

# National view of Immunization Information Systems



**Alan R. Hinman, MD, MPH**  
**Missouri Immunization Conference**  
**November 17, 2010**



# National Objective for Registries

---

**Increase to 95% the proportion of children aged <6 years who participate in fully operational immunization registries**

***(Healthy People 2010, objective 14.26)***



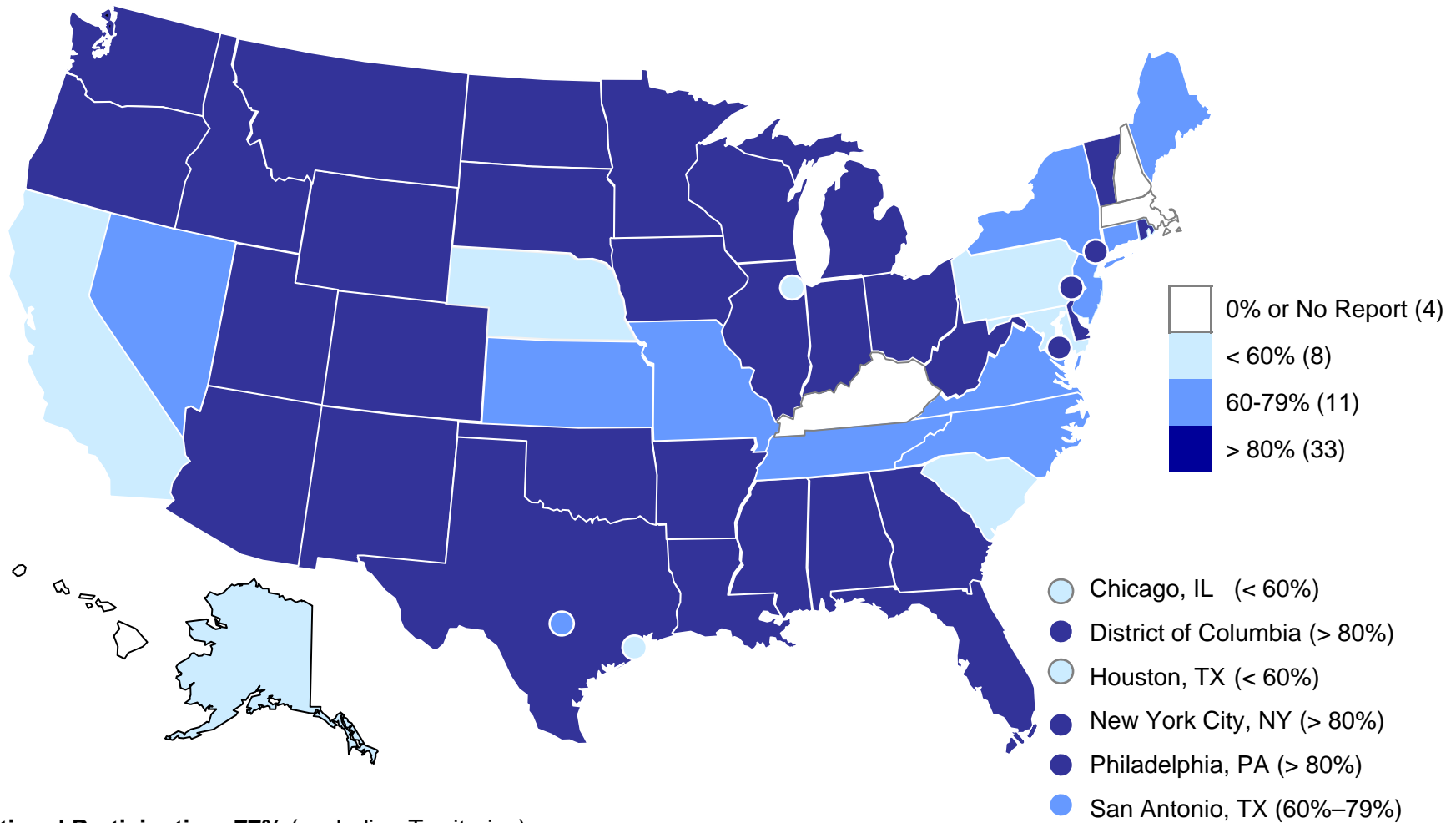
# Participation in IIS – 2009

---

	<u>US</u>	<u>MO</u>
<b>Children &lt;6 (2+ doses)</b>	<b>78%</b>	<b>68%</b>
<b>Children 11-18 (2+ doses)*</b>	<b>65%</b>	<b>80%</b>
<b>Adults <math>\geq</math>19 (enrolled)*</b>	<b>24%</b>	<b>32%</b>
<b>Public provider sites</b>	<b>80%</b>	<b>27%</b>
<b>Private provider sites</b>	<b>38%</b>	<b>35%</b>

