

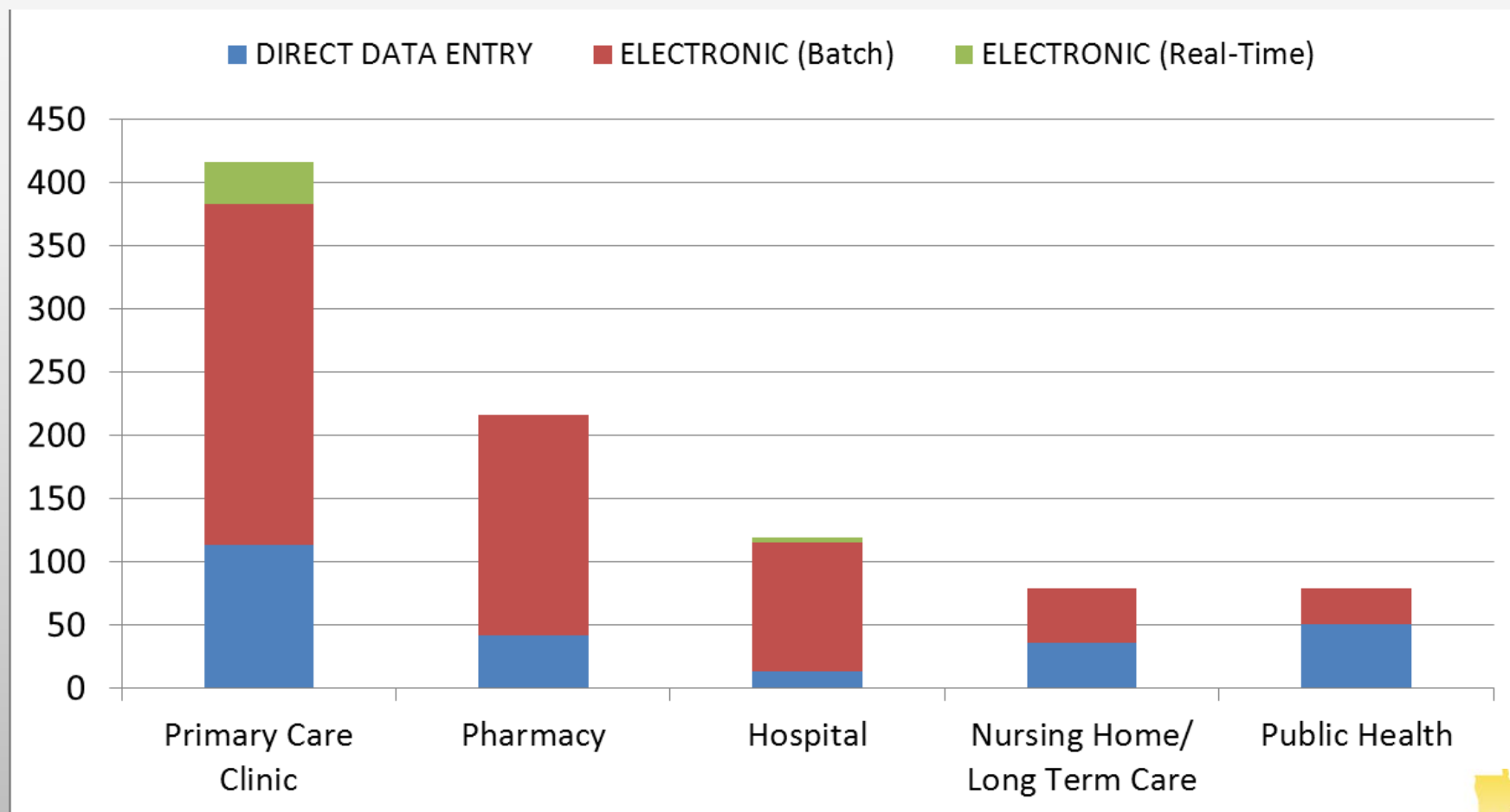


# Challenges of Maintaining High-Quality Data in an IIS

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# How Do Organizations Submit their Data?

