

# WISCONSIN IMMUNIZATION REGISTRY REPORT CARDS: IIS DATA QUALITY FEEDBACK TO PROVIDERS

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AIRA National Meeting

Seattle, WA

April 6, 2016



Wisconsin  
Department of Health Services

# Outline

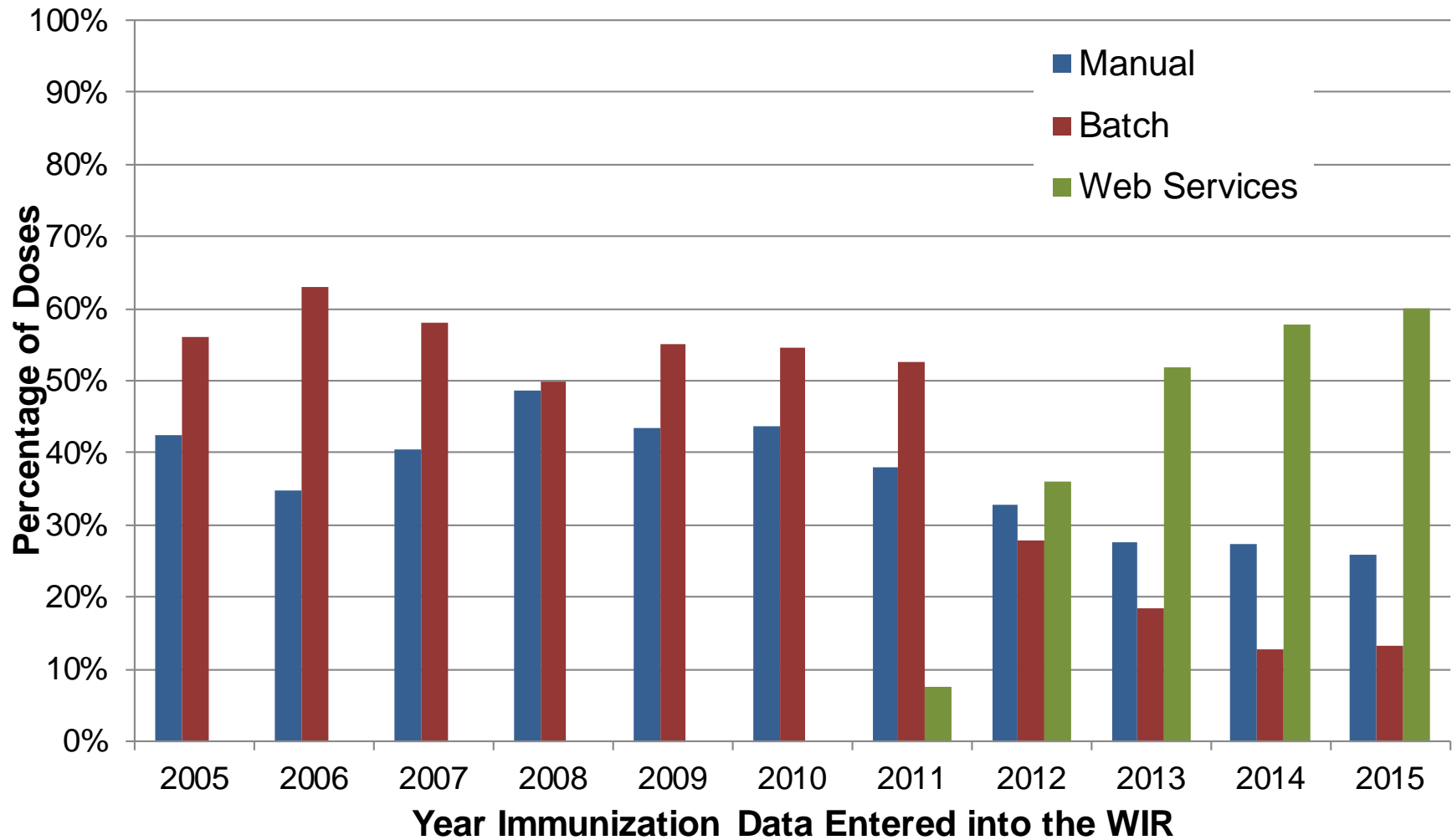
- Background
- Report card development
- Examples of how report cards are used
- Limitations and next steps



# Background: Wisconsin Immunization Registry (WIR)

- Since 2000, collects immunization information for Wisconsin residents of all ages.
- Gathers information from vital records, public and private health care organizations, pharmacies, HMOs, Medicaid, WIC.
- As of February 2016, WIR contained 8,659,811 clients with 86,411,227 immunizations and had 5,508 active providers.

