Immunization Registry Operational Guidelines Evaluation

Final Report

July 31, 2014

Background

- MIROW has created a series of best practice operational guidelines for Immunization Information Systems (IIS)
- These guidelines promote consistent operational practices across state and local IIS
- Evaluation funded by AIRA and conducted by the University of Michigan

Evaluation Objectives

- To assess the degree to which three MIROW guides have impacted IIS operations:
  - *Management of Moved or Gone Elsewhere (MOGE) Status and Other Patient Designations in IIS* (2005)
  - *Vaccination Level Deduplication in Immunization Information Systems* (2006)
  - *Data Quality Assurance in IIS: Incoming Data* (2008)

Methods

- Two phases
  - Broad evaluation: to assess MIROW guideline use across a wide range of MIROW recommendations
  - In-depth evaluation: to assess impacts of guide use and key MIROW recommendations in greater detail
- Focus on “direct” use of MIROW guides
  - Defined as demonstrated applications of a MIROW guide
  - Some characterization of “indirect” use
  - IIS programs could have both direct and indirect use

Methods

- Broad evaluation
  - Semi-structured telephone interviews
  - Study population
    - Comprehensive sample of state and local IIS
    - 50 states and 4 metropolitan areas with independent IIS
  - 45 completed interviews (83%)

Methods

- In-depth evaluation
  - Conducted among a subset of IIS using two complementary approaches
    - Online survey on impacts (27 IIS programs)
      - Two different surveys based on level of direct use
        - » Detailed survey: 15 of 16 programs responded (94%)
        - » General survey: 8 of 11 programs responded (73%)
    - In-depth interview
      - Semi-structured telephone interviews conducted with 7 IIS programs
      - Collected more information on impacts and operational consistency with MIROW guides

Results

IIS Characteristics

Characteristic	Percent (n=44)
IIS Vendor Characteristics	
Envision	14
STC	16
WIR (all)	32
WIR-WI	11
WIR-NY	11
WIR-OR	5
WIR-ME	5
Other IIS vendor	10
In-House system	30
Recent IIS Transitions	
IIS manager turnover (≤ 2 years from date of interview)	39
IIS platform transition (roll out ≤ 2 years from date of interview)	27

Consent and Reporting Characteristics

Characteristic	Percent (n=44)
Ages in IIS	
All Ages	95
Children	5
Consent	
Child	
Implicit consent with opt out	70
Explicit consent (opt in)	7
No consent options provided	23
Adult	
Implicit consent with opt out	66
Explicit consent (opt in)	18
No consent options provided	11
N/A (no adult data in IIS)	5
Mandated Reporting to IIS	
Private Providers	55
Public Providers	61
Pharmacies	55
Other (e.g., schools)	11
None	30

MIROW Involvement and CDC Grant Characteristics

Characteristic	Percent (n=44)
Involvement in MIROW	
Patient Status Guide (2005)	23
Vaccination-Level Deduplication Guide (2006)	25
Incoming Data Quality Guide (2008)	16
Sentinel site (current or past)	27
CDC Grant Participant	
Electronic heath record (EHR) interoperability	75
Two-dimensional (2D) barcodes pilot participant	23
Sentinel site (current or past)	21