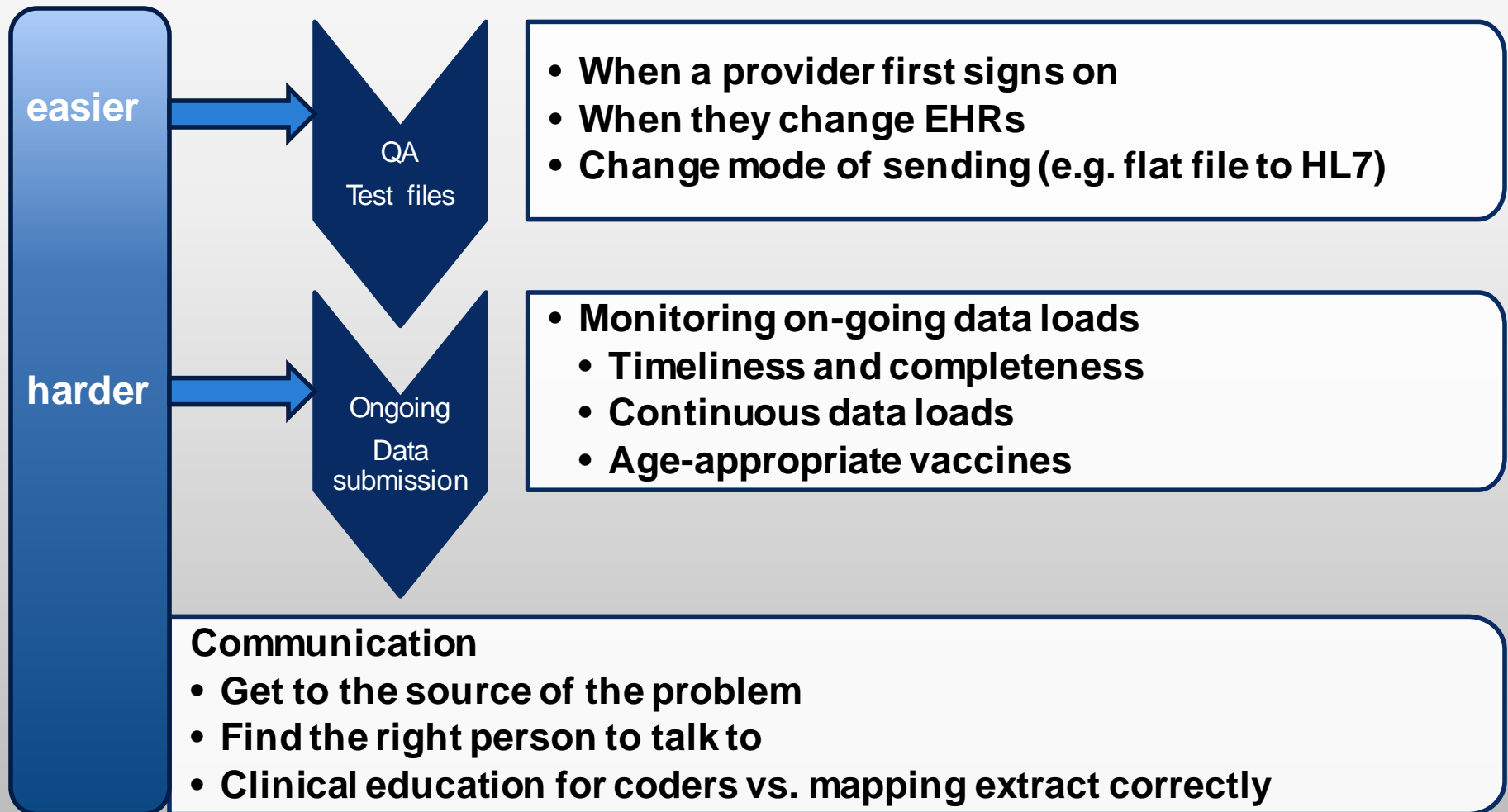


# Incoming MIIC Immunizations by Quarter of Entry and Submission Source

| Year | Quarter of entry | SOURCE       |           |           | Total     |
|------|------------------|--------------|-----------|-----------|-----------|
|      |                  | Direct Entry | Batch     | Real-time |           |
| 2011 | 3                | 177,982      | 1,178,292 | 209,433   | 1,565,707 |
|      | 4                | 196,767      | 1,944,064 | 220,887   | 2,361,718 |
| 2012 | 1                | 108,143      | 1,013,704 | 114,587   | 1,236,434 |
|      | 2                | 109,972      | 868,279   | 136,348   | 1,114,599 |
|      | Total            | 592,864      | 5,004,339 | 681,255   | 6,278,458 |

