



# Update on Adult Vaccinations and Immunization Information Systems, 2015

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# Burden of Vaccine Preventable Diseases (VPDs) among Adults

- Morbidity and mortality from vaccine preventable diseases among adults is high
  - 50,000 adult deaths from VPDs annually
  - Burden from 4 VPDs estimated at \$26.5 billion for adults  $\geq 50$  years old
    - Influenza
    - Pneumococcal pneumonia
    - Herpes zoster
    - Pertussis

# Challenges with Adult Vaccinations

- Vaccination coverage is low for routinely recommended adult vaccines
- Fewer adult vaccination requirements compared to children
- Adults receive vaccines from multiple providers, highlighting the importance of consolidated vaccine records
- Complex reimbursements for adult vaccines



# Reporting Adult Vaccinations to Immunization Information Systems (IIS)

- Consolidate and track adult immunizations so that coverage can be measured
- Assist with the implementation of adult vaccination quality measures
- Assist with clinical decision support
- Assist with pandemic vaccine preparedness and response



# Adult reporting in IIS

- Reporting status for adults across U.S. is low
  - Why do we face such a challenge in terms of enrolling adults into an IIS?
  - What are the possible barriers to reporting adult vaccinations in an IIS?

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  - What are the possible barriers to reporting adult vaccinations in an IIS?

Are jurisdictional consent policies impacting adult IIS participation?



# Objectives

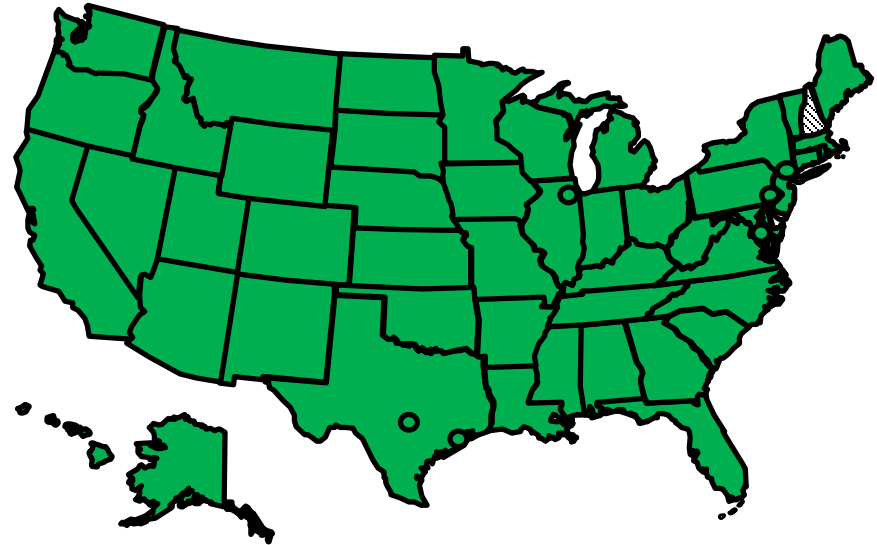
- Utilize data from the 2015 IIS Annual Report (IISAR) to assess the level of reported adult vaccinations
- Examine the association between consent policies and IIS adult participation



# Methods

# Methods: Data Source

- Immunization Information System Annual Report (IISAR) is a national, self-reported survey of 64 IIS
  - In 2015: 55 jurisdictions (49 states and 6 cities) were supported by an IIS in United States, excluding territories
  - NH did not have an IIS in 2015
- IISAR assesses progress in IIS technical, operational, and data quality goals



# Methods: Data Collected

IISAR data were used to summarize adult reporting

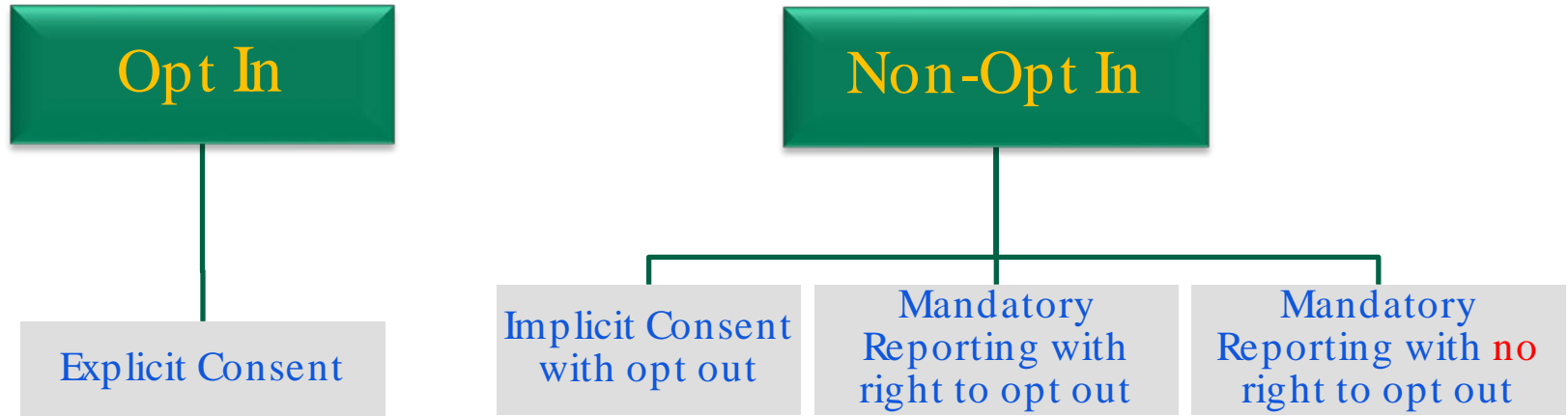
Enrollment

- Number of adults aged  $\geq 19$  years
- Percent of adults out of total adult population (2015 Census estimate)

Participation

- Number of adults  $\geq 19$  years with  $\geq 1$  vaccinations administered during adulthood
- Percent of adults with  $\geq 1$  vaccinations in IIS out of total adult population (2015 Census estimate)

