

SURVEY OF IMMUNIZATION  
REPORTING TO  
IMMUNIZATION  
INFORMATION SYSTEMS  
(IIS) BY MAJOR U.S.  
PHARMACIES

# DISCLOSURES

Alison Chi declares no conflicts of interest or financial interest in any product or service mentioned in this program, including grants, employment, gifts, stock holdings, and honoraria.

ASAP's and NCPA's education staff declares no conflicts of interest or financial interest in any product or service mentioned in this program, including grants, employment, gifts, stock holdings, and honoraria.

# LEARNING OBJECTIVES

Following this presentation, attendees should be able to:

1. Describe the key functions of an immunization information system (IIS) as they relate to pharmacy practice.
2. Explain the legal and policy landscape regarding requirements for pharmacy reporting to IIS.
3. Describe the most common data submission methods from the pharmacy to the IIS.

# OBJECTIVES

- Background - IIS & AIRA today
- Provide a high-level overview of legal & policy landscape
- Summarize methods, success & challenges of Pharmacy-IIS Interfaces

# BACKGROUND

IIS & AIRA Today

# WHAT IS AIRA?

- Centralized core of activity for IIS development, standardization, and best practices
- Provides knowledge sharing/capacity building opportunities
- A membership organization for IIS staff & partners

# WHAT IS AN IIS?

Immunization information systems (IIS), also known as immunization registries, are *confidential, population-based, computerized databases that record all immunization doses administered by participating providers to persons residing within a given geopolitical area.*

# WHAT IS AN IIS?

At the point of clinical care, *an IIS can provide consolidated immunization histories for use by a vaccination provider* in determining appropriate client vaccinations.



# WHAT IS AN IIS?

At the population level, an IIS provides aggregate data on vaccinations for use in surveillance and program operations, and in guiding public health action with the goals of improving vaccination rates and reducing vaccine-preventable disease.

# *IIS FUNCTIONAL STANDARDS, 2013-2017*

Support the delivery of clinical immunization services at the point of immunization administration, regardless of setting.

Support the activities and requirements for publicly-purchased vaccine, including the Vaccines For Children (VFC) and state purchase programs.

Maintain data quality (accurate, complete, timely data) on all immunization and demographic information in the IIS.

Preserve the integrity, security, availability and privacy of all personally-identifiable health and demographic data in the IIS.

Provide immunization information to all authorized stakeholders.

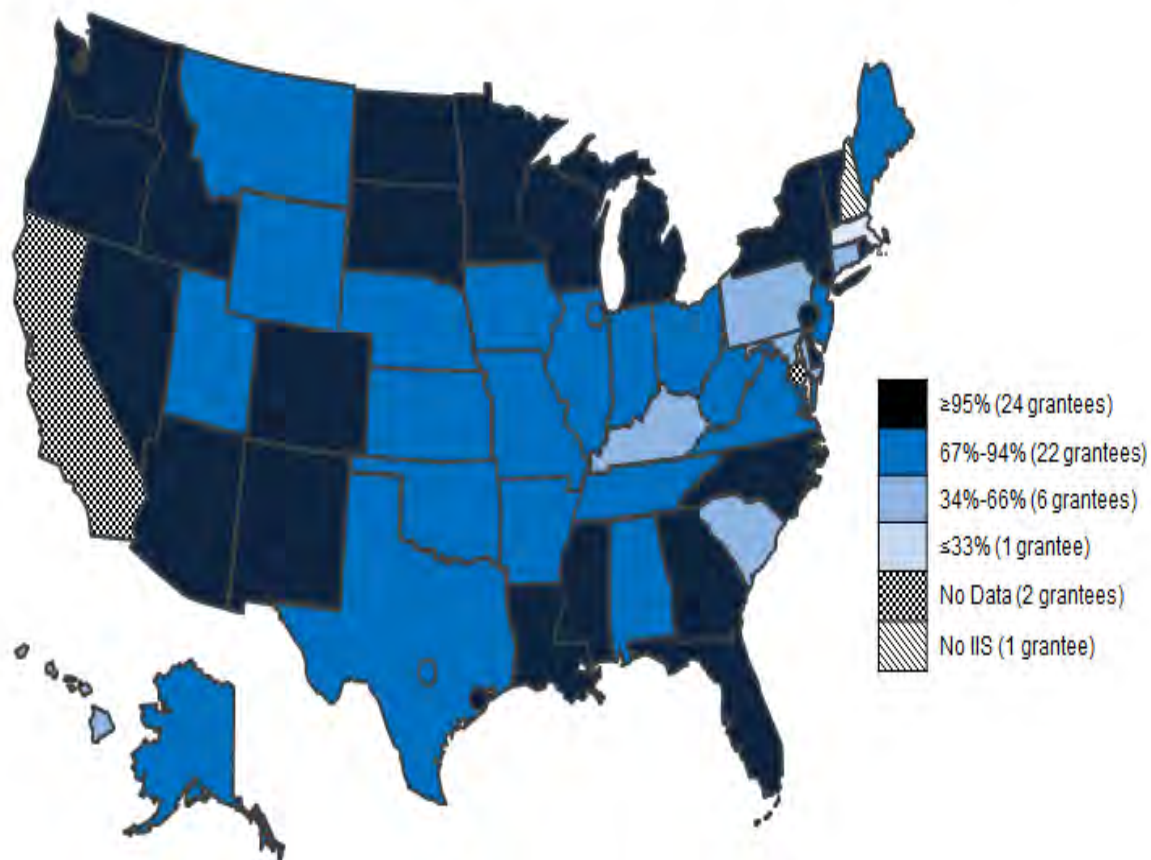
Promote vaccine safety in public and private provider settings

# HOW DOES IMMUNIZATION DATA GET INTO AN IIS?

Method	Advantages	Limitations
Paper	<ul style="list-style-type: none"><li>• Supports data collection from non-computerized practices</li></ul>	<ul style="list-style-type: none"><li>• Timeliness</li><li>• Requires data entry staff</li></ul>
Direct Data Entry (DDE)	<ul style="list-style-type: none"><li>• Updates IIS in real-time</li><li>• Clinical support tools accessible to users</li><li>• No additional software required at provider site</li></ul>	<ul style="list-style-type: none"><li>• Timeliness</li><li>• Data quality</li><li>• Data completeness</li></ul>
Flat File (FF)	<ul style="list-style-type: none"><li>• Electronic format</li><li>• More complete data</li></ul>	<ul style="list-style-type: none"><li>• Requires unique, non-standard formatting</li><li>• Not automated</li><li>• Data quality</li></ul>
HL7	<ul style="list-style-type: none"><li>• Standardized electronic format</li><li>• More complete data</li><li>• Mostly automated</li><li>• Can be bi-directional</li></ul>	<ul style="list-style-type: none"><li>• Time- and resource-consuming to implement</li><li>• Providers may still have to access IIS website to receive all benefits of IIS (forecasting, reports, reminder recall)</li><li>• EHR challenges</li></ul>



### Percentage of children aged < 6 years participating in an immunization information system -- United States, five cities<sup>§</sup>, and D.C., 2013