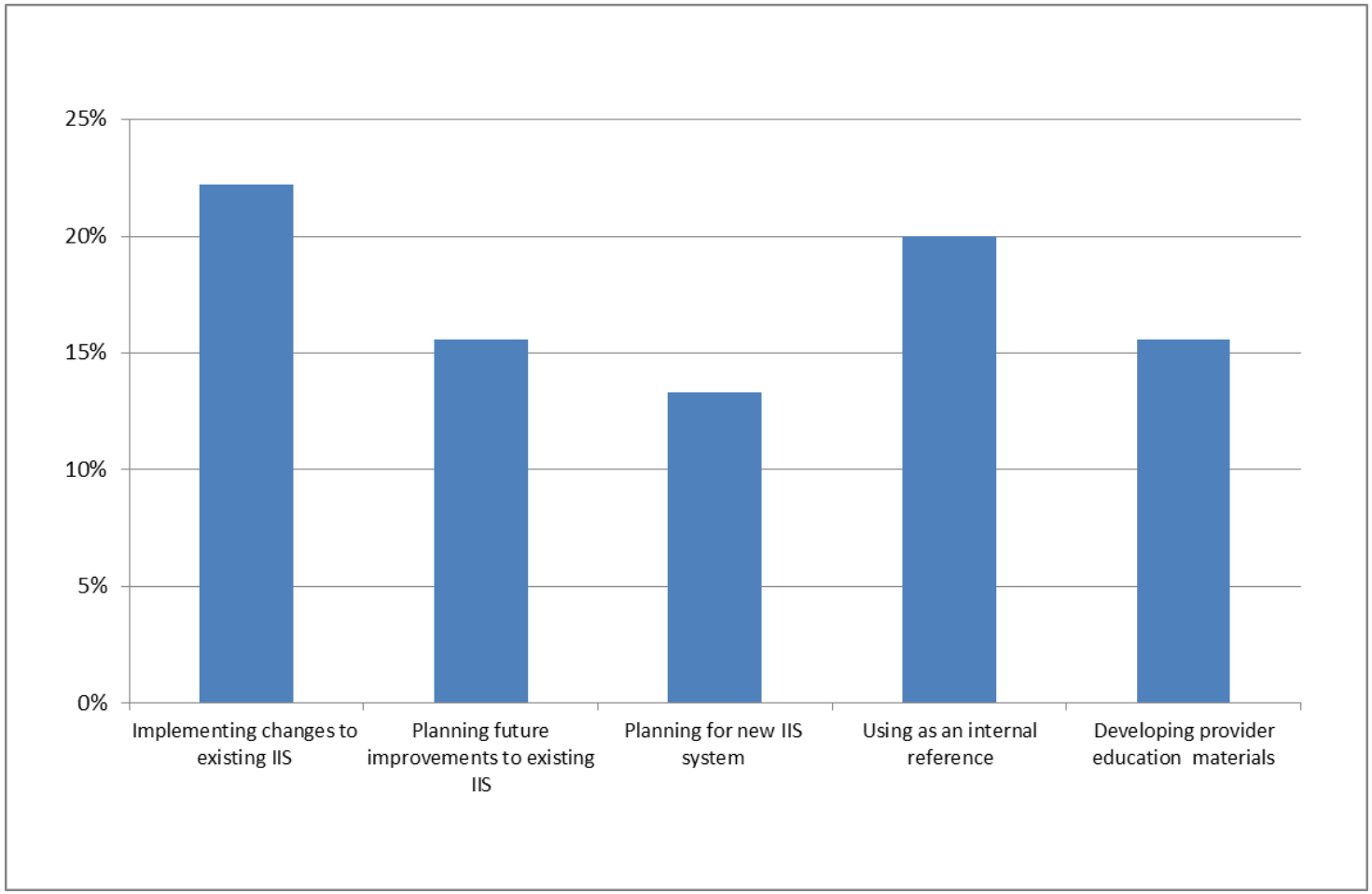
MIROW Guide Use

	Patient Status Guide	Vaccination-Level Deduplication Guide	Incoming Data Quality Guide
Familiarity	84%	87%	78%
Direct Use	64%	56%	58%
Overall Use: Direct and Indirect	73%	82%	76%

Patient Status Guide

- 84% of programs (n=38) reported familiarity with this guide
- 64% of programs (n=29) reported direct use of this guide
  - 3 programs were unsure whether the guide had been used due to a recent IIS manager transition

Direct Uses of Patient Status Guide (n=45)