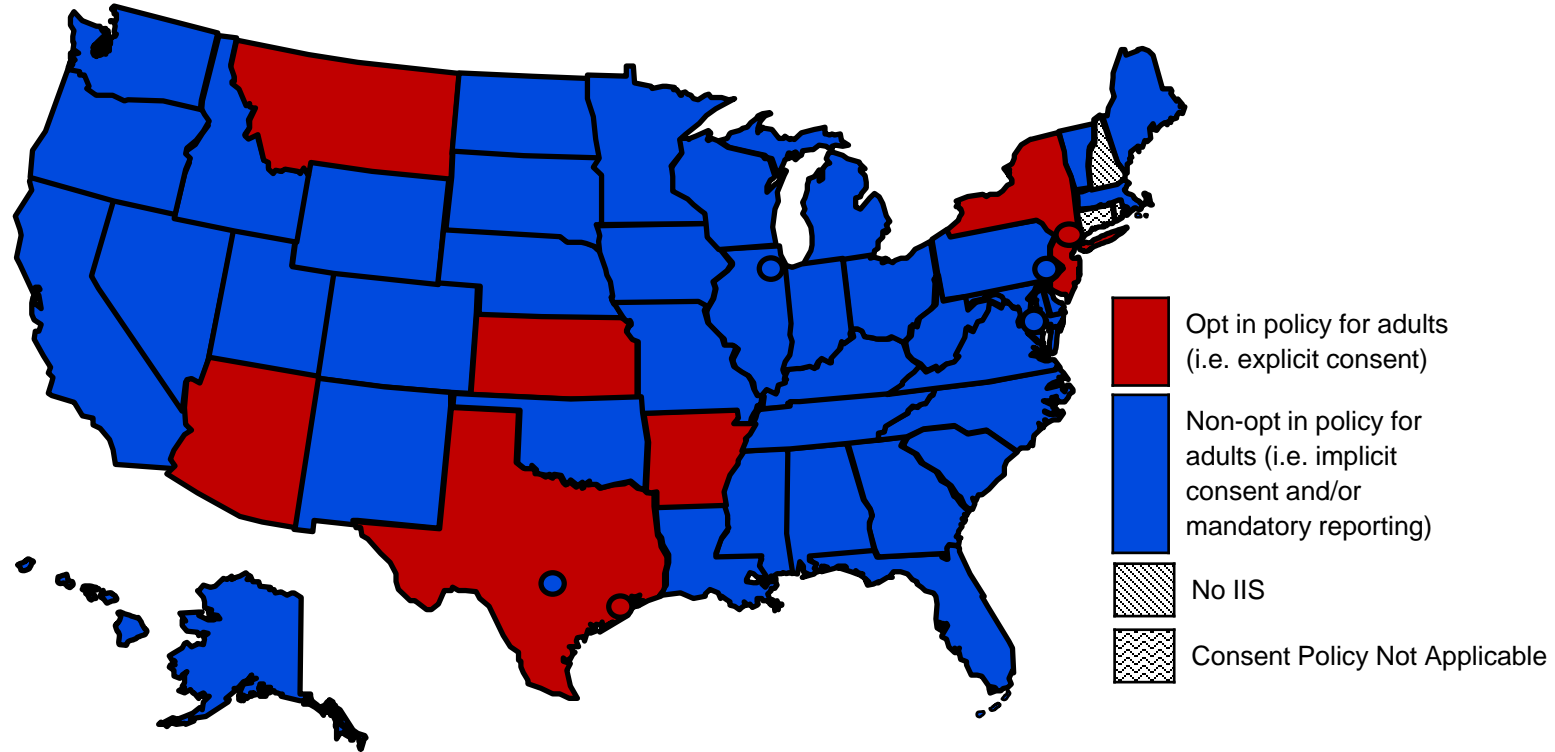
# Methods: Definitions



Differences in laws stem from jurisdictional privacy considerations

# Methods: Data Analysis

IIS Consent Policies for Adults  $\geq 19$  years old, United States, 2012



# Results

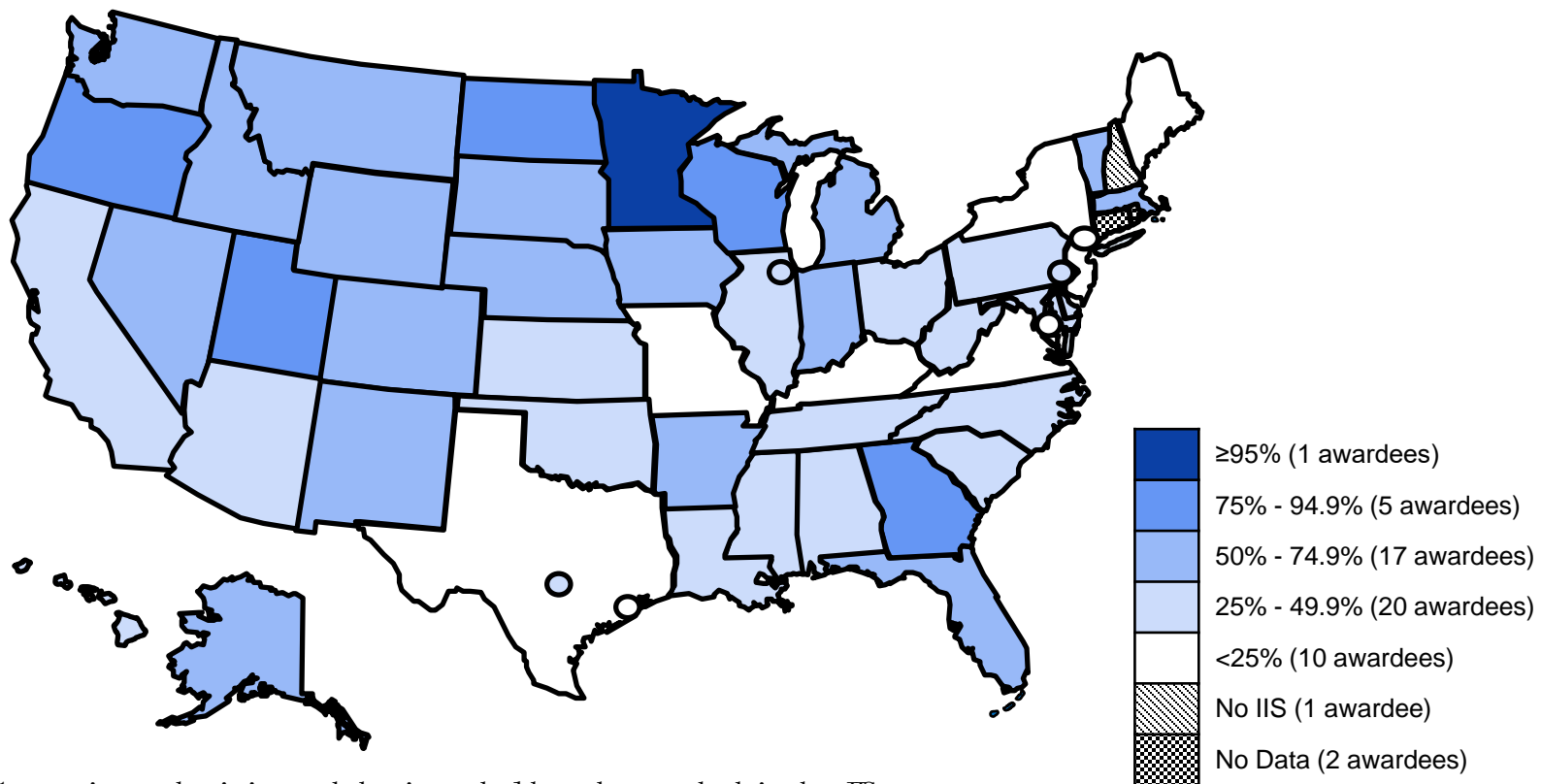
# Results

- 2015 IISAR data from 53 out of the 55 jurisdictions that had IIS in the United States (excluding territories) were included in this analysis
- CT and RI were excluded because they did not collect adult data in 2015



