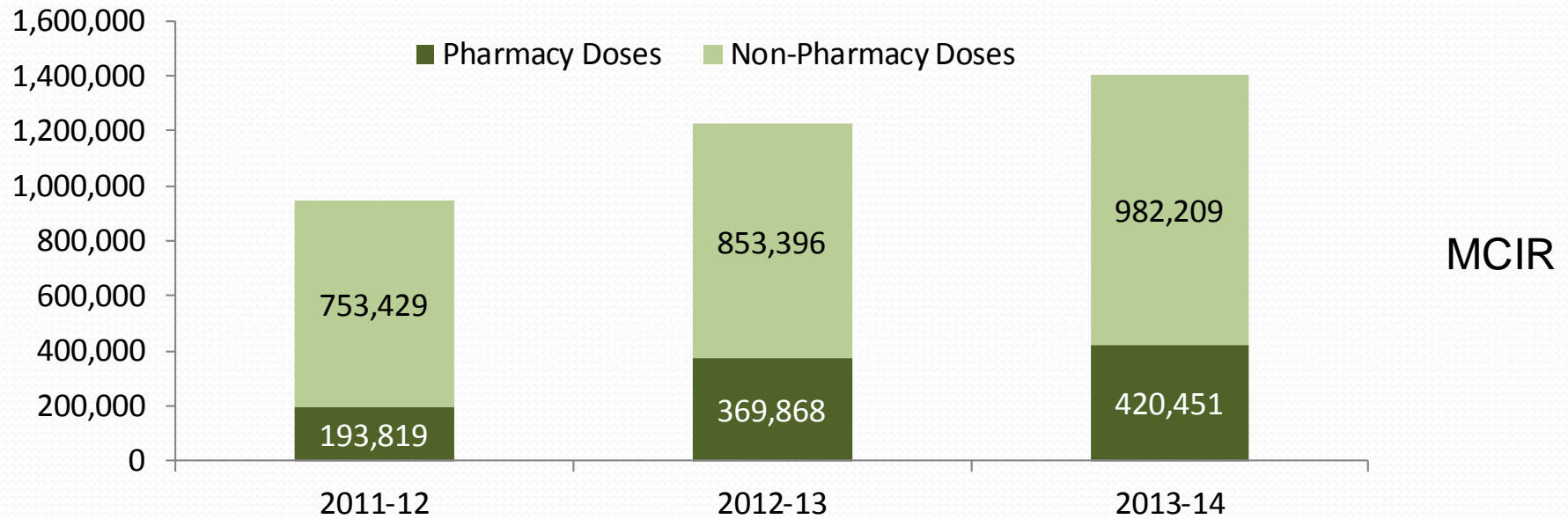
\*Behavioral Risk Factor Survey

# Influenza Vaccination Coverage by Season, MCIR compared to CDC

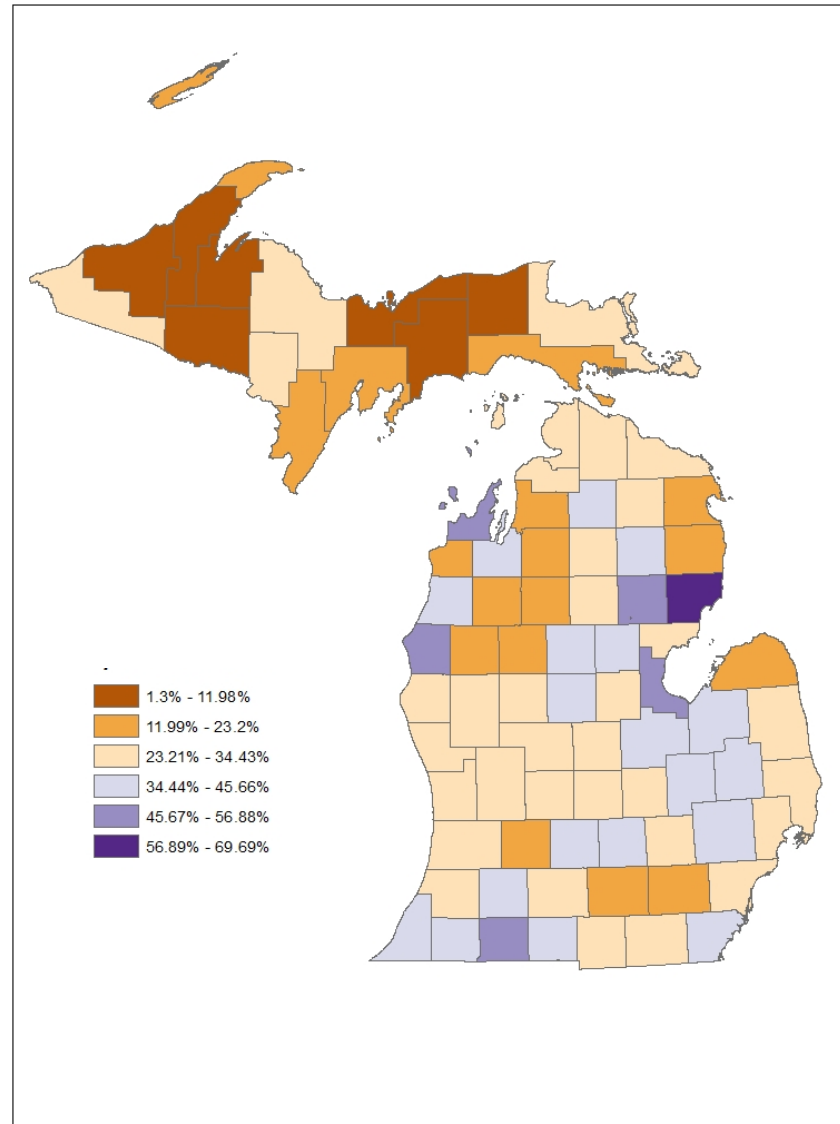