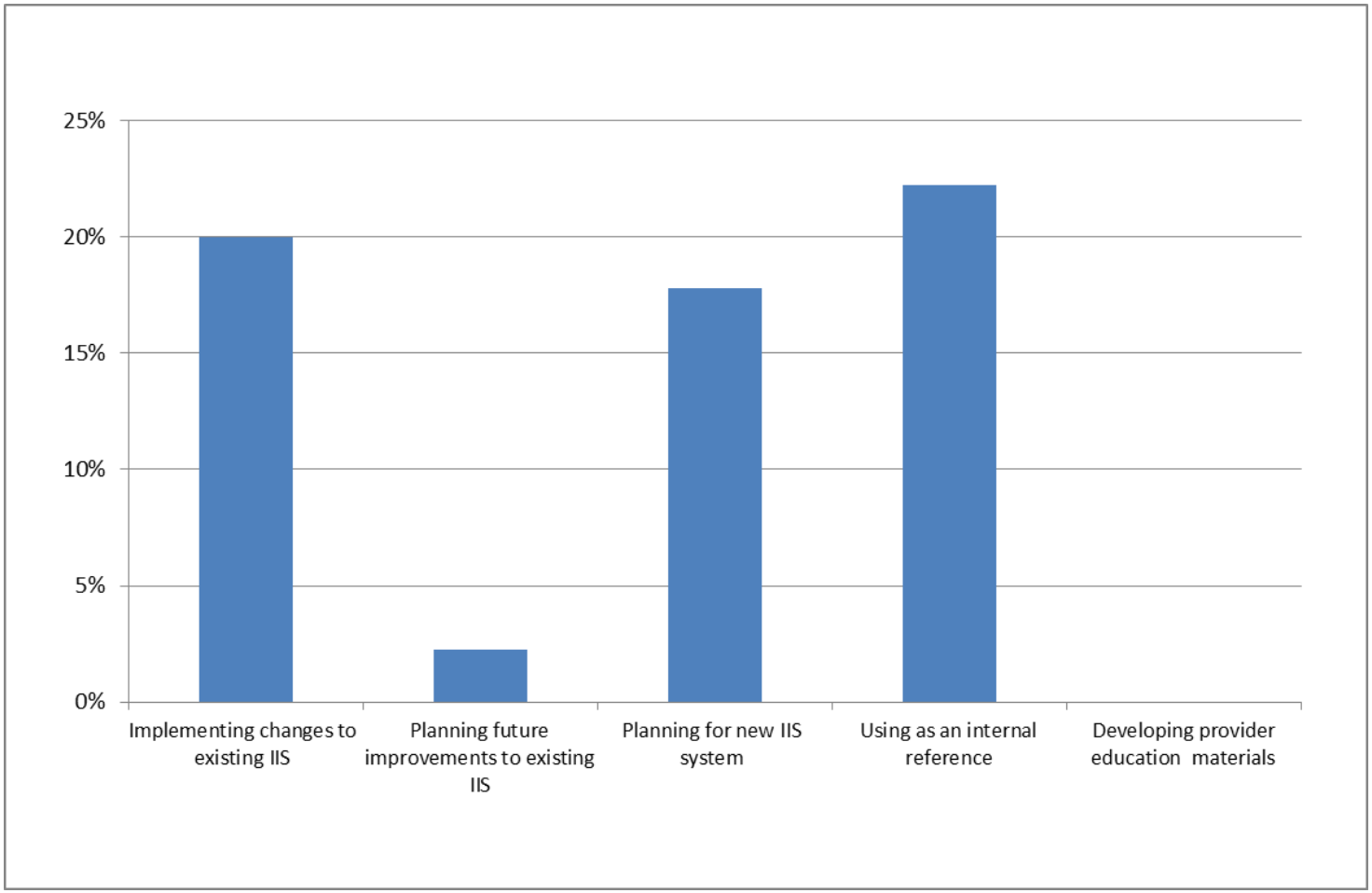
Impacts of Patient Status Guide Use

- Positive impacts far outweighed negative impacts
- Positive impacts most commonly chosen in detailed impact survey (n=15)
  - protocol for when to change patient status (93%)
  - ability to capture patient status at provider level (80%)
- All respondents to general impact survey (n=7) reported positive impact of guide use on understanding of best practices related to patient status

Vaccination-Level Deduplication Guide

- 87% of programs (n=39) reported familiarity with this guide
- 56% of programs (n=25) reported direct use of this guide
  - 5 programs were unsure whether this guide had been used due to a recent IIS manager transition

Direct Uses of Vaccination-Level Deduplication Guide (n=45)