# IIS Participation - Adults

Percent of adults  $\geq 19$  years old participating\* in IIS, 2015



\*Defined as having  $\geq 1$  vaccine administered during adulthood recorded in the IIS



# Results

- Median proportion of adults with  $\geq 1$  vaccinations entered into IIS = **43.2%**

% of Adults Participating in IIS	Total number of IIS Jurisdictions n (%) <sup>*</sup>	IIS Jurisdictions with opt-in policy n (%) <sup>*</sup>	IIS Jurisdictions with non-opt-in policy n (%) <sup>*</sup>
<25%	10 (19)	5 (56)	5 (11)
25-49%	20 (38)	2 (22)	18 (41)
50-74%	17 (32)	2 (22)	15 (34)
>75%	6 (11)	0 (0)	6 (14)

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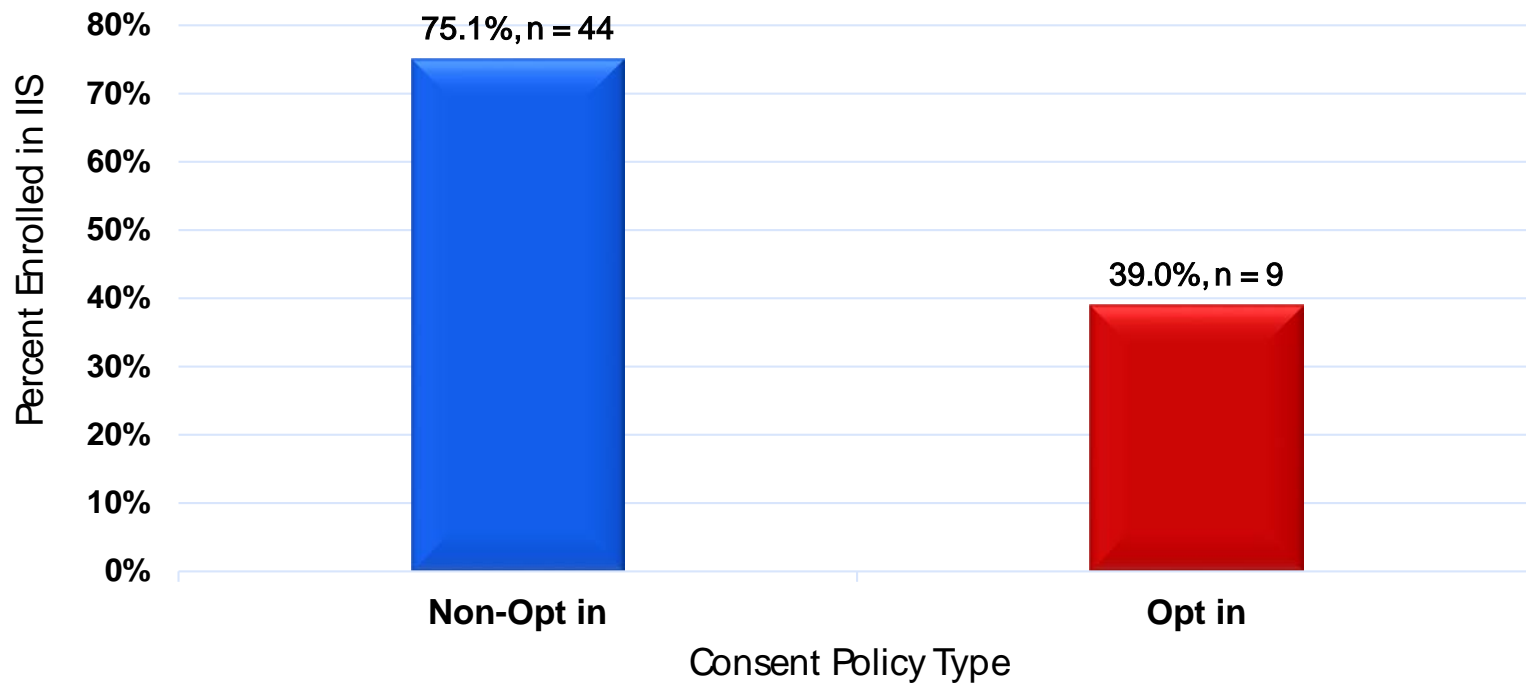
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*P*-Value from Fischer's Exact Test = 0.037

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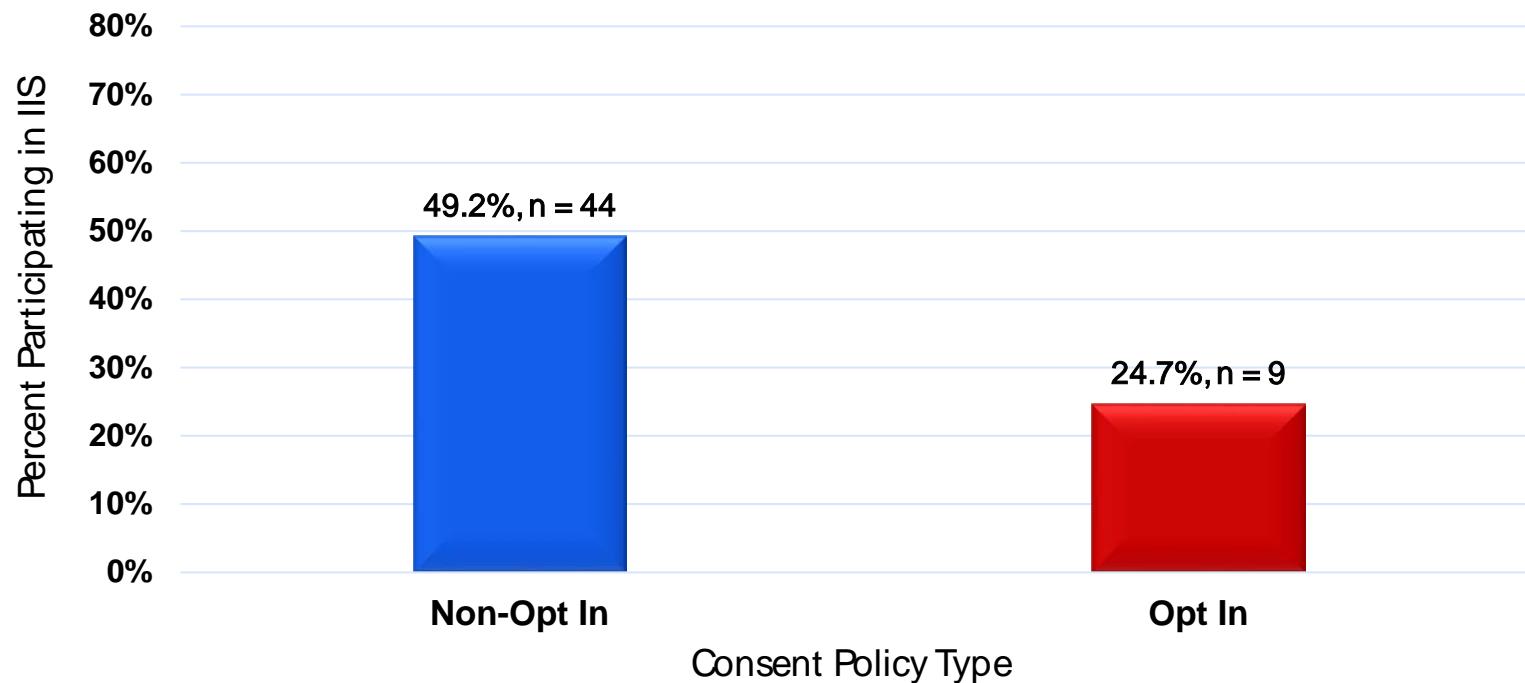
# Results