# Background: WIR Data Submission Methods



# Background: WIR Report Cards

- The transition from manual entry to data exchange created new challenges to maintaining WIR data quality.
  - Providers only seeing what they enter into their EHR.
  - Difficulty identifying large issues when only looking at single HL7 messages.
  - WIR returns error or warning messages, but they are not always getting to providers.

# Background: WIR Report Cards

- These new challenges can affect:
  - De-duplication of clients.
  - De-duplication of immunizations.
  - Accurate forecasting of vaccines.
  - Recognition of vaccines being given inappropriately.

# Report Card Development

# Timeline

- The WIR team needed a new way to identify data quality errors and inform providers of their data quality.
  - Summer 2014: report card project started
  - December 2014: report cards in full production
  - Spring 2015: providers self-selected to receive monthly report cards at WIR User Group meetings
  - October 2015: WIR Data Exchange staff began using report cards with all newly onboarded providers



# Current Process

A WIR developer generates monthly report cards based on a set of queries

Report cards are available electronically for the WIR data quality specialist

Providers are emailed their monthly report cards along with individualized comments



# Recommendations

Goal completeness percentages are set based on immunization program priorities and are universal.

## Recommendations

Based on the information in this report, WIR recommends this organization focus on improving the following fields:

Report Card	Field	Percentage	Goal
Data Completeness (Immunizations)	Vaccine Administering Provider Title/Suffix	0.00%	80.00%
Data Completeness (Patients)	Mother's First Name	47.62%	50.00%
Data Completeness (Patients)	Mother's Maiden Last Name	49.05%	75.00%
Data Completeness (Patients)	SSN	66.19%	90.00%

# Dose Timeliness

## Dose Timeliness

*Indicates the delay between the date an immunization was given and when it was added to WIR.*

Immunizations given during assessment period: **757**

Timeframe Received	Count	Percentage
Within 1 day	750	99.08%
2-7 days	3	0.40%
8-14 days	0	0.00%
15-30 days	3	0.40%
31+ days	1	0.13%

# Data Completeness (Immunizations)

## Data Completeness (Immunizations)

*Indicates the data included with each immunization record added to WIR.*

Immunizations given during assessment period: **757**

Data Field	Count	Percentage
Vaccine Product Type Administered	757	100.00%
Vaccine Administration Date	757	100.00%
Vaccine Manufacturer Name	753	99.47%
Vaccine Trade Name	755	99.74%
Vaccine Lot Number	755	99.74%
Vaccine Expiration Date *	579	76.49%
Vaccine Dosage	754	99.60%
Vaccine Site of Administration	712	94.06%
Vaccine Route of Administration	736	97.23%
Vaccine Ordering Provider Name	751	99.21%
Vaccine Administering Provider Name	752	99.34%
Vaccine Administering Provider Title/Suffix	0	0.00%
Dose Level Eligibility	744	98.28%

\* Only immunizations entered using the WIR Inventory Module retain this data.

# Data Completeness (Patients)

## Data Completeness (Patients) ▼

*Indicates the data currently available on each patient updated during the assessment period.*

Clients updated during assessment period: **420**

Data Field	Count	Percentage
Patient Name: Last	420	100.00%
Patient Name: First	420	100.00%
Patient Name: Middle	408	97.14%
Mother's Maiden Last Name	206	49.05%
Mother's First Name	200	47.62%
SSN	278	66.19%
Gender	420	100.00%
Birth Date	420	100.00%
County	418	99.52%
Country of Birth	420	100.00%
Chart Number	413	98.33%
Ethnicity	403	95.95%
Race	380	90.48%
Provider-PCP	24	5.71%
Responsible Person: Primary Designated *	6	1.43%
Responsible Person: Last Name	414	98.57%
Responsible Person: First Name	414	98.57%
Responsible Person: Middle Name	393	93.57%
Responsible Person: Phone	400	95.24%
Responsible Person: E-mail	52	12.38%
Responsible Person: Address/P.O. Box	415	98.81%
Responsible Person: City	415	98.81%

\* WIR uses the address of the primary responsible person for each patient as the contact address for that patient. If no primary responsible person is designated, WIR selects one using the best information available

# Discontinued Vaccines

## Discontinued Vaccines

*Indicates counts of immunizations administered during the reporting period that have been discontinued.*