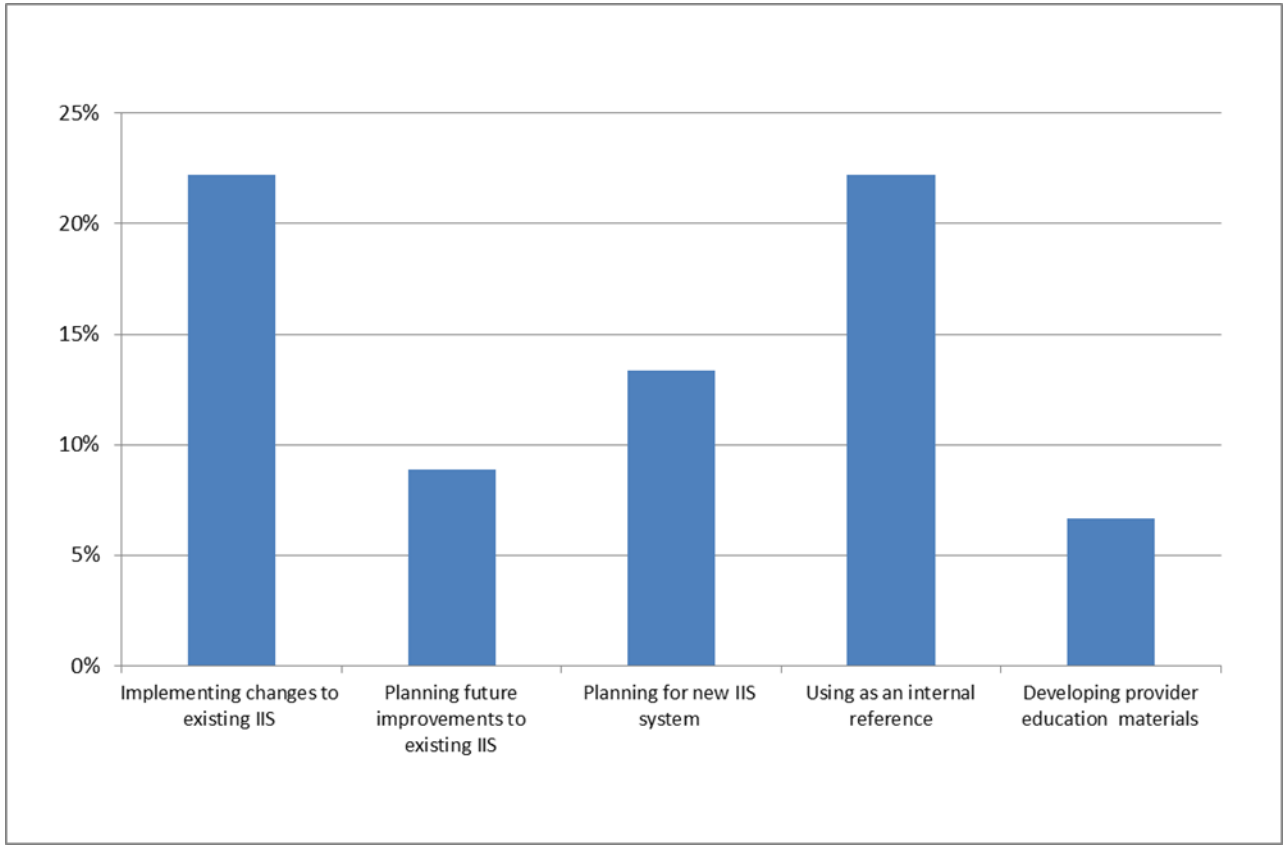
Impacts of Vaccination-Level Deduplication Guide Use

- Again, positive impacts outweighed negative impacts
- Positive impacts most commonly chosen in detailed impact survey (n=13)
  - accuracy of vaccination doses reported to IIS (100%)
  - protocol for addressing duplicate vaccines (92%)
- All respondents to general impact survey (n=7) reported positive impact of guide use on understanding of best practices related to vaccination-level deduplication

Incoming Data Quality Guide

- 78% of programs (n=35) reported familiarity with this guide
- 58% of programs (n=26) reported direct use of this guide
  - 4 programs were unsure whether this guide had been used due to a recent IIS manager transition

Direct Uses of Incoming Data Quality Guide (n=45)



Impacts of Incoming Data Quality Guide Use

- Positive impacts outweighed negative impacts
- Positive impacts most commonly chosen in detailed impact survey (n=12)
  - amount of time spent developing protocol for "pre-certifying" electronic data submitters (92%)
  - amount of time spent with provider/EHR vendors on process for submitting data electronically to IIS (92%)
- All respondents to general impact survey (n=7) reported positive impact of guide use on understanding of best practices related to incoming data quality

Factors Affecting Guide Use

- Maturity of an IIS system and the system's life cycle stage
- Influence of Meaningful Use incentives
- Degree of business process complexity
  - For example, vaccination-level deduplication can be addressed by a more automated process than some facets of patient status
- Degree of IIS vendor involvement

Barriers to Guide Use

- Pressures of potentially competing IIS program priorities
- Reality of resource and staff limitations
- Certain IIS policies and laws can affect the ability of an IIS program to implement components of the guides

Limitations

- Broad or in-depth evaluation interviews may not have fully covered all aspects of MIROW guide use for a particular program
- Self-report of current IIS staff may be impacted by recall bias and by transitions in IIS staff and IIS systems that have occurred since the guides were published

Conclusions

- Overall, direct users considered the guides to be helpful
- The guides had a range of positive impacts, including positive impact on understanding overall best practices
- Few negative impacts were noted and were mainly related to initial investment of time and resources
- Most IIS programs felt the guides had no direct financial impact on their programs

Implications

- Improved data quality
- Reduced IIS staff time
- Efficiencies across IIS programs