Percent enrolled in IIS stratified by type of consent



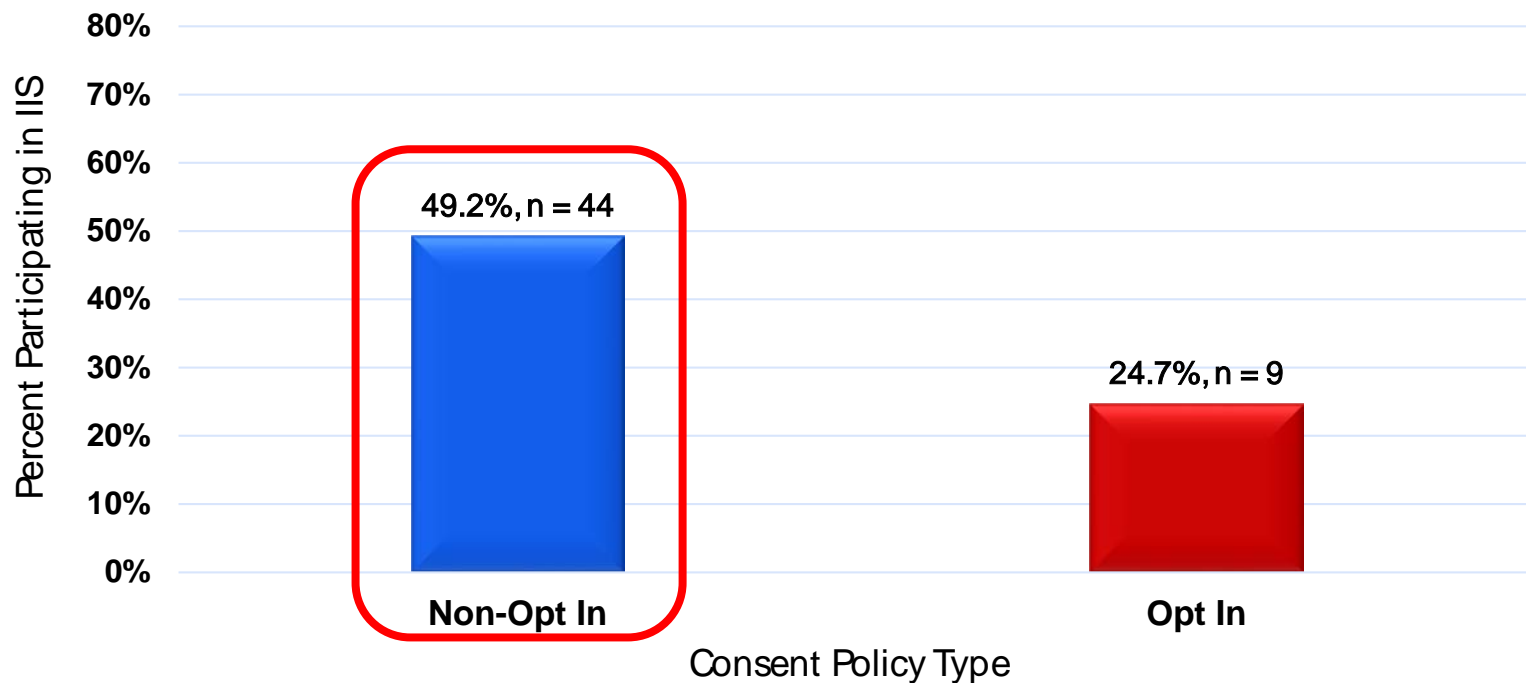
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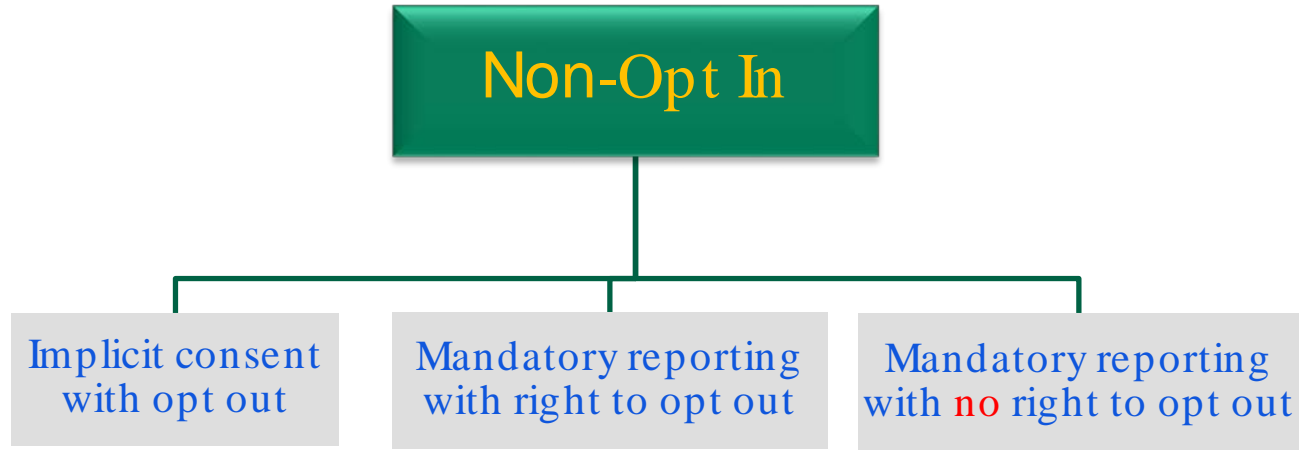
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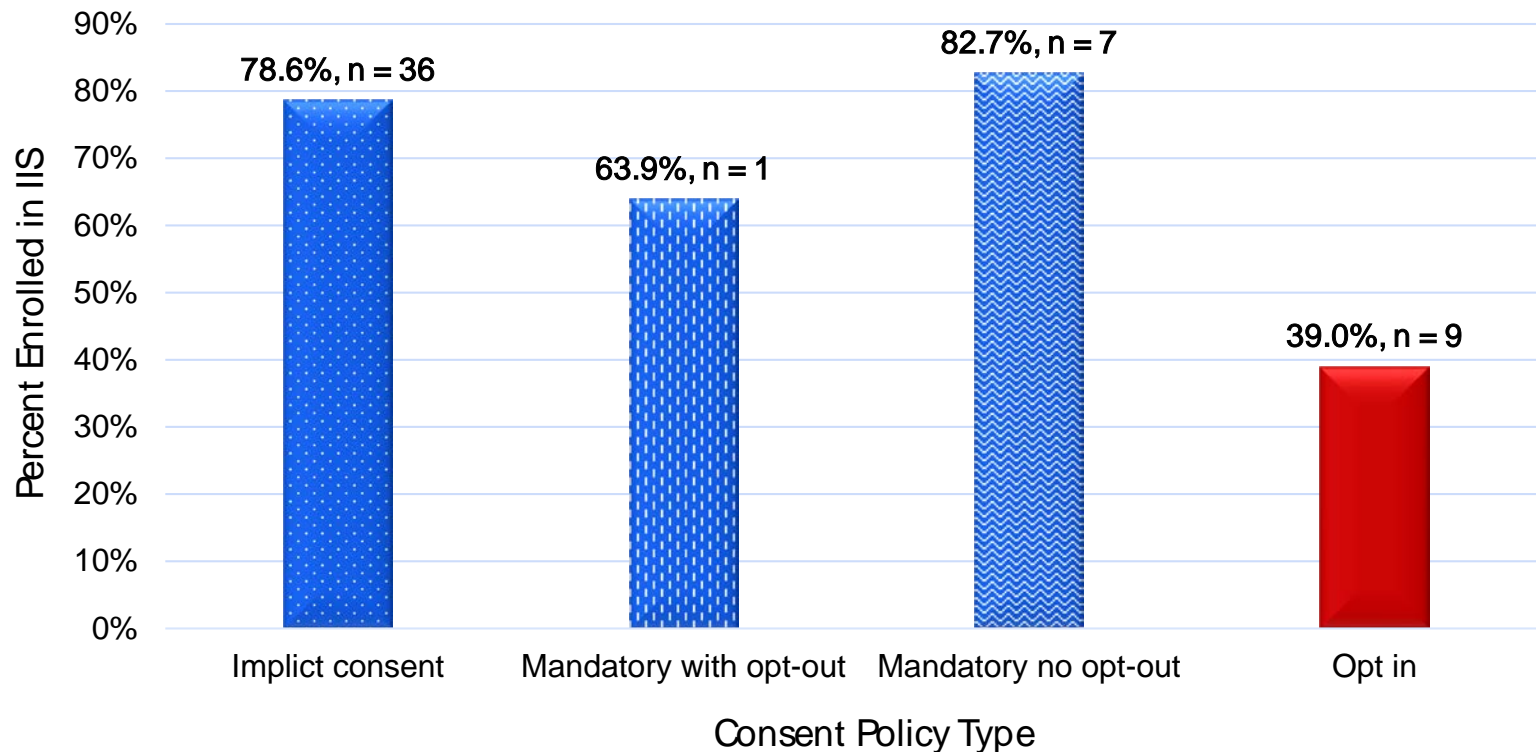