**\*2008 IISAR**

# Percentage of children aged < 6 years participating in a grantee immunization information system -- United States, and six cities, 2009



**National Participation: 77%** (excluding Territories)

**Source:** CY 2009 IISAR



# Immunization Information Systems Age Groups Participating in an IIS

	U.S. - 2000	U.S. - 2009
Participation of U.S. children < 6 years in an IIS with 2 or more immunizations.	21%	77% (18.4 million children < 6 years)
Participation of U.S. adolescents 11-18 years in an IIS with 1 or more immunizations.	-	46% (15.1 million adolescents 11-18 years)
Participation of U.S. adults >19 years in an IIS with 1 or more immunizations.	-	13% (30.8 million adults >19 years)
U.S. participation – all ages.	-	33% (88.5 million persons of all ages)

Source: 2009 Immunization Information System Annual Report



# Immunization Information Systems Provider Site Participation in IIS

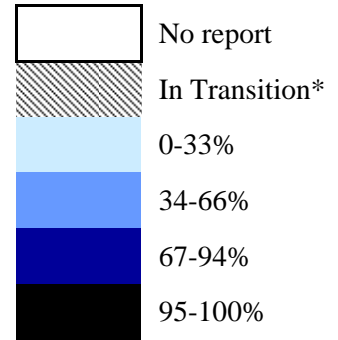
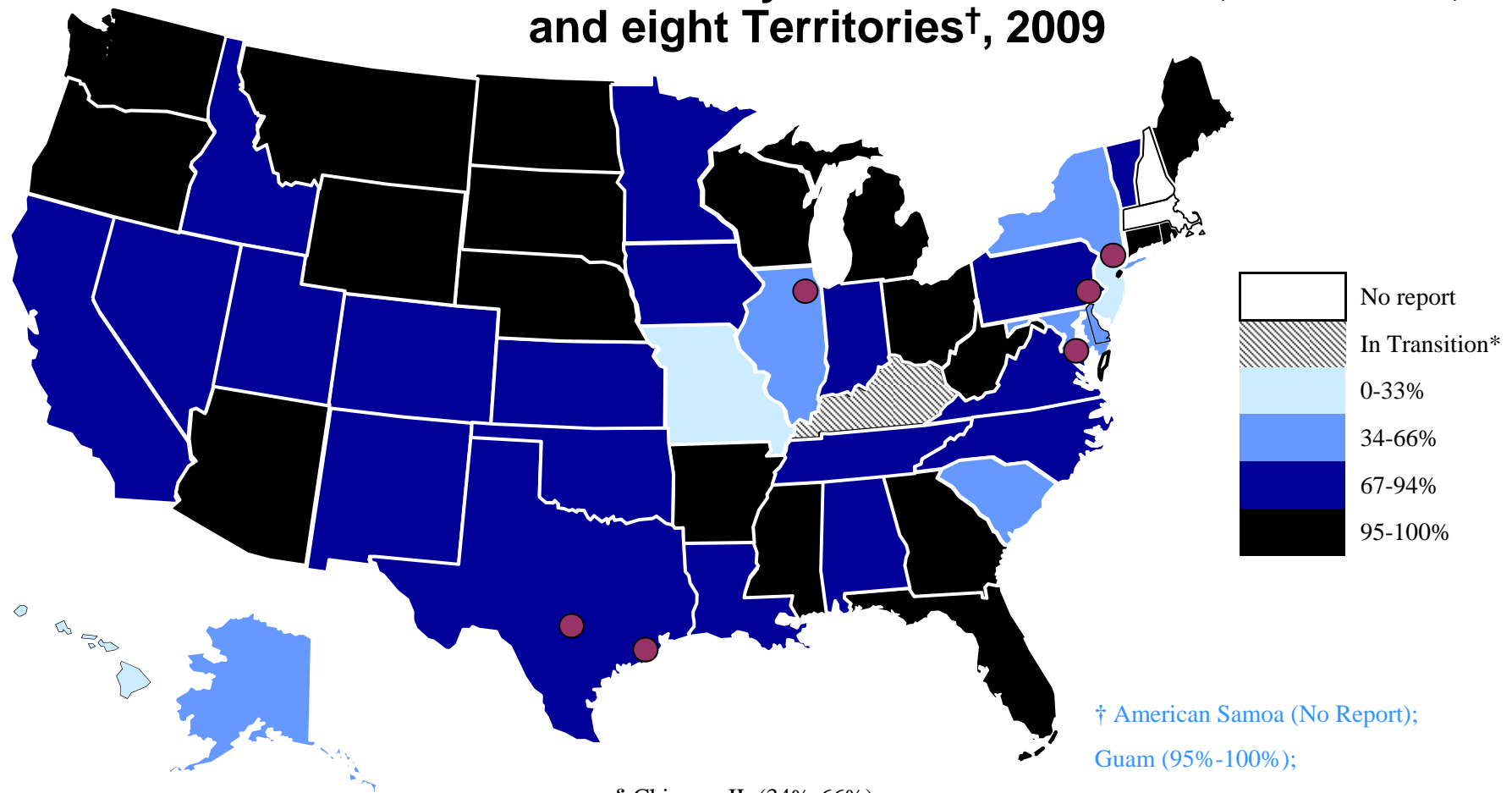
---