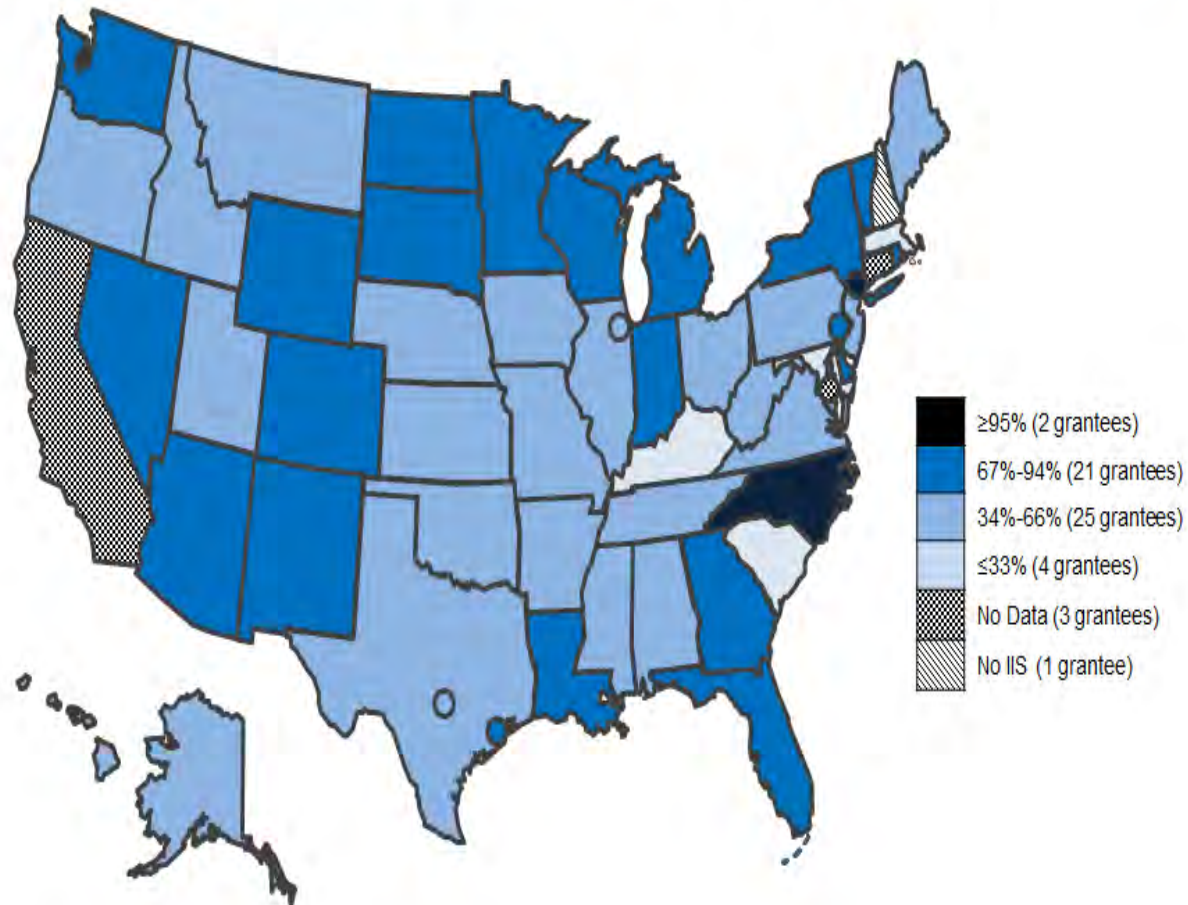
**National Participation: 90%** (excluding Territories)

Source: CY2013 IISAR

<sup>§</sup> Chicago, IL; Houston, TX; New York City, NY; Philadelphia, PA; San Antonio, TX.



## Percentage of adolescents aged 11 – 17 years participating in an immunization information system -- United States, five cities<sup>§</sup>, and D.C., 2013



**National Participation: 64%** (excluding Territories)

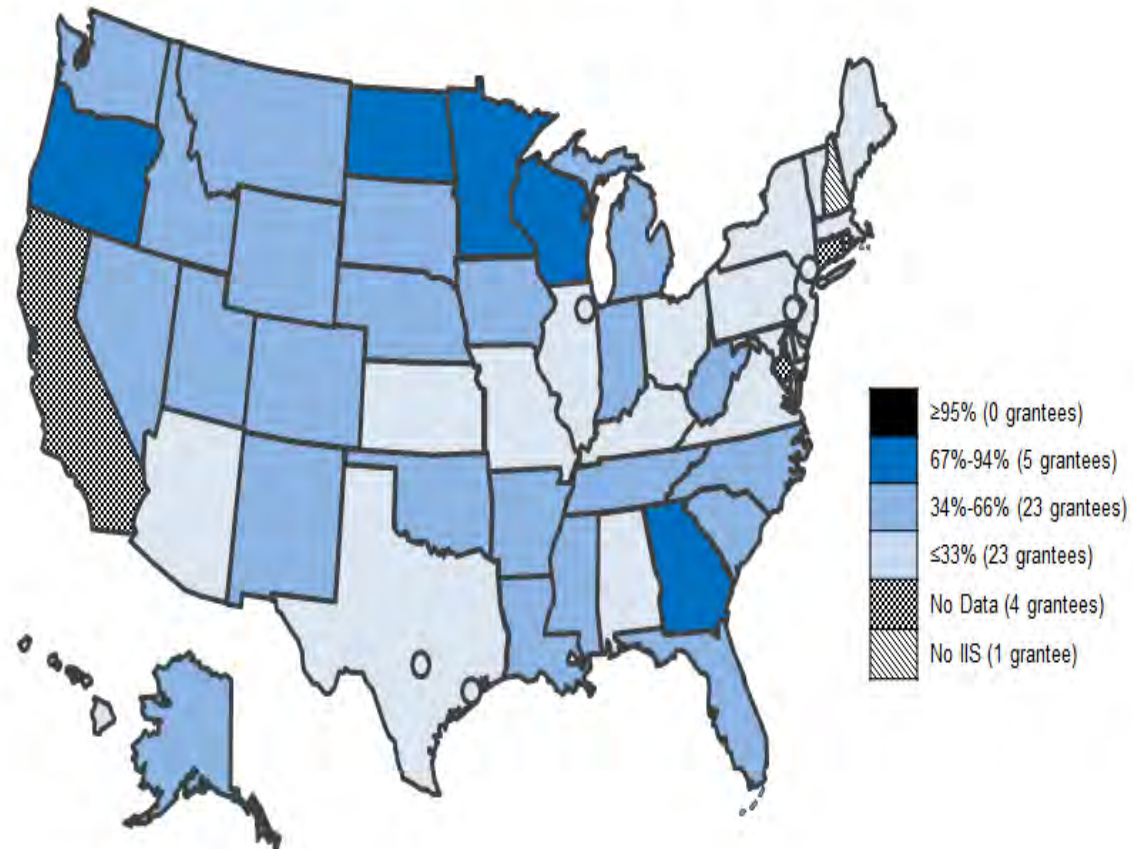
Source: CY2013 IISAR

<sup>§</sup> Chicago, IL; Houston, TX; New York City, NY; Philadelphia, PA; San Antonio, TX.





## Percentage of adults aged $\geq 19$ years participating in an immunization information system -- United States, five cities<sup>§</sup>, and D.C., 2013



**National Participation: 32%** (excluding Territories)

Source: CY2013 IISAR

<sup>§</sup> Chicago, IL; Houston, TX; New York City, NY; Philadelphia, PA; San Antonio, TX.

# IIS LEGISLATION

A recent CDC legislative survey of all states plus Washington DC revealed that:

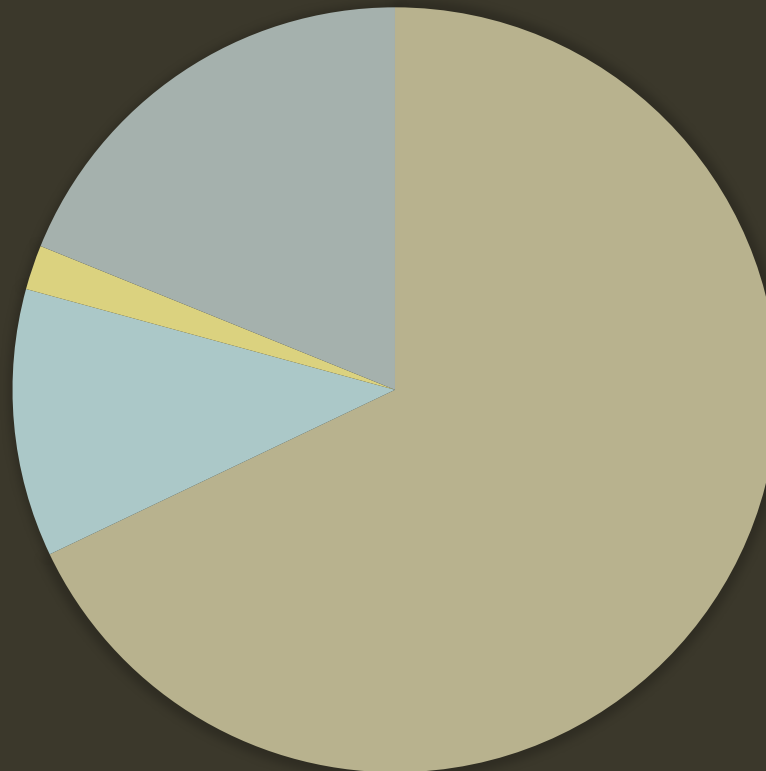
- 53\* IIS authorized to collect immunization records
- IIS in 49 of 50 states plus Washington DC & 3 cities
- 47 of 50 states plus Washington DC are lifespan IIS
- 42 of 50 states plus Washington DC are opt-out IIS for adults