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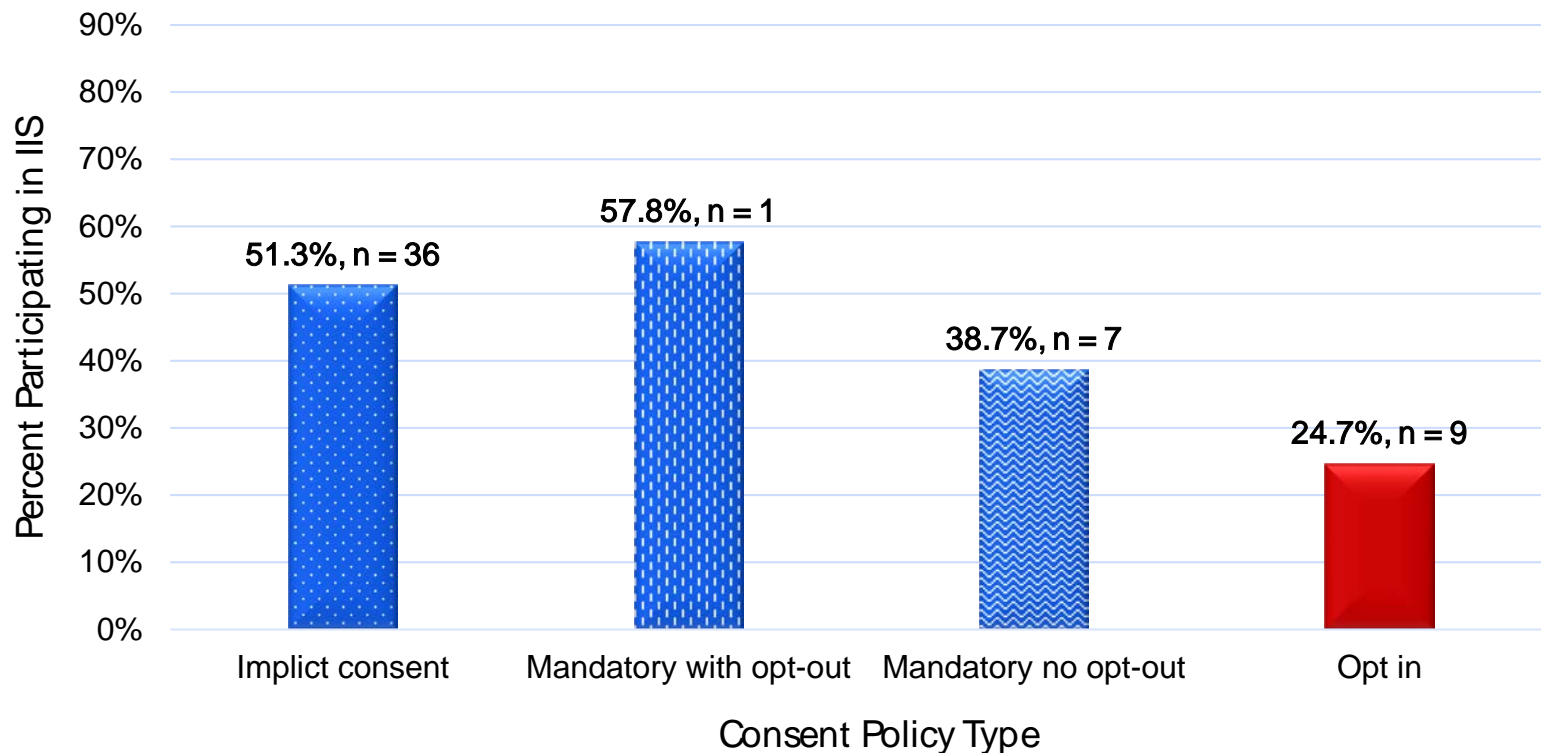
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# Conclusions & Discussion