	US - 2000	US - 2009
Participation of <u>public provider sites</u> submitting data to an IIS in the past 6 months.	38%	80%(11,191 public provider sites)
Participation of <u>private provider sites</u> submitting data to an IIS in the past 6 months.	19%	38%(34,990 private provider sites)
Participation of <u>all U.S. provider sites</u> submitting data to an IIS in the past 6 months.	-	44%(46,181 provider sites)

Source: 2009 Immunization Information System Annual Report



# Percentage of public provider sites actively participating in a grantee immunization information system - United States, six cities<sup>§</sup>, and eight Territories<sup>†</sup>, 2009



**National Coverage: 80%** (excluding Territories)

Source: CY2009 IISAR

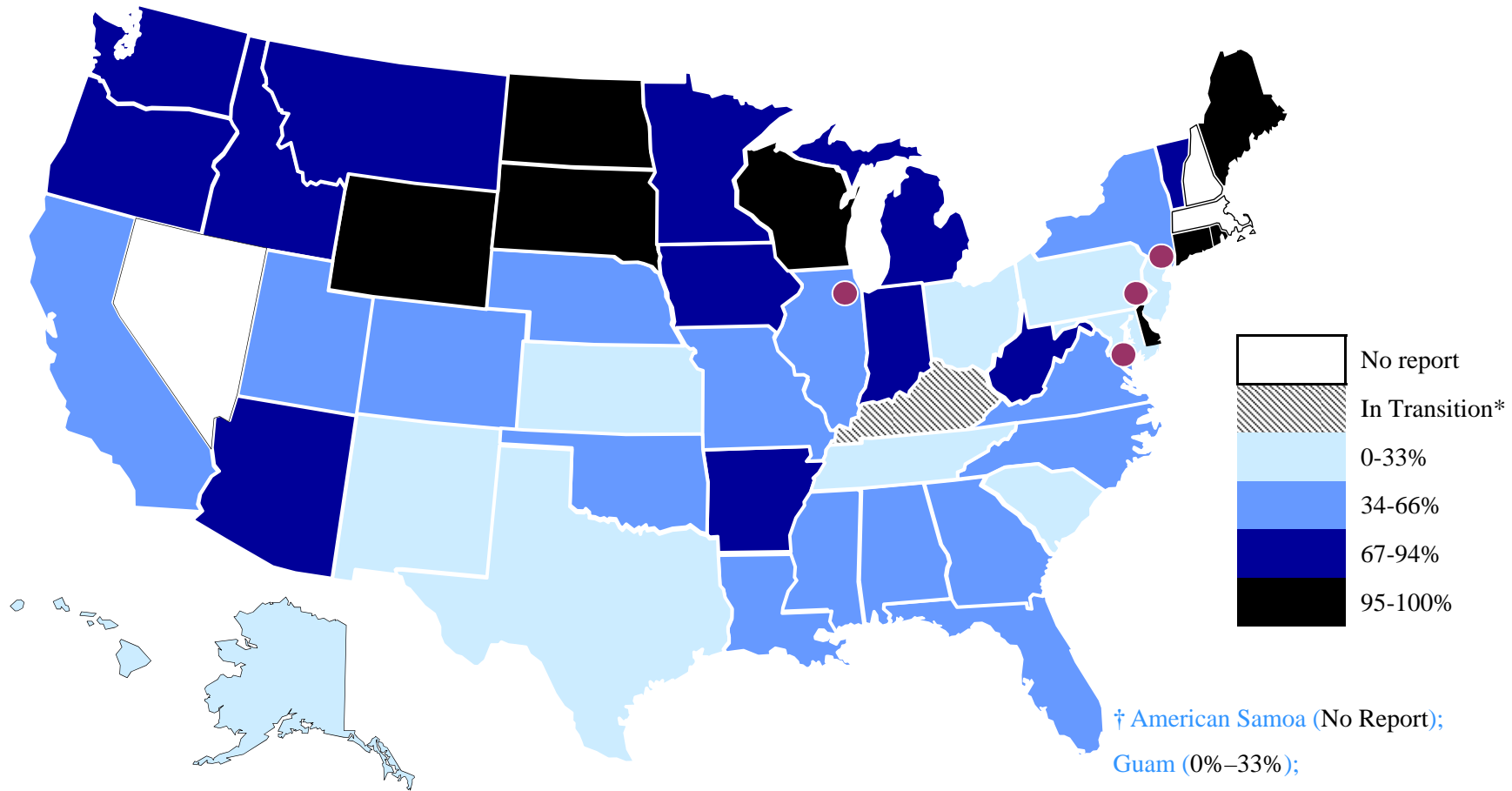
\* In transition is defined as a grantee implementing a new IIS product.

§ Chicago, IL (34%-66%);  
 District of Columbia (95%-100%);  
 Houston, TX (34%-66%);  
 New York City, NY (95%-100%);  
 Philadelphia, PA (67%-94%);  
 San Antonio, TX (95%-100%).

† American Samoa (No Report);  
 Guam (95%-100%);  
 Marshall Islands (95%-100%);  
 Federated States of Micronesia (67%-94%);  
 N. Mariana Islands (No Report);  
 Palau (in Transition);  
 Puerto Rico (34%-66%);  
 Virgin Islands (No Report).



# Percentage of private provider sites actively participating in a grantees immunization information system-- United States, six cities<sup>§</sup>, and eight Territories<sup>†</sup>, 2009



<sup>†</sup> American Samoa (No Report);  
 Guam (0%–33%);  
 Marshall Islands (No Report);  
 Federated States of Micronesia (No Report);  
 N. Mariana Islands (No Report);  
 Palau (in Transition);  
 Puerto Rico (34%-66%);  
 Virgin Islands (No Report).

<sup>§</sup> Chicago, IL (0%-33%);  
 District of Columbia (95%–100%);  
 Houston, TX (34%–66%);  
 New York City, NY (67%–94%);  
 Philadelphia, PA (67%–94%);  
 San Antonio, TX (0%–33%).

**National Coverage: 38%** (excluding Territories)  
**Source:** CY2009 IISAR  
 \* In transition is defined as a grantee implementing a new IIS product.