# Communication of Data Issues

--from Initial Testing through Routine Submissions



# Types of Reports At QA stage

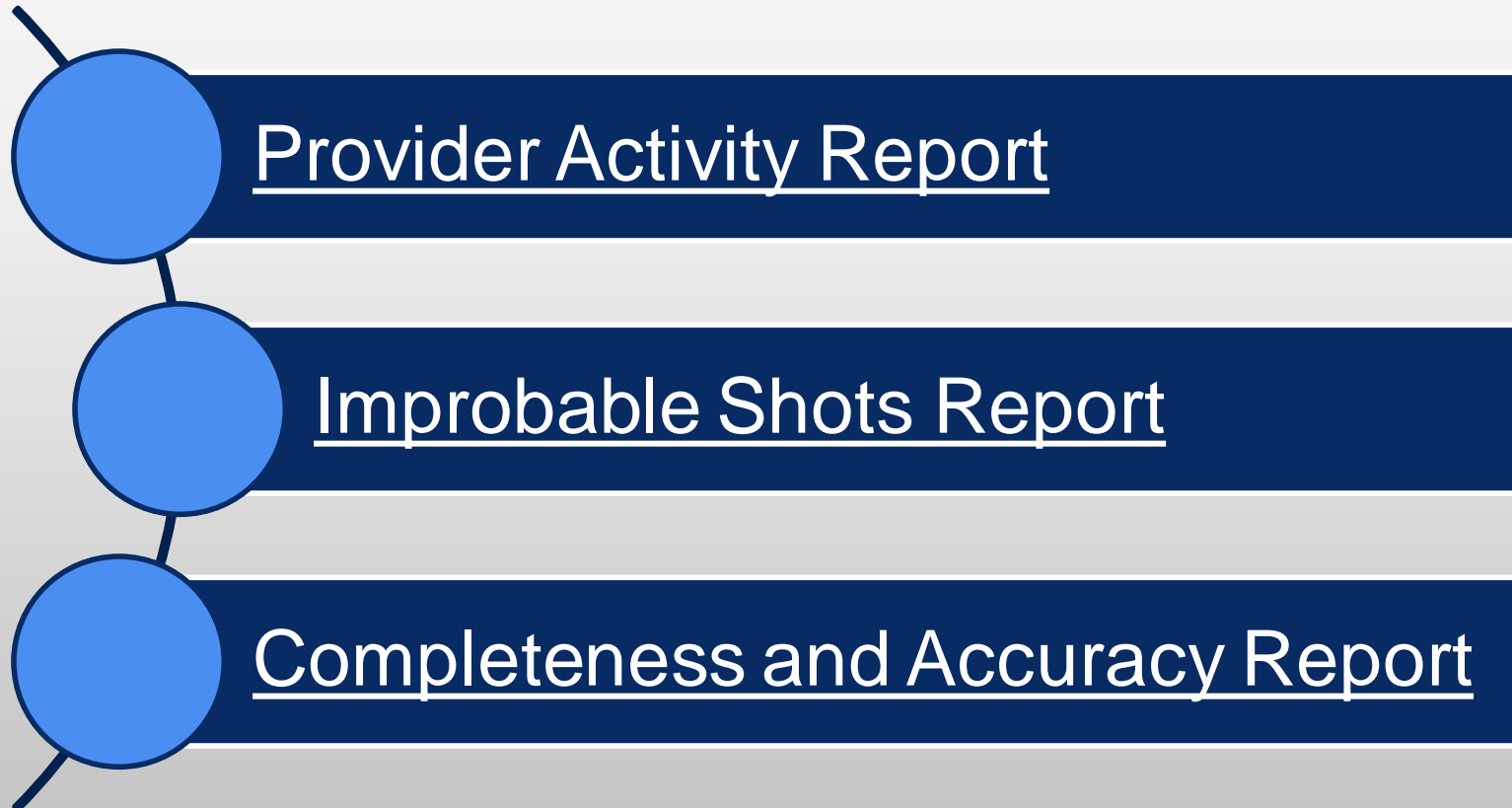
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| Format   | Valid immunizations   | Expected vaccine types   |
|--|---|--|
| <ul style="list-style-type: none"> <li>• Flat file</li> <li>• HL7</li> </ul> | <ul style="list-style-type: none"> <li>• Age-appropriate</li> <li>• Appropriate number of vaccinations</li> </ul> | <ul style="list-style-type: none"> <li>• Depends on type of practice                             <ul style="list-style-type: none"> <li>• Peds</li> <li>• Adult</li> </ul> </li> </ul> |