# 53 JURISDICTIONS AUTHORIZED TO OPERATE IIS FOR CHILDREN

Rely on  
general public  
health statues  
or  
regulations,  
10, 19%

Laws allow  
sharing of  
health care  
information,  
1, 2%

Laws  
authorize  
sharing of  
immunization  
information,  
6, 11%



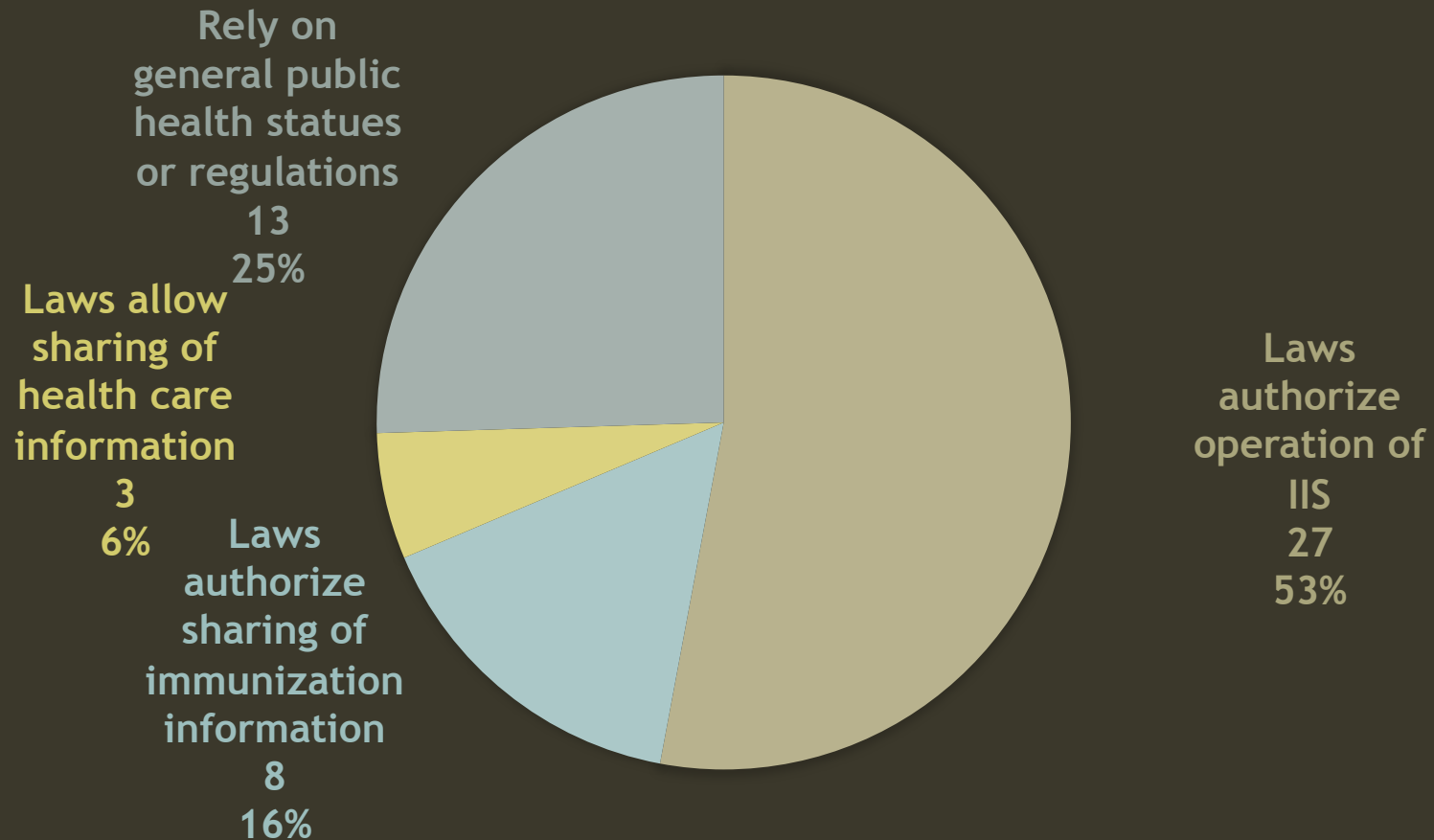
Laws  
authorize  
operation of  
IIS, 36, 68%

Source: IIS: A Decade of Progress in Law and Policy;  
[http://journals.lww.com/jphmp/Abstract/publishahead/  
Immunization\\_Information\\_Systems](http://journals.lww.com/jphmp/Abstract/publishahead/Immunization_Information_Systems)