# IIS Uses Reported in Program Surveys

Use Reported by IIS Program	2007	2009
Reminder/Recall for Clients**	68%	89%
AFIX (Provider Assessment and Feedback)**	77%	86%
Forecasting algorithm (Provider Reminders**)	-	84%
UTD assessments (ind)/Coverage (pop)	82%/84%	89%/86%
Routine surveillance (look-up vaccine hx)	80%	75%
Outbreak management	66%	79%
New vaccine uptake	75%	82%
Track doses administered	79%	82%
Pockets of need	71%	71%
Emergency preparedness	55%	86%
Track adverse events	43%	54%

Data source: Annual immunization progress report for CY2009, CDC

*Public Health* **INFORMATICS** *I n s t i t u t e*

\*\* TF Recommended Interventions



# IIS Progress: 2000-2009



Capability	2000	2007	2009
Lifespan IIS	NR	77%	84%
Child participation (2+ iz) *	18%	71%	78%
Adolescent participation 11–12 yrs (2+ iz)	NR	70%	42%**
Adult participation (2+ iz)	NR	21%	14%**
Public provider participation	38%	73%	89%
Private provider participation	19%	53%	71%
% of doses reported w/in 30 days	NR	70%	70%

**Data source: Annual immunization progress report for CY2009, CDC**

\* HP 2010 Objective; iz=immunization

\*\* Excluded seasonal flu vaccinations in 2009



# IIS Health Level 7 (HL7) Implementation December 31, 2009

---

- **Full Compliance - able to receive and send messages using HL7:**
  - 30 of 51 grantees or 59%
- **Partial Compliance - able to receive or send messages using HL7:**
  - 4 of 51 grantees or 8%
- **No Compliance - unable to receive or send messages using HL7:**
  - 17 of 51 grantees or 33%
- **No or Partial Compliance after excluding HITECH awardees**
  - 12 of 51 grantees or 24%
- **Expected Compliance on or before 2012 – 76%**



# EHR- IIS Interoperability

---

- The 2009 IISAR requested information about the number of EHRs providing immunization data directly to your IIS through an electronic interface
- Response: 37 grantees reported that 3,618 EHRs were electronically reporting data to an IIS

Source: 2009 Immunization Information System Annual Report



# EHR- IIS Interoperability

---

<u>EHR Vendor</u>	<u># Grantees with Product</u>
Allscripts – Touchworks	16
Connexin Software, Inc - Office Practicum	12
eClinical - eClinical Works	22
eMD	9
Epic Systems – Epicare	13
GE Medical - Centricity (Logician)	16
Misys Healthcare Systems - Misys EMR	14
Netsmart – Insight	7
NextGen - NextGen EMR	22
PCC	5
RPMS	11

Source: 2009 Immunization Information System Annual Report

# Changes in Vaccination Rates Reported in Studies Evaluating IIS-Generated Client reminder/recall (n=13 study arms from 10 studies)



◆ Greatest Design Suitability    ▲ Moderate Design Suitability

Study (baseline%)

Hambidge 04 (71)

Kempe 05 (58)

Beaudrault 09 (57)

Irigoyen 06-1 (48)

Irigoyen 06-2 (48)

LeBaron 04-1 (44)

LeBaron 04-2 (44)

Dombkowski 10 (40)