- More than 3 shots of Polio given before 24 months
- More than 20 shots given before 24 months
- More than 5 shots of the same vaccine given before 6 years
- MMR given before 12 months
- Pneumo-PCV7 given before 6 weeks
- Varicella given before 12 months
- More than 4 doses of DTP/aP given before 12 months
- More than 3 doses of DTP/aP before 6 months
- Any shot other than HepB given before 1 month
- More than 2 doses of Polio given before 4 months
- More than 3 doses of Pneumo-PCV7 given before 6 months
- More than 3 doses of Hib given before 6 months
- More than a total of 14 shots given before 6 months
- Immunizations Given Before BirthDate
- A combination Hib or Hib given to an individual  $\geq$  to age 5 (-4 days)
- DTP, DTaP or DT given to an individual  $\geq$  to age 7(-4 days)
- Pneumo-PPV23 given to a child under age 2(-4 days)
- A Td given to a child under age 7(-4 days) (except for Tdap)  
(Td may be given for doses 4 or 5 – consider individually)
- A Pneumo-PCV7 given to someone greater than or equal to age 5(-4 days)
- A measles, a mumps, a rubella, or any combination of these vaccines record showing an individual born before 1957
- A third dose of HepB given before 6 months of age
- A Hib/HepB combo given before 6 weeks of age

# Ongoing Monitoring of Submitted Data

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# Issues Leading to Data Quality Problems

## Completeness

- Non-participating providers
- Gaps in data sent from providers
- Not sending historical shots or past administered shots
- Not sending vaccine lot number and manufacturer
- Incomplete or invalid addresses, phone numbers

## Accuracy

- Miscoding of vaccines in EHR
- Mis-mapping of vaccines from EHR to extracted file
- Sending ordered versus administered shots (or both!)

## Maintenance of Provider/ Population Cohorts

- Moved or gone elsewhere – MIIC not updated
- “Not my patient” anymore – MIIC not updated