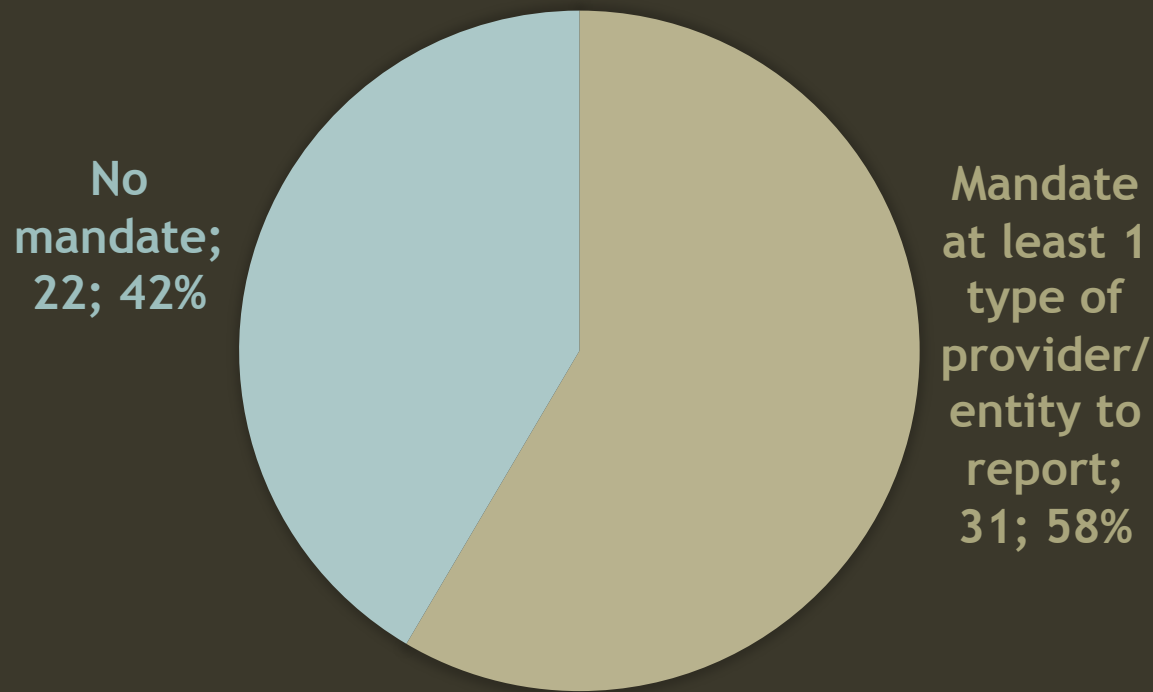


# 51 JURISDICTIONS AUTHORIZED TO OPERATE AN IIS FOR ADULTS



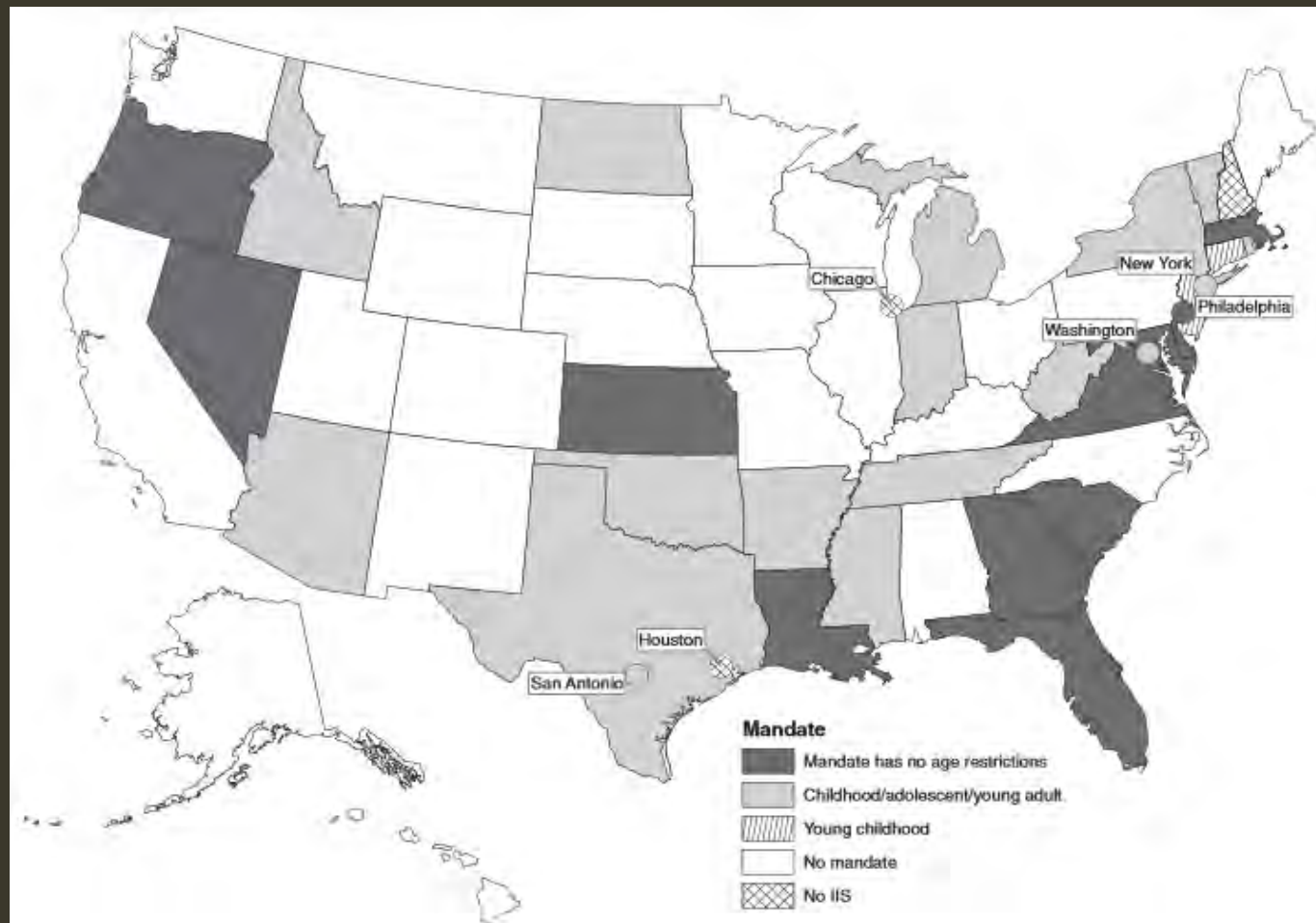
Source: IIS: A Decade of Progress in Law and Policy;  
[http://journals.lww.com/jphmp/Abstract/publishahead/Immunization\\_Information\\_Systems](http://journals.lww.com/jphmp/Abstract/publishahead/Immunization_Information_Systems)

# REPORTING MANDATES: ~31 OF 53 JURISDICTIONS HAVE MANDATES



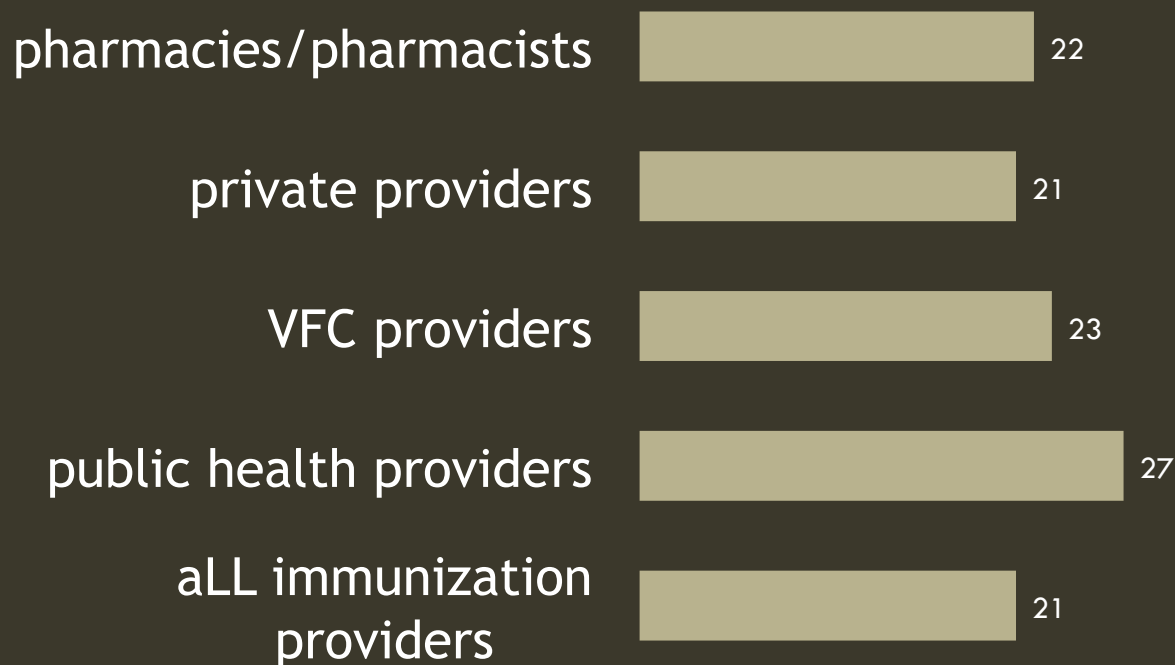
Source: IIS: A Decade of Progress in Law and Policy;  
[http://journals.lww.com/jphmp/Abstract/publishahead/  
Immunization Information Systems](http://journals.lww.com/jphmp/Abstract/publishahead/Immunization_Information_Systems)