\*Behavioral Risk Factor Survey

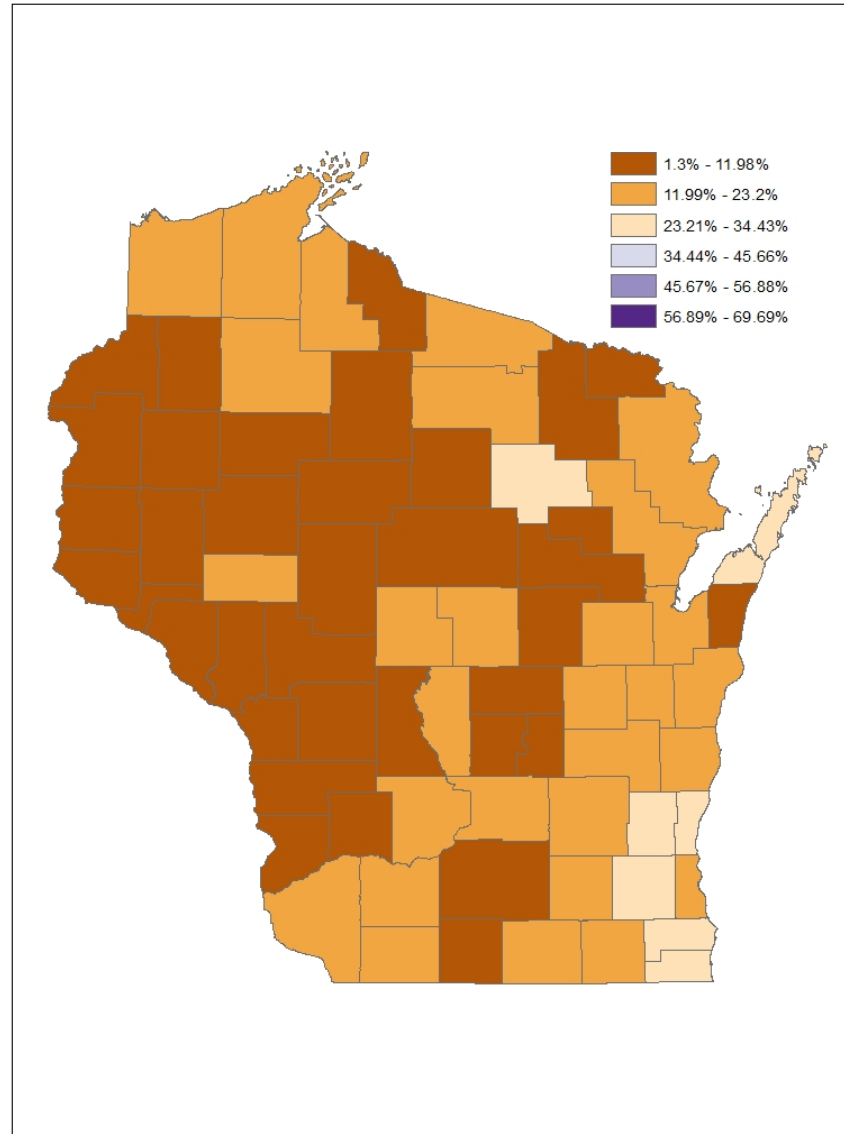
# Influenza Vaccination Doses Reported to the IIS by Pharmacies by Season