# The Role of Assuring Quality MIIC Data

## Immunization Providers and Public Health

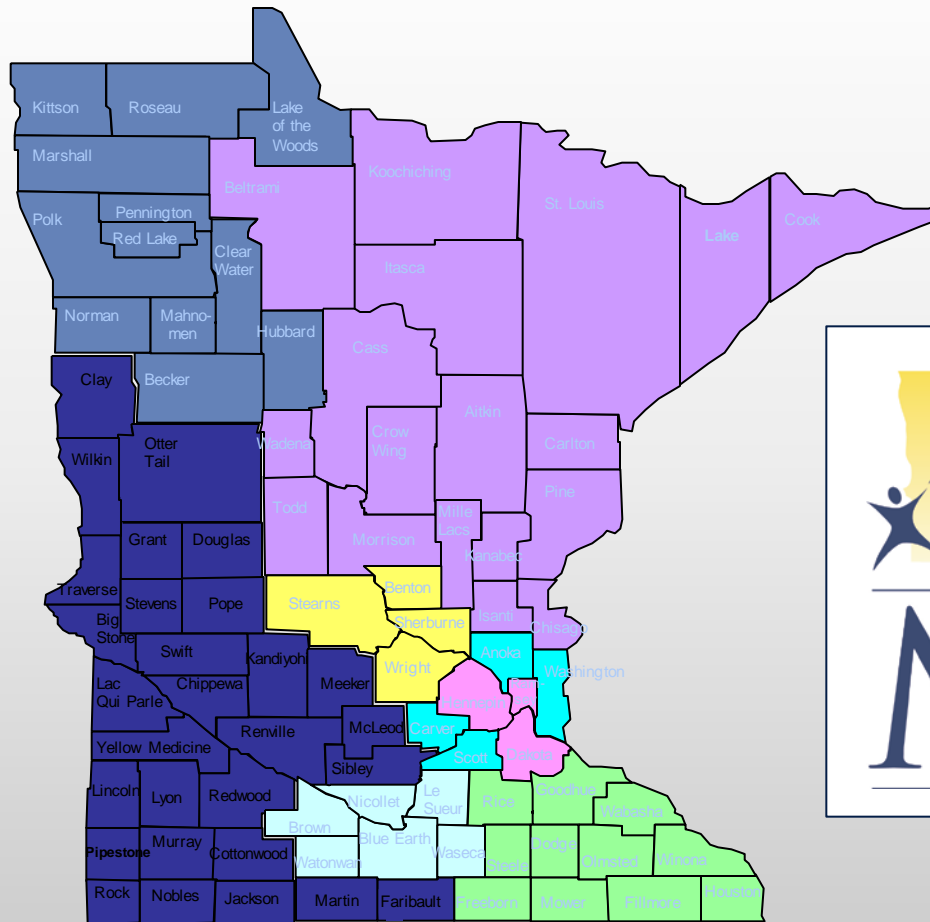
- Provide complete, accurate, and timely data. All vaccines on all patients!
- Use MIIC for advanced reporting (e.g., Assessment, Improbable Shots)
- Use MIIC for outreach to under-immunized
- Follow-up on identified data quality issues

## MIIC/Administrative

- Every new provider file must pass a QA process
- Monthly and quarterly monitoring reports
- Constant monitoring and follow-up for duplicates, systematic data input errors
- Rejection of unnamed records
- Require reporting by clinic site
- Build advanced reporting and outreach features into MIIC


## MIIC Regional Coordinator

- Recruit non-participating providers
- Train and educate providers on submitting data and using advanced reports
- Facilitate and/or conduct outreach to address under-immunized
- Constant monitoring and follow-up based on reports



 **Central Minnesota Immunization Connection (CMIC)**

 **Communities Caring for Children (CCC)**

 **Community Health Information Collaborative (CHIC)**

 **ImmuLink/Metro Counties**

 **Immtrack**

 **Southeast Minnesota Immunization Connection (SEMIC)**

 **Southwest Minnesota Immunization Information Connection (SW-MIIC)**

# Data Quality Strategies

## Issues

- Duplicate shots
- Not enough data to identify unique people
- Not enough resources to enter historical shots
- Providers do not commonly send in forwarding addresses

## Current Efforts

- Manual review of each file for format and content
- Upload into MIIC test
- Current QA process
- Ongoing monthly reports to Regional Coordinators
- Students doing data entry

## Future Plans

- Widen duplicate shot window
- Easier reports for MDH MIIC staff to run during test/QA process
- Monitoring reports to be run ongoing
- Use address checking resources

# Engaging Providers

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- **Apathy from providers**
  - Not “their” problem, it must be MIIC!
  - Use MIIC for look-up only
  - Not interested in advanced MIIC reports
- **How to engage them?**
- **Creating more efficient and valuable reports in MIIC**
  - Client Follow Up
  - Childhood Assessment Reports
  - Adolescent Assessment Reports

# Ideas to engage providers

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- **Data Quality Dashboard**
  - Run quarterly and delivered directly to providers, display :
    - 4313314 rates (or other measure)
    - Number of possible duplicate clients/shots
    - Timeliness/completeness statistics
- **Reports for providers to monitor their own data quality**
  - Types of vaccines by age groups
  - Timeliness
  - Rates



## For More Information

- [www.health.state.mn.us/immunize](http://www.health.state.mn.us/immunize)
- 651-201-5414
- Toll free 1-877-676-5414 – greater MN
- E-mail: [karen.white@state.mn.us](mailto:karen.white@state.mn.us)