# JURISDICTIONS WITH REPORTING MANDATES



# WHO IS MANDATED TO REPORT?

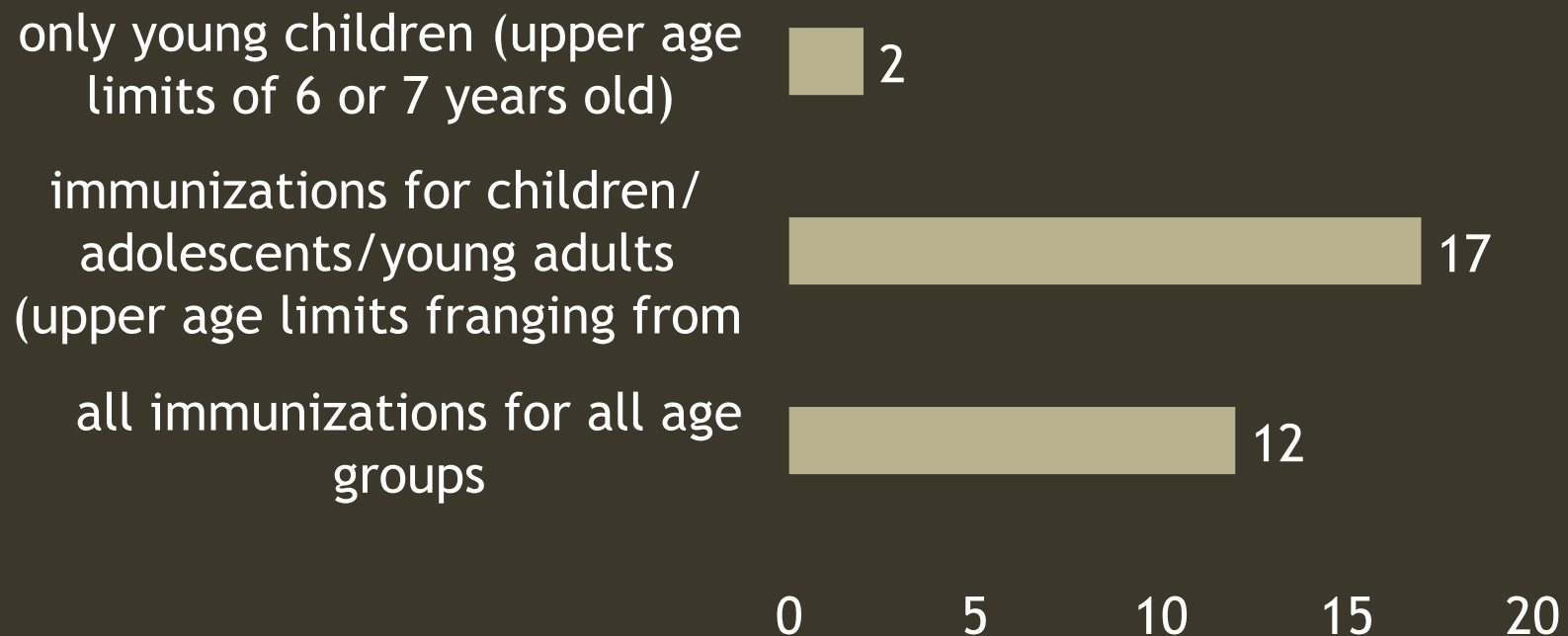
31 Jurisdictions



Source: IIS: A Decade of Progress in Law and Policy;  
[http://journals.lww.com/jphmp/Abstract/publishahead/  
Immunization\\_Information\\_Systems](http://journals.lww.com/jphmp/Abstract/publishahead/Immunization_Information_Systems)

# FOR *WHOM* DO SHOTS GET REPORTED?

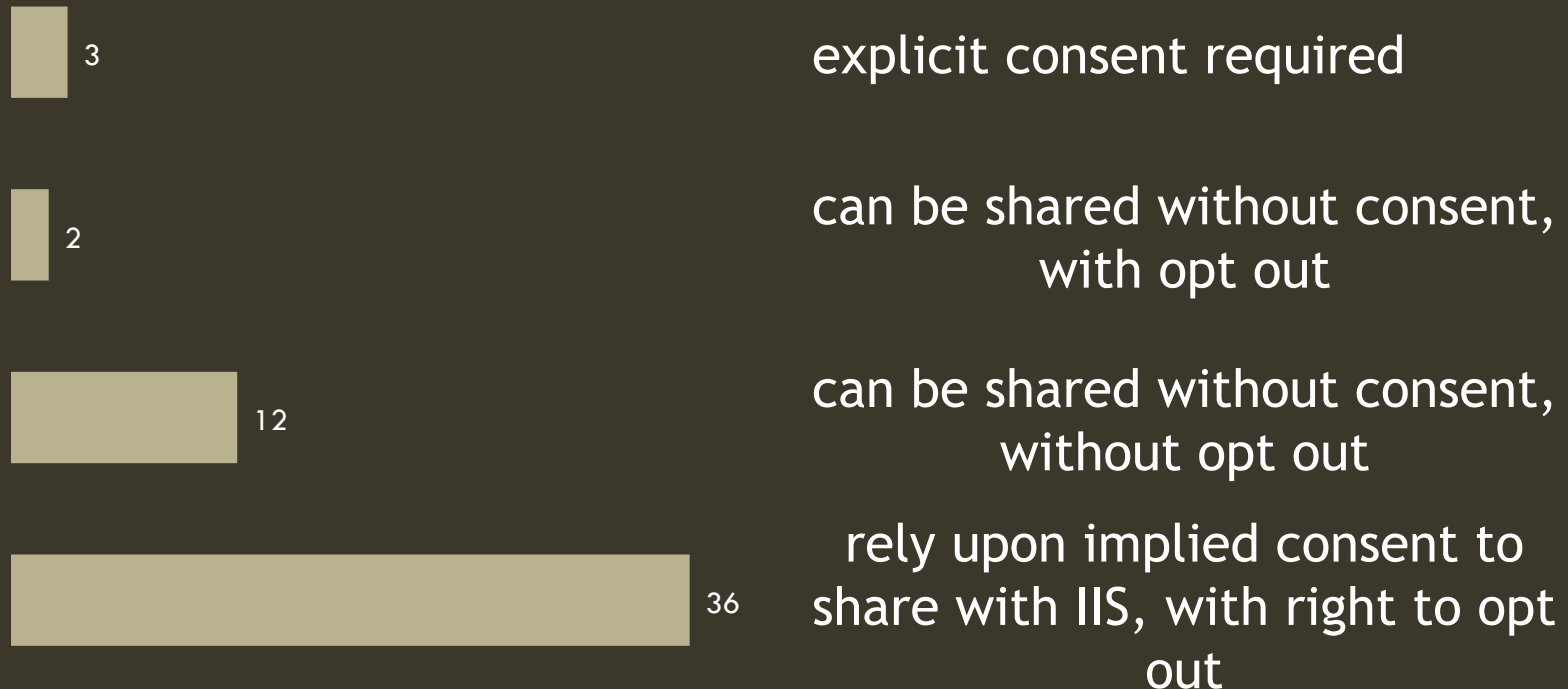
31 Jurisdictions



Source: IIS: A Decade of Progress in Law and Policy;  
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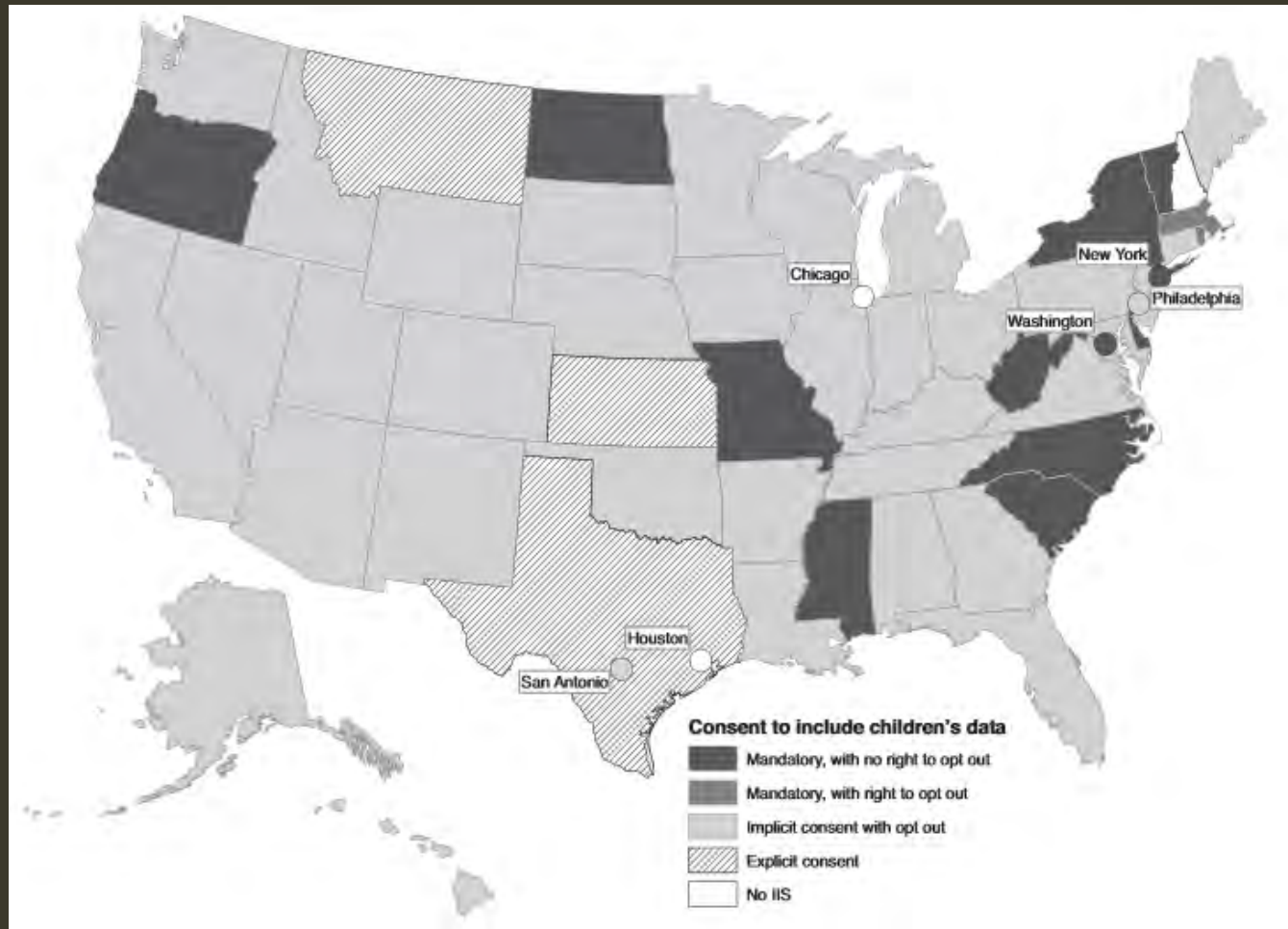
# CONSENT: CHILDHOOD IMMUNIZATIONS