Vaccine	Count
Pnu-Imune 23	1

## Other Examples:

- Prevnar 7
- Acel-Imune
- H1N1
- RotaShield
- Orimune
- Certiva
- Fluogen
- Flu Shield
- ProHIBIT
- Tetramune

# Invalid Doses

## Invalid Doses



*Indicates doses administered outside of schedule recommendations during the assessment period. Unless otherwise determined, clients follow the ACIP schedule. A single dose that is invalid for multiple reasons will only count once under the 'total' column.*

Vaccine Group	Age	Interval	Group	Size	Other	Total	Count	Percentage
<a href="#">DTP/aP</a>	4	6	0	0	0	6	77	7.79%
<a href="#">Influenza</a>	0	1	0	0	0	1	221	0.45%
<a href="#">HepA</a>	0	8	0	0	0	8	49	16.33%
<a href="#">HepB</a>	21	4	0	0	0	22	59	37.29%
<a href="#">Meningo</a>	0	2	0	0	0	2	15	13.33%
<a href="#">MMR</a>	0	4	0	0	0	4	23	17.39%
<a href="#">Pneumococcal</a>	0	3	0	0	0	3	63	4.76%
<a href="#">Polio</a>	1	3	0	0	0	3	62	4.84%
<a href="#">Rotavirus</a>	0	1	0	0	0	1	32	3.13%
<a href="#">Varicella</a>	0	4	0	0	0	4	23	17.39%
<a href="#">Pneumo-Poly</a>	3	17	1	0	0	18	111	16.22%
<a href="#">HPV</a>	0	4	0	0	0	4	42	9.52%

Schedule: Doses at 0, 1-2, and 6 months after initiation.

Age Range: 9-30 years

Minimum Intervals: Dose 1 to 2=28 days, Dose 2 to 3=84 days, Dose 1 to 3 = 16 weeks

Notes: HPV Bivalent (Cervarix) is invalid for males



# Unexpected Doses

## Unexpected Doses

Indicates specific immunization cases which may be valid, but should not occur frequently.

Case	Count	Total	Percentage
DTaP Over 7 Years	4	121	3.31%
Pediarix as 4th/5th Dose DTaP	1	31	3.23%

## Other Examples:

- Over age MMRV
- Under age Kinrix
- Under age Menactra
- Under age Menveo

# Vaccines for Children (VFC) Eligibility

## VFC



*Indicates counts of patients eligible for VFC (Vaccines for Children) and other programs. Individual patients may have more than one eligibility.*

Patients aged 18 years or younger during assessment period: **218**

Eligibility	Count	Percentage
Not Determined/Unknown	12	5.50%
Insured	76	34.86%
No Insurance	9	4.13%
Native American/Alaskan Native	0	0.00%
Badger Care	0	0.00%
Medicare	0	0.00%
Medical Assistance	123	56.42%
Insurance, No vaccine	3	1.38%