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- Opt-in policy jurisdictions have lower IIS adult enrollment and participation
- Consent policies are associated with enrollment and participation



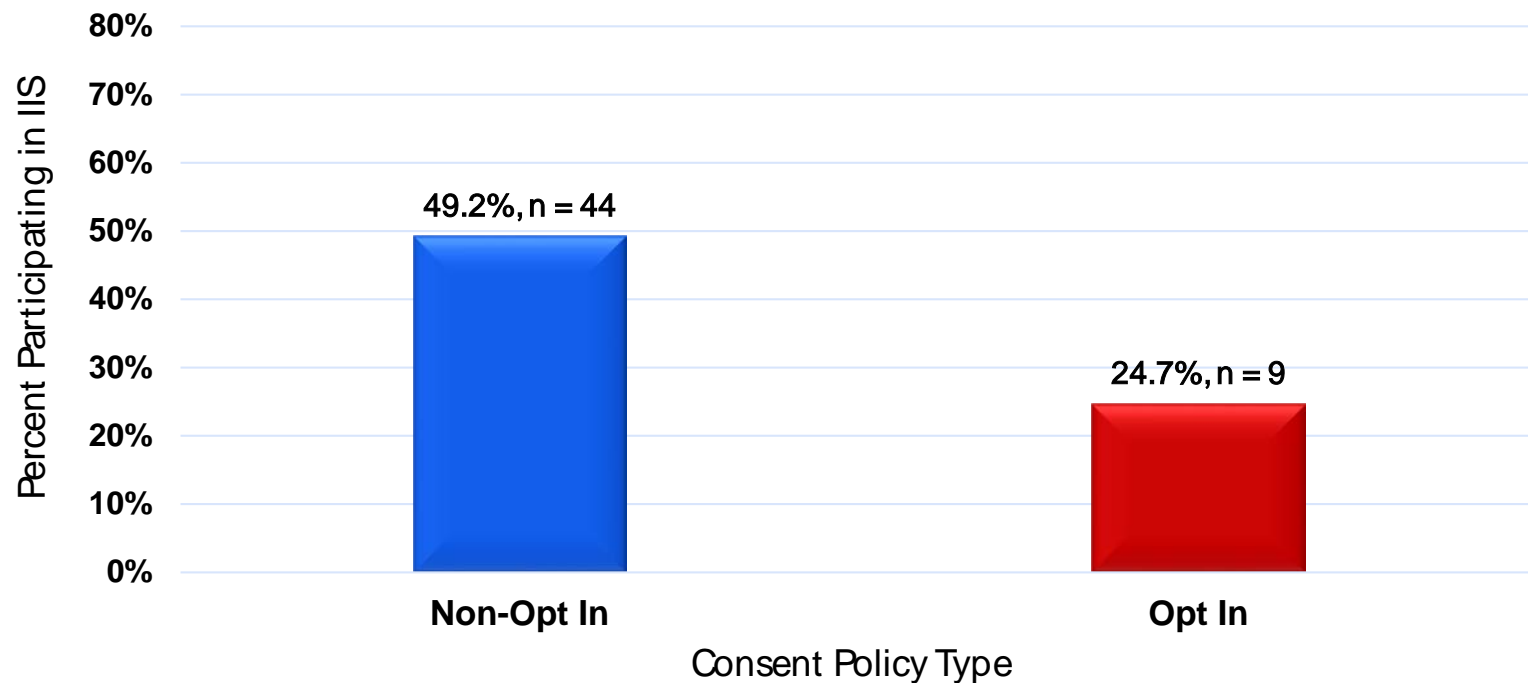
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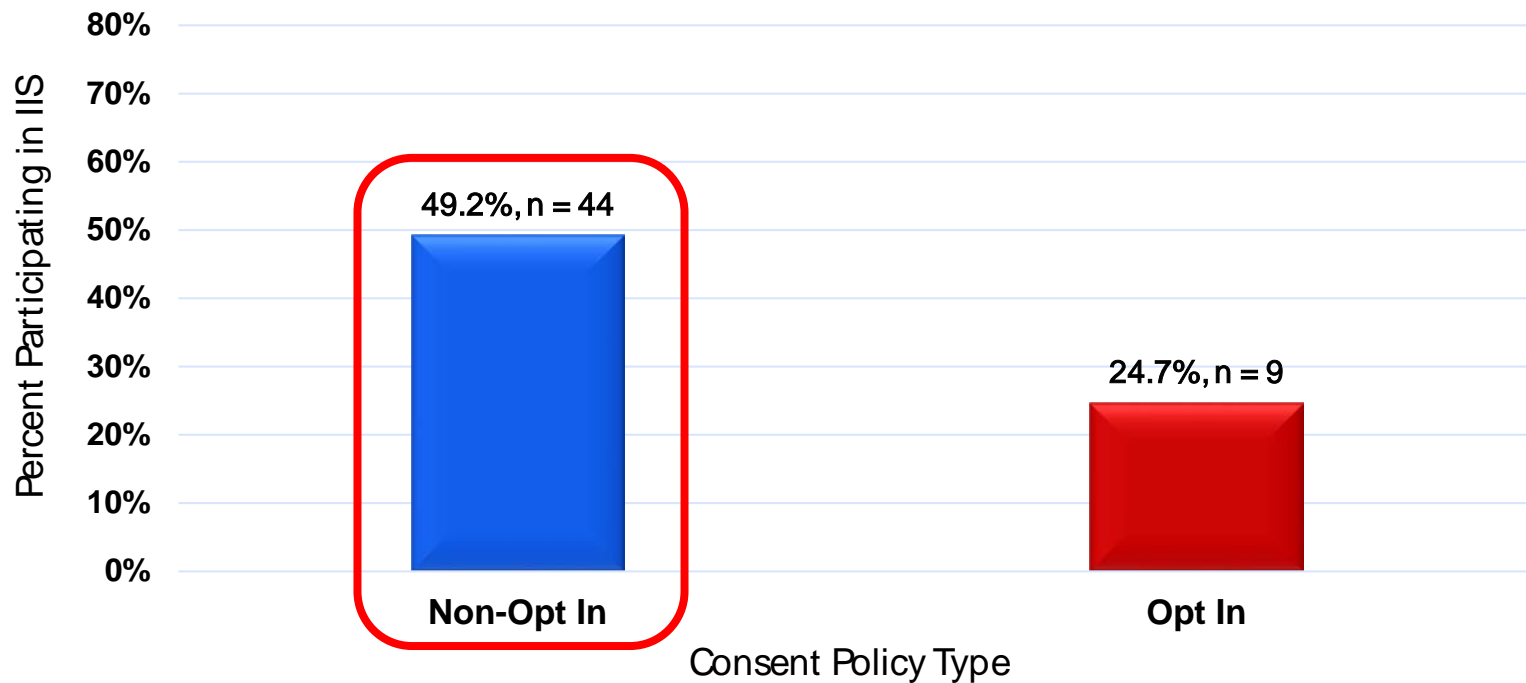
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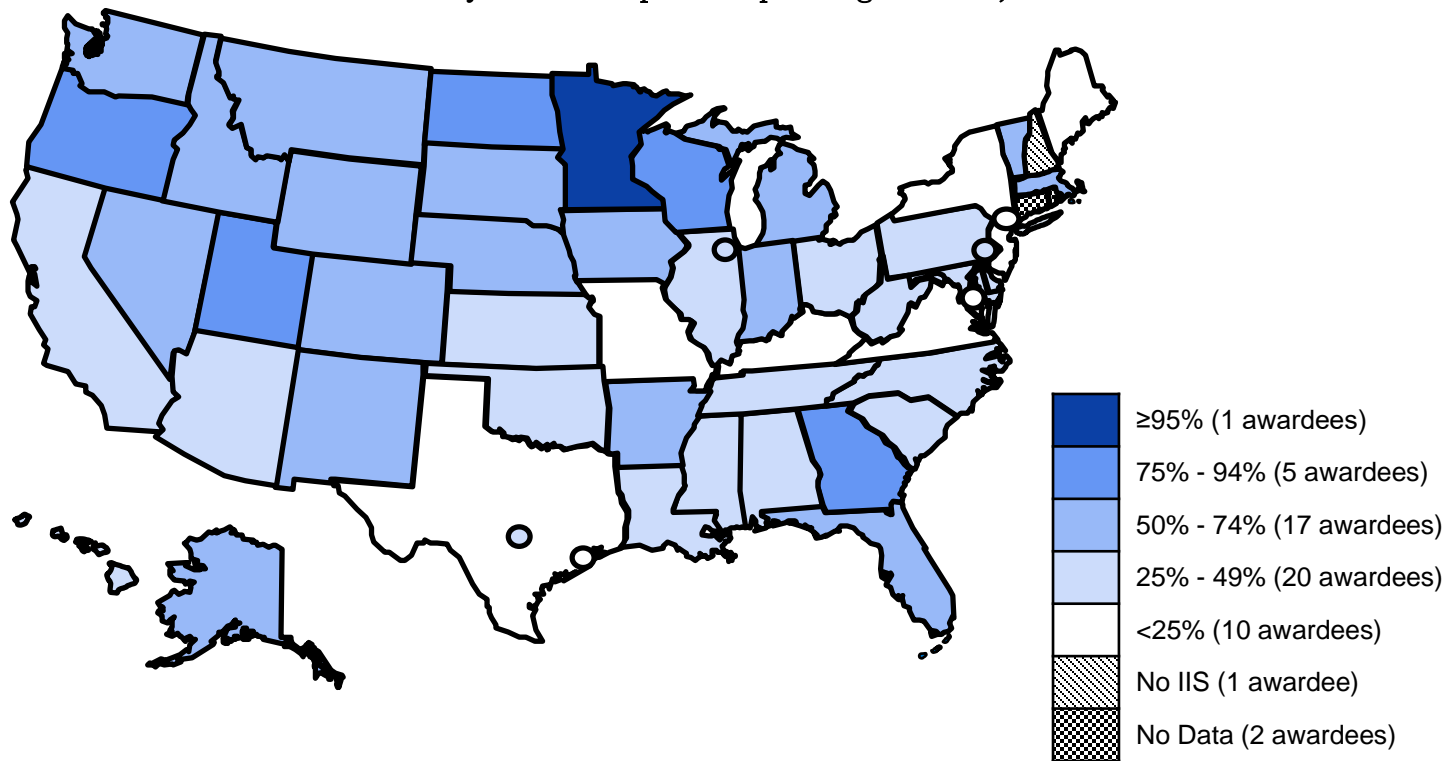