53 jurisdictions



Source: IIS: A Decade of Progress in Law and Policy;  
[http://journals.lww.com/jphmp/Abstract/publishahead/  
Immunization\\_Information\\_Systems](http://journals.lww.com/jphmp/Abstract/publishahead/Immunization_Information_Systems)

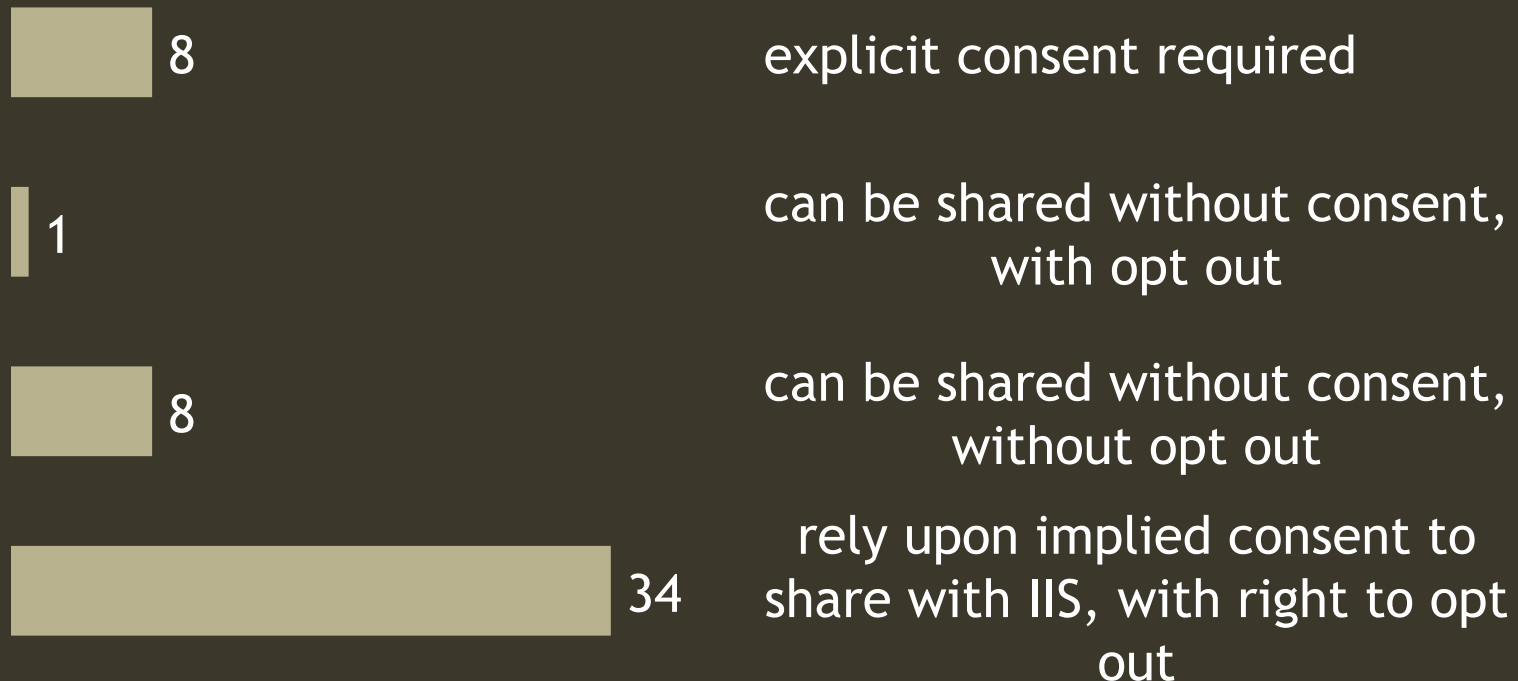
# CONSENT: CHILDHOOD IMMUNIZATIONS





# CONSENT: ADULT IMMUNIZATIONS:

51 jurisdictions



Source: IIS: A Decade of Progress in Law and Policy;  
[http://journals.lww.com/jphmp/Abstract/publishahead/Immunization\\_Information\\_Systems](http://journals.lww.com/jphmp/Abstract/publishahead/Immunization_Information_Systems)

# IIS CHALLENGES & SUCCESSES

## Successes

- 49 states have IIS and 50<sup>th</sup> is in development
- Most able to electronically exchange information
- Many standardized many operations/functions
  - Patient de-duplication
  - Vaccine data quality
  - Patient status
  - Vaccine forecasting

## Challenges

- Percentage of adults in IIS still low
- Policy issues still exist
- Can't easily exchange data with another state (but there is hope!)
- Implementing standards takes time & lacks mandate
- Still many areas to standardize

