IIS Measurement and Improvement: Connecting Immunization Information Systems (IIS) with EHRs to Reduce Burden and Improve Care

HIMSS Spring I&HIE Community Roundtable
April 10, 2019
What AIRA does

**Purpose**
Promote the development, implementation and interoperability of Immunization Information Systems

**Collaborate**
Provide a way to work collaboratively to develop standards, best practices, strategies and provide education about IIS

**Measurement & Improvement**
Identify the key aspects of an IIS that can be evaluated and measured. Provide technical assistance to IIS programs to foster improvement.

**Support**
Support IIS and immunization programs through education, targeted assistance, and advocacy.
What are Immunization Information Systems (IIS)?

Hint – they are immunization registries, but so much more
are confidential, population-based, computerized databases that record all immunization doses administered by participating providers to persons residing within a given geopolitical area.

Confidential
Population-based
Identify pockets of need
Exchange data with multiple providers
Assist schools & child care providers
Help improve vaccination rates & Reduce vaccine-preventable disease
Where are IIS located?

All but one state operate an IIS

IIS are also in:

- New York City
- Philadelphia
- San Antonio
- Washington D.C.
- San Diego
- Imperial County
- San Joaquin County (RIDE)
- American Samoa
- Guam
- Marshall Islands
- Micronesia
- North Mariana Islands
- Palau
- Puerto Rico
- U.S. Virgin Islands
IIS...Capture the vaccination status of the population

Children <6
Percentage of children <6 participating in an IIS in the United States - 2017

Adolescents 11-17
Percentage of adolescents 11-17 participating in an IIS in the United States - 2017

Adults
Percentage of adults greater than or equal to 19 years of age participating in an IIS in the United States - 2017

Maturity

• Each system operates independently
• Newest IIS is planning to launch in late 2019
• Oldest have been in existence for 30+ years
Why isn’t there a national registry?

- 1993: Congress rejected national IIS provisions in the Comprehensive Child Health Immunization Act
  - As introduced, it would have created a national immunization registry
  - Derailed amid a firestorm of political protest
- 10th Amendment – states dictate what their system can and cannot do
Measurement and Improvement
Value of IIS Measurement and Improvement

• Increases IIS function and helps streamline data in/data out operations
• Providers/end users can trust the data they use for clinical decision support
• Public and private health partners (Medicaid, Accountable Care Organizations, EHR hubs, etc.) can be confident in data used population-based assessment
• M&I helps the IIS community prioritize and accelerate essential improvements together
Content Area

Transport

Submission / Acknowledgement

Query / Response

CDS

Data Quality
Measurement and Improvement: Validation

**Validation is** a public-facing summary stage to acknowledge IIS that are progressing toward or achieving alignment with community-selected measures.
Great Participation Nationwide
Aggregate Analysis Reporting Tool (AART)

- AIRA Developed Measurement Tool
- Testing is performed on a regular basis
- Each IIS has a Dashboard of their individual results
- Quarterly National Aggregate Reports are developed and published
Nationwide Validation Reports – Now Available

• Gradations of “validated with minor differences” and “major differences” to better demonstrate incremental progress.
• Quarterly identified maps with gradations and footnotes that clarify policy differences.
Assessment Results: Transport
Assessment Results: Submission and Acknowledgement
“The Minnesota IIS saves us time. With the click of a button, we can compare the EHR and IIS records. We rely on the Minnesota IIS to make sure that our immunizations are given correctly.”
Drilling Down on EHR-IIS Query – Why Is It Important?

- EHR-IIS query is available in the majority of IIS jurisdictions nationwide
- Results demonstrate progress toward standardization and adoption of query
- Coupled with EHR adoption of certified technology, this will speed up onboarding and interoperability substantially

“Our best defense against missed immunization opportunities is the ability to conduct an Immunization Query. Our bi-directional interface with our state immunization database has put accurate immunization history and the current CDC recommendations based on that history at our clinicians fingertips.”
A 2016 study in the journal Pediatrics demonstrated an increase in up-to-date status and a decrease in missed opportunities following implementation of query.
Assessment Results: Query and Response

![Graph showing assessment results for different categories over time.

- Measured
- Query Support Pass Average
- MU3 Query Support Pass Average
- RSP Conformance Pass Average
- Core Data Elements Pass Average
- Timeliness Pass Average]
Clinical Decision Support
Before CDSi

ACIP Recommendations and Clarifications

System A Recommendation
System B Recommendation
System C Recommendation

Individual Interpretation And Implementation

https://www.cdc.gov/vaccines/programs/iis/cdsi.html
With CDSi

ACIP Recommendations and Clarifications

CDSi Resources

Individual Implementation

Consistent System Recommendations

Workgroup Interpretation and Documentation

https://www.cdc.gov/vaccines/programs/iis/cdsi.html
## CDS Measures

<table>
<thead>
<tr>
<th>CDS Concept</th>
<th>Supports</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Evaluation Status</strong></td>
<td></td>
<td>Pediatric Adolescent Adult</td>
</tr>
<tr>
<td><em>Did the dose count?</em></td>
<td>![Check]</td>
<td></td>
</tr>
<tr>
<td><strong>Earliest Date</strong></td>
<td></td>
<td>Pediatric Adolescent Adult</td>
</tr>
<tr>
<td><em>When could the next dose be given?</em></td>
<td>![Check]</td>
<td></td>
</tr>
<tr>
<td><strong>Recommended Date</strong></td>
<td></td>
<td>Pediatric Adolescent Adult</td>
</tr>
<tr>
<td><em>When should the next dose be given?</em></td>
<td>![Check]</td>
<td></td>
</tr>
</tbody>
</table>
HIMSS/AIRA Collaborative

AIRA Measurement and Improvement

HIMSS Immunization Integration Program

HIMSS/AIRA Collaborative

For more information: ImmunizationCollaborative@himss.org
Goals of the HIMSS/AIRA Collaborative

• Improve immunization management, workflow, standards, usability and data sharing practices
• Harmonize communications to achieve structured data sharing to support clinical care and public health
• Enable collaboration between organizations that can implement necessary changes (in EHRs or IIS, and/or in the standards that support them)
• Build on the work of the HIMSS Immunization Integration Program

For more information:
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Standardization activities have directly improved interoperability with EHRs and IIS, as well as improved the quality of data within IIS.

This has strengthened IIS as important analytic tools that support a wealth of population health needs.

Providers can access these data seamlessly through EHR query at the point of care, supporting clinical decisions, ensuring appropriate immunization, and lowering burden.
Acknowledgements

• Thank you to:
  • The AIRA Measurement for Assessment and Certification Advisory Workgroup (MACAW) Members for their work in recommending concepts and measures
  • The AIRA Board of Directors for approval of measures and oversight of the process
  • All IIS and EHRs for doing the hard work to implement and improve interoperability and functionality
Thank You!

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