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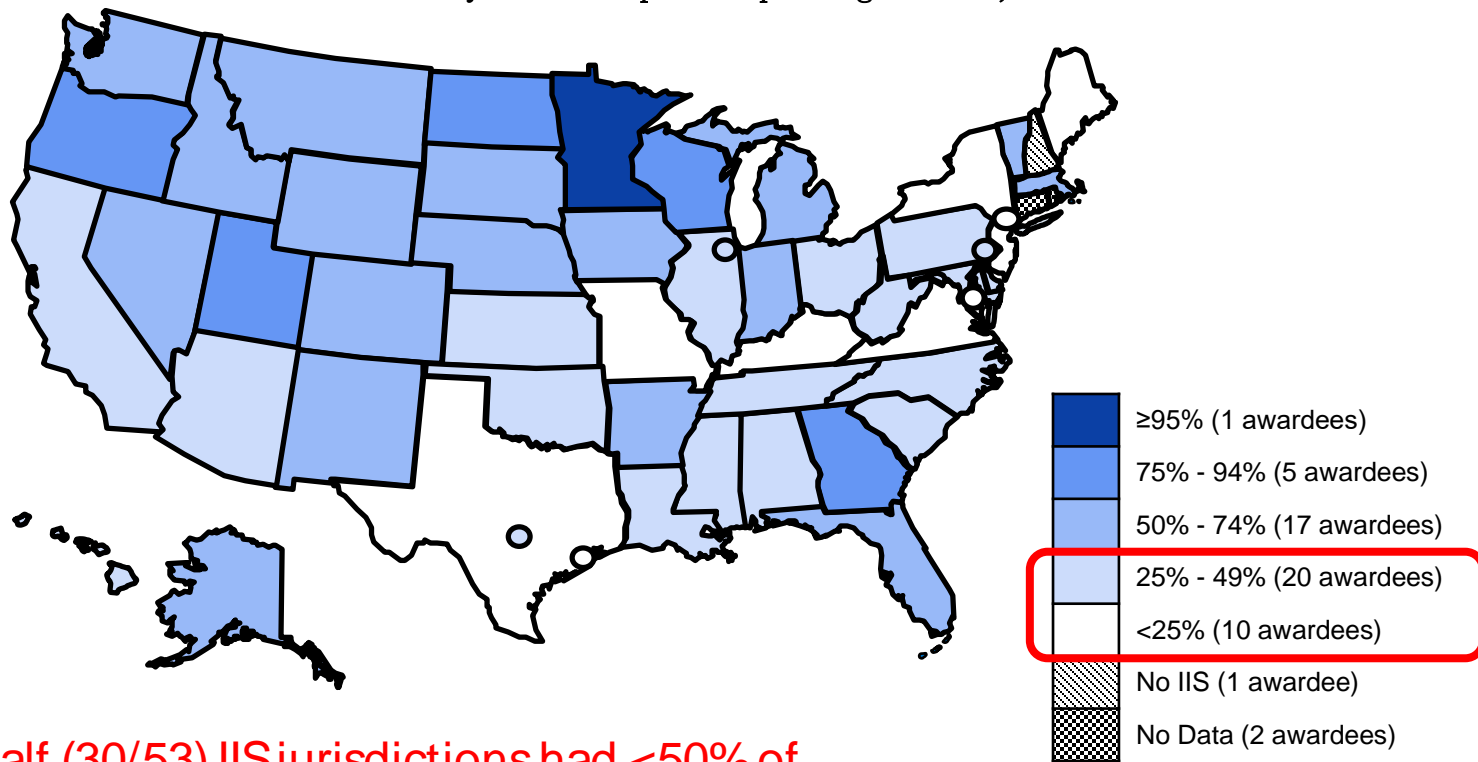
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Percent of adults  $\geq 19$  years old participating\* in IIS, 2015



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More than half (30/53) IIS jurisdictions had <50% of adults participating in IIS

# Discussion

- What are the other factors contributing to low adult IIS participation rates?