# Examples of Use

# Identification of Administration Errors

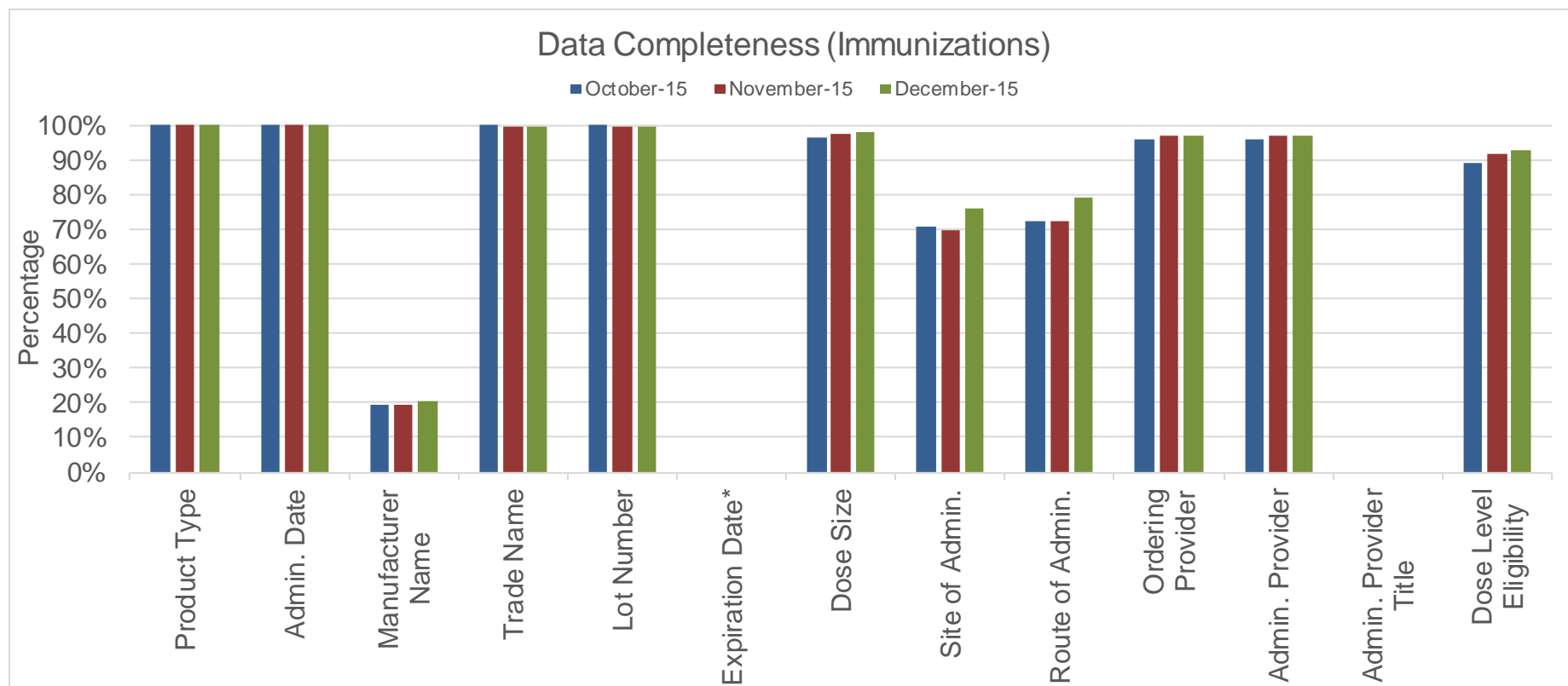
- An academic teaching clinic used WIR report cards to validate their self-reported internal tracking system for administration errors.
- Reviewed results from 9/2014 to 3/2015
  - WIR report cards identified 2.11 errors per 1000 vaccines administered.
  - Clinic internal tracking system identified 0.74 errors per 1000 vaccines administered.
- Identification of errors that were being missed led to:
  - Re-education of staff.
  - Breaking out vaccine order lists within their EHR by age
  - Labeling of vaccine products with age limits.

# Data Exchange Onboarding

- Report cards sent to providers for three months after their go-live.
- Use of the report cards at this point identifies:
  - Transmission, mapping and/or coding issues that were overlooked during onboarding.
  - Use of vaccine that is unexpected or inappropriate.
- Successful for improving data quality when there is provider office staff and data exchange vendor buy-in.

# Data Exchange Onboarding

Three-month trend data to identify improvements or ongoing issues:



# Other Uses

- Bring to staff meetings as a teaching tool for employees.
- Help larger organizations identify specific sites that need attention.
- Focus efforts on specific data measures, such as race/ethnicity completion or timeliness.
- Ensure that VFC status is being correctly documented for children <19 years of age.
- Help to assess performance of new staff.

# Limitations and Next Steps



# Limitations

- The current process for getting report cards to providers is time-consuming.
- The feasibility of rolling the report cards out to all providers remains uncertain due to a few issues:
  - Report cards need to be run during off-hours to prevent slowing down of the system.
  - Report cards take up a significant amount of storage space.
- Report cards are designed to display a month's worth of provider data; in many cases daily or hourly feedback may be more useful.

# Next Steps

- A data exchange “watch tool” was developed and put into WIR production in Winter 2015.
  - Staff can see the number and types of data exchange messages rejected, the number of queries attempted and failed, and invalid values.
  - These watches are not universal and can be set up as needed.
- A determination of how and when WIR report cards will be used needs to be made.

# Conclusions

- Changes in the way data are entered into the WIR creates new challenges related to data timeliness, completeness and accuracy.
- WIR report cards help hold providers accountable for their data quality and timeliness.
- The identification and resolution of errors helps ensure that WIR's patient vaccination histories and vaccine recommendations are accurate.

# Conclusions

- Combination use of the report cards and the “watch tool” will help data exchange providers identify errors quickly and monitor their success at fixing those errors.



# Thank You!!

Questions?

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