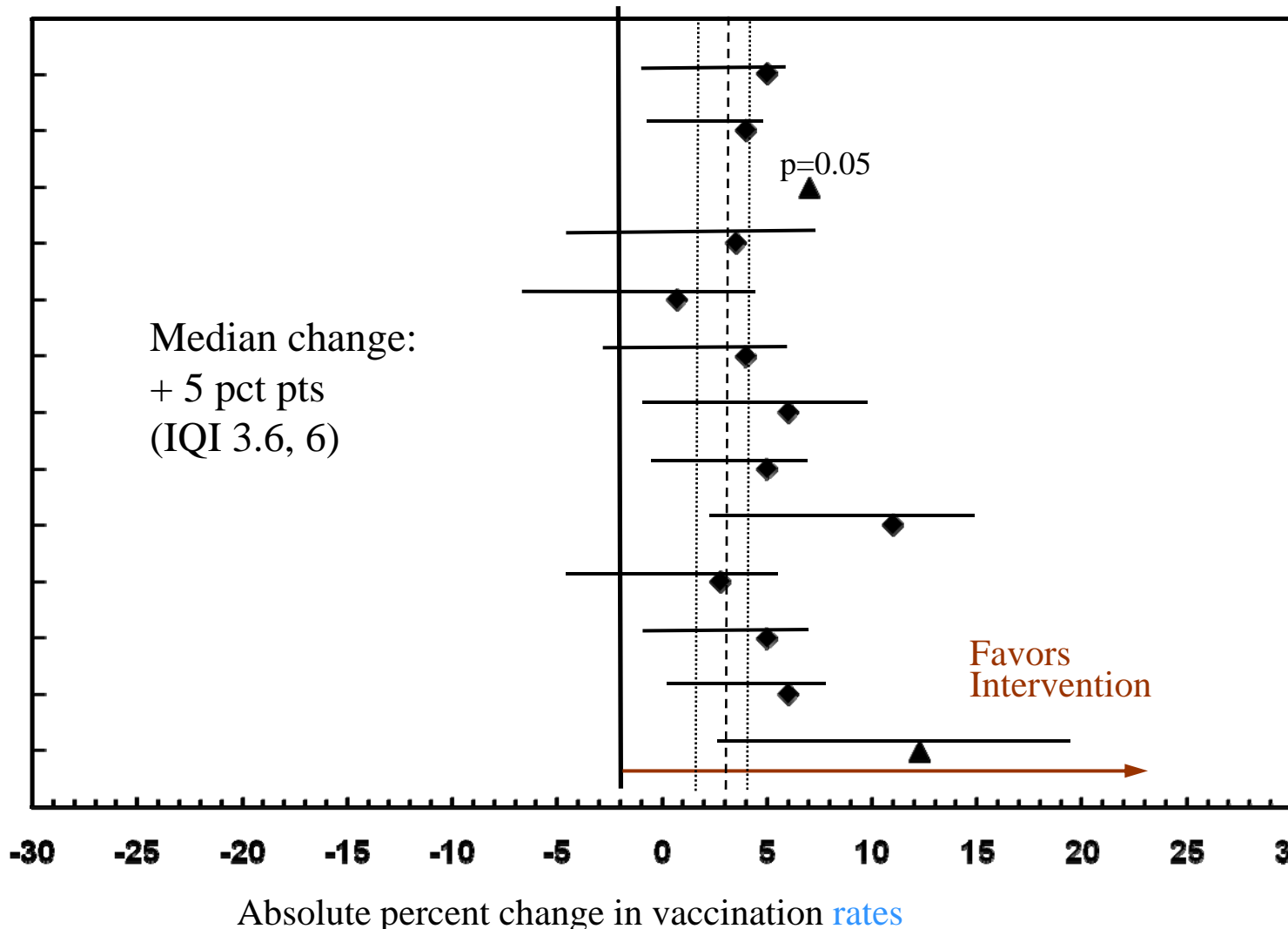
Hambidge 09 (33)

Daley 02 (20)

Dombkowski 10-1 (20)

Dombkowski 10-2 (20)

Stockwell 10 (13)



Published studies are underlined



# Information on Barriers to Implementation

---

- IIS have already been implemented in most US jurisdictions
- The major barriers are...
  - Provider participation (time/effort/requirements)
  - Client participation
  - Achieving point-of-care use among vaccination providers
    - Confidence in completeness and timeliness of the data
    - Simplicity in access, use, and reporting
- FERPA requirements
  - Schools and healthcare providers



# Overall Coordination Team Assessment

---

- **A large body of evidence describe IIS capabilities..**
  - ◆ **To generate or support recommended Task Force interventions**
  - ◆ **In school documentation of student vaccination status**
  - ◆ **In outbreak response**
  - ◆ **In vaccine accountability**
  - ◆ **In expanding and enhancing program surveillance and investigation**





# Task Force Recommendation

---

- **The Task Force on Community Preventive Services recommends immunization information systems on the basis of **strong** evidence of effectiveness in increasing vaccination rates.**

**June 16, 2010**