PHARMACIES & IIS

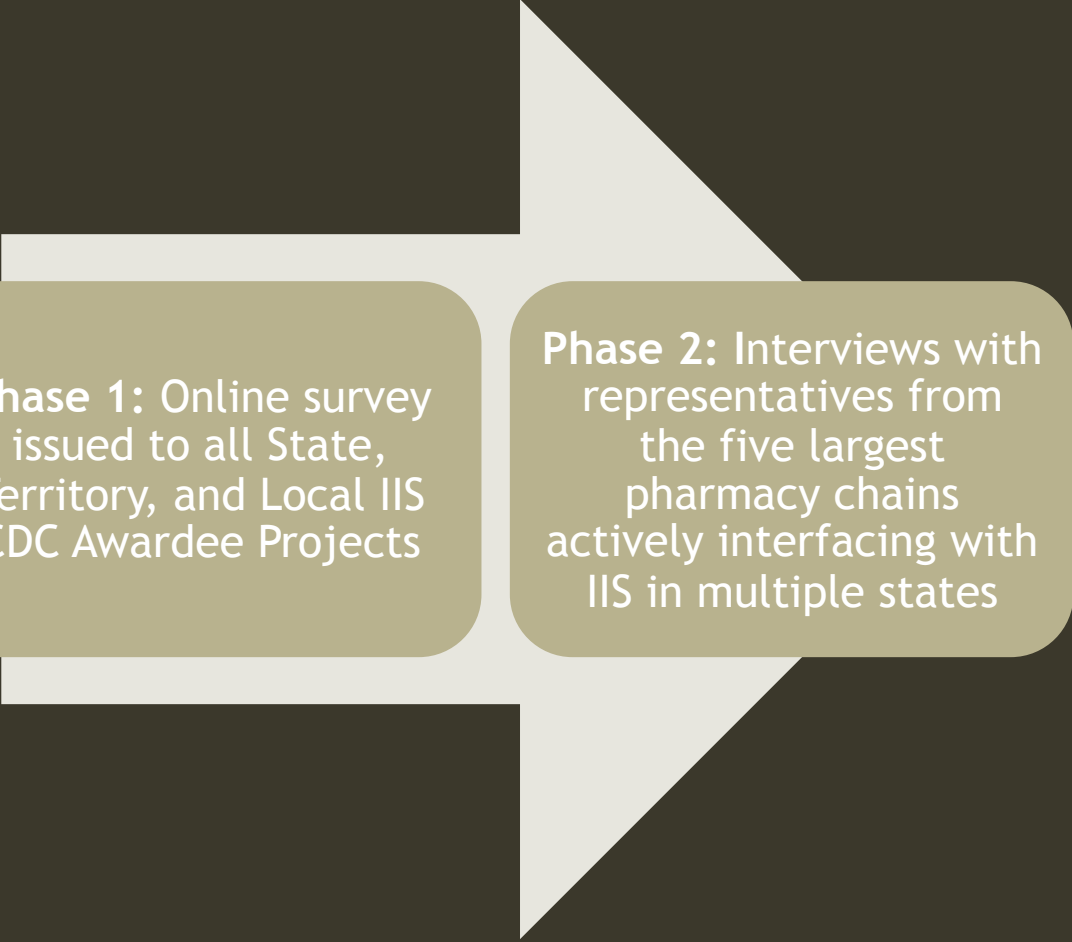
# “SURVEY OF IMMUNIZATION REPORTING TO IIS BY MAJOR U.S. PHARMACIES”

[HTTP://WWW.IMMREGISTRIES.ORG/RESOURCES/](http://www.immregistries.org/resources/)

[AIRA\\_PHARMCY\\_IIS\\_WHITE\\_PAPER.PDF](#)

- Published January 2014
- Survey Purpose:
  - Examine work to connect IIS & Pharmacies
  - Identify pharmacies providing immunizations
  - Identify pharmacies reporting vaccinations administered to IIS
    - Ascertain nature and quality of data received
  - Capture successes and challenges
  - Identify efforts to increase pharmacy reporting to IIS

# METHODS



Phase 1: Online survey issued to all State, Territory, and Local IIS CDC Awardee Projects

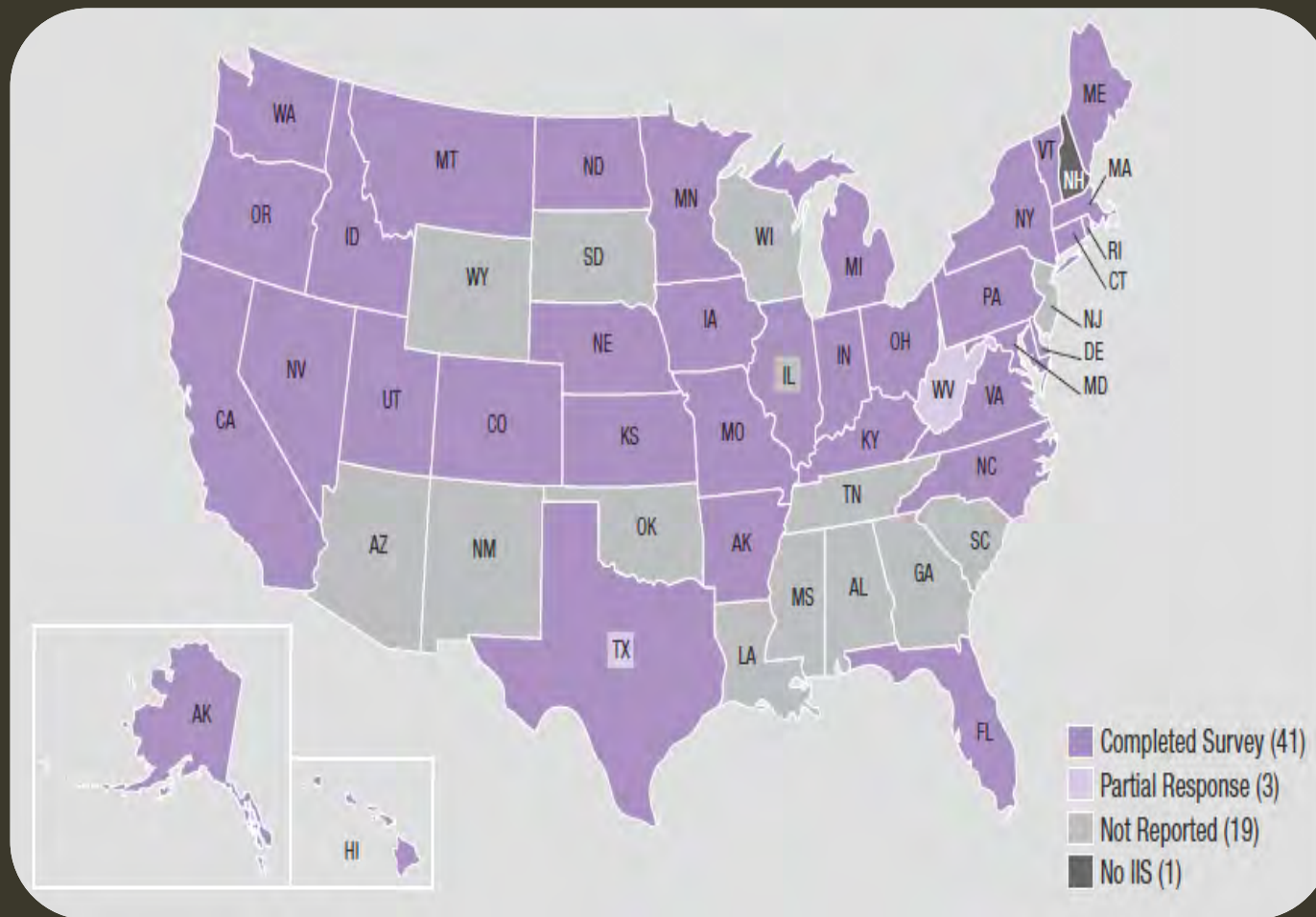
Phase 2: Interviews with representatives from the five largest pharmacy chains actively interfacing with IIS in multiple states

# PHARMACY INTERVIEW PURPOSE

- Improve understanding of pharmacy approach to vaccination and reporting
- Provide balance and validation of IIS Survey responses

# RESULTS

# MAP OF IIS SURVEY RESPONSES





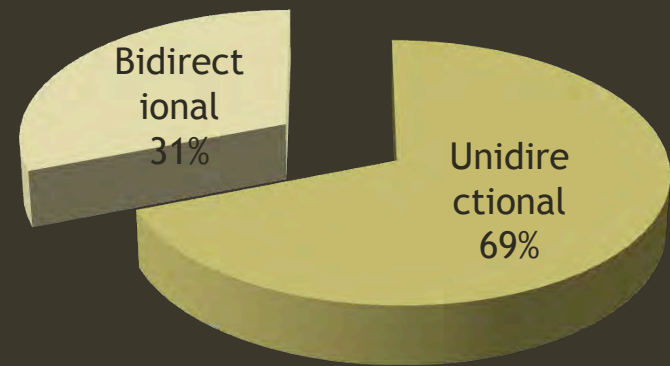
# MAJOR FINDINGS

Of state and project areas responding to survey (n=45)

- Pharmacies allowed to provide vaccinations in 42 (93%)
- Pharmacies report doses administered to IIS in 36 (80%) jurisdictions
- Pharmacies required to report in 22 (49%)
- Pharmacists will generally administer whatever vaccinations allowed in accordance with individual state laws

# MOST COMMON DATA SUBMISSION METHODS & FREQUENCY

Flat files loaded manually (26%),  
HL7 batch (25%) and  
Manual data entry (23%)



For Electronic Interfaces:

- Weekly data feeds (42%)
- Daily feeds (28%)