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Adults receive their vaccines  
from a diversity of providers



# Diversity of Providers



- In 2011-2012 influenza season:
  - Doctor's office was most common place for flu vaccine receipt (38.4%)
  - Supermarket & Drug Stores next most common (20.1%)
  - Workplaces third most common (17.6%)
- Compare to child vaccinations which mostly occurs in family practice and pediatric clinics

# Discussion

- What are the other factors contributing to low adult IIS participation rates?

Not all providers know the functionalities of IIS



# Provider Knowledge of IIS



- 48% of general internists, 14% of family physicians did not know there was a state/local IIS
  - 5% of pediatricians did not know there was a state/local IIS
- Only 27% of internists reported using an IIS
- 51% of internists did not know if the IIS could tell them a patient's immunization needs

# Discussion

- What are the other factors contributing to low adult IIS participation rates?

Financial barriers to  
adult vaccinations





# Financial Barriers to Adult Vaccinations



- Among physicians:
  - Perceived lack of adequate reimbursement
  - Difficulty determining if patient's insurance will cover/reimburse
  - Upfront costs of buying/stocking ACIP-recommended vaccines
- For Medicaid patients – only 17 states cover all ACIP-recommended vaccines without copayments in 2012

# Discussion

- Many other potential “puzzle pieces”
- Consent policies are small part of a bigger picture



# Limitations

- IISAR data is self-reported and data are not independently verified
- All opt in policies are not the same
  - Opt-in policies may differ between jurisdictions in terms of scope and impact
  - Analysis did not assess this level of granularity
- Policies may have changed since 2012

# Limitations

- Participation is a crude metric
  - Only 1 vaccination is needed to meet the definition of “participation”
    - Jurisdictions with high adult participation rate could be missing substantial percentage of ACIP-recommended vaccines targeted to adults
    - Many adults have received more than one vaccine in adulthood
- Better metric would be perhaps to evaluate association of consent policies with influenza coverage estimates from national surveys

# What can be done going forward?



# Acknowledgments

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- LaTreace Harris MPH

# Thank You

For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

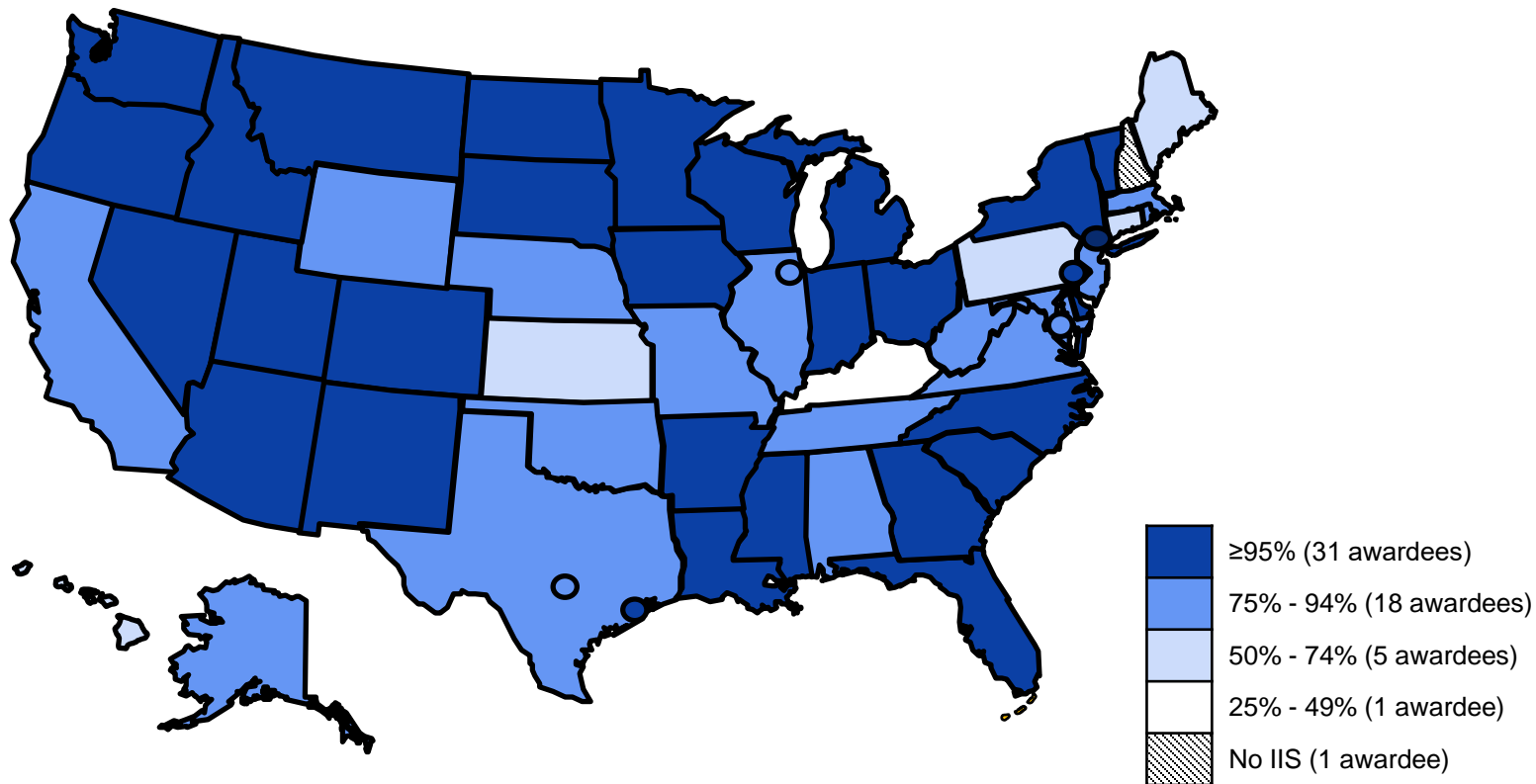


**Extra Slides**



# IIS Participation - Children

Percent of children < 6 years old participating\* in IIS, 2015



\*Defined as having two or more vaccines recorded in the IIS