# Proportion of Influenza Vaccinations Reported to MCIR during the 2013-14 Influenza Season by Pharmacies



# Proportion of Influenza Vaccinations Reported to WIR during the 2013-14 Influenza Season by Pharmacies



# Vaccinations Reported to the IIS by Pharmacies Administered to Adults 18+

|              | 2011   | 2012   | 2013   | 2014   |
|--------------|--------|--------|--------|--------|
| <b>WIR</b>   |        |        |        |        |
| Zoster       | 7,208  | 24,637 | 25,922 | 20,293 |
| PPSV23/PCV13 | 5,611  | 4,347  | 4,655  | 6,513  |
| Td/Tdap      | 474    | 6,362  | 5,909  | 7,078  |
| <b>MCIR</b>  |        |        |        |        |
| Zoster       | 20,993 | 60,947 | 57,025 | 50,084 |
| PPSV23/PCV13 | 8,463  | 11,712 | 13,292 | 15,252 |
| Td/Tdap      | 6,643  | 9,968  | 14,308 | 17,441 |

# Limitations

- Adult data are likely to be under-reported
- Pharmacies may be more likely than other provider types to report their immunization data because many of them have adopted HL7 messaging standard
- WIR has inflated population denominators due to clients not being marked as 'Moved out of State' and instead maintaining an 'active' status in WIR associated with a WI address
- MCIR has incomplete capture of the adult population because of the lack of a reporting requirement for adults and may have inaccurate address information for adults because their records may not be assessed / updated regularly
- Assessing impact on coverage is difficult because pharmacies more consistently report adult data in Michigan compared to non-pharmacies



# Conclusions

- IIS are valuable in measuring the progress in pharmacies administering & reporting adult vaccinations
- Pharmacies play an important role in immunizing adults
- We are seeing an Increasing rate of reporting by pharmacies
- Coordination of data analysis is crucial to comparing data from several sources

# Next steps

- Investigate cross border immunization
- Do pharmacies fill a gap in some counties?
- Age related differences on utilization of pharmacies by adults
- In what types of counties do pharmacies play the biggest role (health care scarcity, age, number and type of pharmacies)
- Look at impact on childhood immunization by pharmacies

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# Contact Information

- Rob Savage: [rob.savage50@gmail.com](mailto:rob.savage50@gmail.com)
- Cristi Bramer: [bramerc@michigan.gov](mailto:bramerc@michigan.gov)
- Ashley Petit: [Ashley.Petit@wisconsin.gov](mailto:Ashley.Petit@wisconsin.gov)