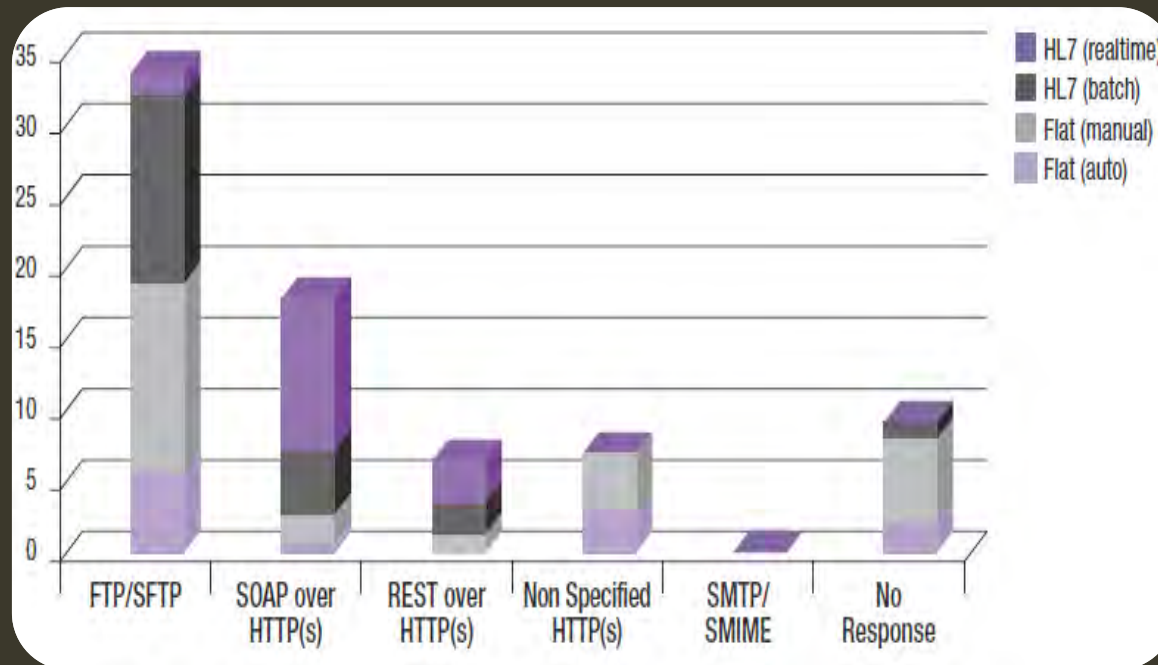
## REPORTING (CONT.)

- For pharmacies reporting electronically (n = 64) multi-site feed including all sites/clinics in jurisdiction most common practice (83%)
- For manual submissions (n=22), data entry is almost always performed at the individual site/clinic level (82%)

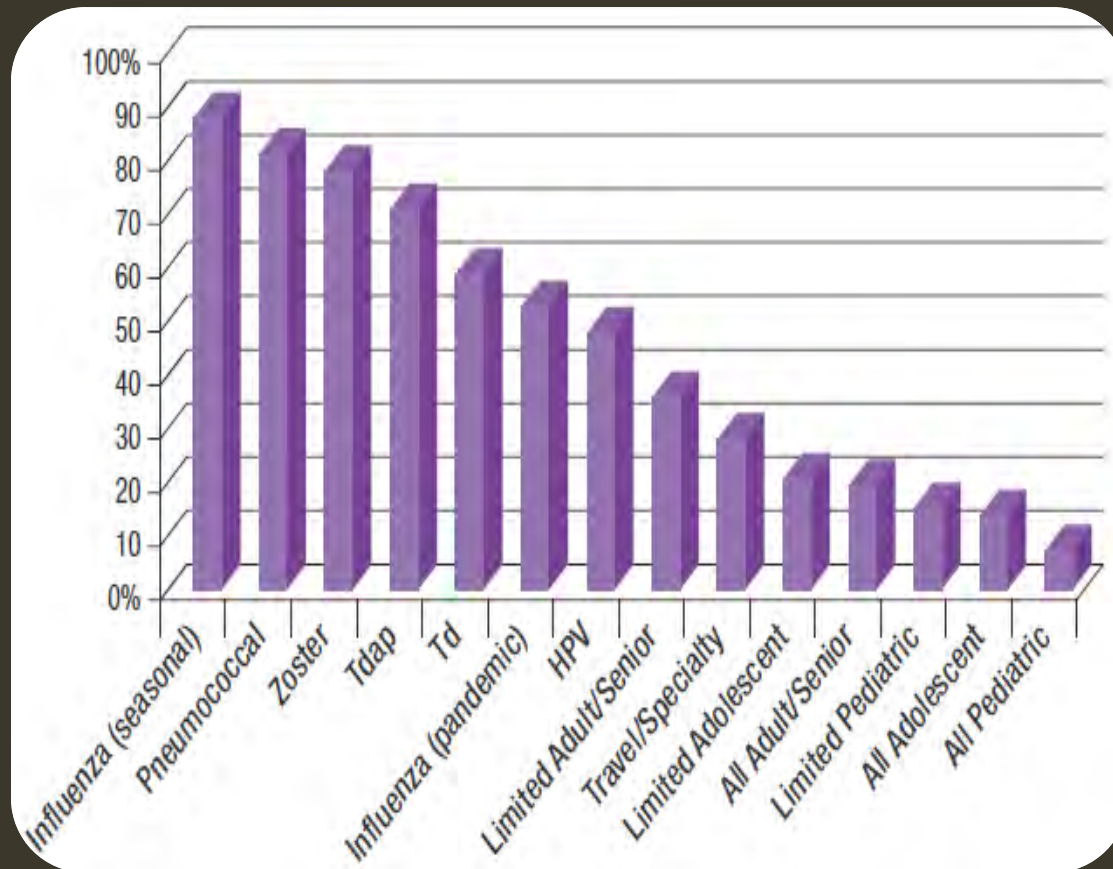
# MOST COMMON TRANSPORT METHODS

FTP/SFTP (47%)

SOAP over HTTP(s) (24%)



# TYPES OF VACCINATIONS REPORTED BY FREQUENCY



# SUCCESSSES AND CHALLENGES

# SUCCESSSES

- Significant increase in adult immunization records
- Improved quality of adult data
- Improvement of overall patient care
- System Improvements

# CHALLENGES - IIS PERSPECTIVE

- Data quality issues
- Lack of unique patient identifiers
- Variations in patient's name
- Lack of patient address
- Inability to collect required data elements
- Inability to generate file format supported by the IIS



# CHALLENGES - PHARMACY PERSPECTIVE

- Restrictions on type of files IIS are willing/able to accept
- Limited IIS staffing resources and infrastructure
- State variations in IIS specifications
- IIS consent requirements mandated through state/local law

# RECOMMENDATIONS

# RECOMMENDATIONS

- Evaluate IIS reporting specifications to standardize for partners that span multiple states/jurisdictions
  - required fields, reporting methods supported, reporting timelines
- IIS not supporting current standards should establish & communicate implementation timelines to pharmacy partners
- Avoid requiring pharmacies to perform duplicate data entry

## RECOMMENDATIONS (CONT.)

- Assemble partners with ability to influence public health policy and pharmacy vaccination practice
- Include pharmacy partners in immunization & IIS related meetings and educational opportunities whenever appropriate

## RECOMMENDATIONS (CONT.)

- Leverage partnerships to increase Pharmacy-IIS interfaces and improve patient care.
- Consider future study opportunities to evaluate pharmacy data quality

# WHY IIS? A REMINDER

*IIS  
create*

comprehensive  
immunization  
records

*IIS  
generate*

reminders to  
ensure on-  
time  
immunization

*IIS assist*

with clinical  
decision  
support and  
forecasting

*IIS assist*

with vaccine  
ordering and  
inventory  
management

# AIRA WEBSITE RESOURCES



[www.immregistries.org](http://www.immregistries.org)

# Thank you!

Danielle Reader-Jolley

Participating Immunization Information Systems

CVS

Kroger

Rite Aid

Safeway

Surescripts

Walgreens



QUESTIONS?

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202-552-0195