



AIRA

AMERICAN
IMMUNIZATION
REGISTRY
ASSOCIATION

Immunization Information Systems

KEEPING PACE WITH EVOLVING PUBLIC HEALTH INITIATIVES



Benefits of MIROW to IIS

- Promotes operational consistency within IIS
- Fosters communication and collaboration within the IIS community
- Increases credibility of IIS

Kansas IIS Recognizes New, Valuable Ways to Improve Data Quality

“We were trying to get a grasp on data quality in our IIS when the MIROW data quality recommendations were released. It let us pull out and apply key elements immediately to our IIS. It also gave us new, valuable perspectives on some elements that we may not have considered, but that would clearly improve our IIS practices.”

NICHOLE LAMBRECHT, KSWebIZ
Project Manager, Kansas Department
of Health & Environment

IMMUNIZATION INFORMATION SYSTEMS (IIS) serve as a model for how information systems can provide tremendous benefits to public health. For years, IIS have collected, analyzed and reported on immunization-related data across the United States. That information has been used to track immunization coverage, send immunization reminders to patients, track vaccine availability, ensure kids receive the vaccinations they need to attend school and much more. Recent federal initiatives such as health information exchanges (HIEs), the more expansive concept of a Nationwide Health Information Network (NHIN), and incentives for provider adoption of electronic health records have prompted the IIS community to examine how IIS could best support such initiatives while continuing to support immunization programs and public health overall.

In response to these needs, the American Immunization Registry Association (AIRA) partnered with the Centers for Disease Control and Prevention/National Center for Immunization and Respiratory Diseases (CDC/NCIRD) in 2005 to begin developing consensus-based best practice recommendations for improving various aspects of IIS operations. This initiative brought together subject matter experts and practitioners from the IIS community to form the Modeling of Immunization Registry Operations Work Group (MIROW). The goal of this group is to identify and prioritize functional areas of IIS that can benefit from a collective approach and to develop best practice recommendations for these areas using business modeling and facilitation techniques. The resulting recommendations are technology-independent; that is, they can be applied regardless of the IIS technology platform implemented.

Since 2005, the group has developed recommendations for IIS around assuring incoming data quality, deduplicating vaccination-level data, assigning patient active/inactive status, conducting reminder/recall activities and in a pilot project, collaborating with the Vaccine Adverse Event Reporting System (VAERS). Future topics for the group will center on key IIS operational issues as determined by the MIROW Steering Committee and with IIS input.

The MIROW Approach

MIROW employs a proven methodology to develop best practice recommendations that relies on guidance from the Steering Committee, facilitated collaboration of subject matter experts (SMEs), and application of business analysis and modeling techniques. The following steps outline the general process for developing each set of recommendations:

- STEP 1** The MIROW Steering Committee selects a topic to address, defines the scope of the topic, and narrows the focus to those sub-topics that will be addressed.
- STEP 2** The Steering Committee selects subject matter experts (SMEs) to serve as a workgroup to develop best practice recommendations for the selected topic.
- STEP 3** A small workgroup of business analysts and SMEs gathers and analyzes current practices for the topic, developing materials such as a domain model, glossary of terms and definitions, and identifying modeling instruments, templates and other tools that will facilitate development of best practice recommendations.
- STEP 4** A multidisciplinary team of SMEs, business analysts, facilitators, observers, administrative staff, and sponsors participates in facilitated face-to-face discussions in which they analyze existing practices, brainstorm how to improve these practices, reach consensus on recommendations to support these improved practices and capture those recommendations in a document.

STEP 5 The workgroup finalizes the recommendations developed during the face-to-face sessions via conference calls and over email. Editors and external reviewers help create the final version of the best practice recommendations document.

STEP 6 MIROW surveys IIS that have implemented the best practices to evaluate the operational improvements realized from the implementation. Analysis of the survey feedback informs and guides subsequent updates to the recommendations. The MIROW Steering Committee also promotes adherence to the recommendations as a standard of excellence.

Contents of Best Practices Recommendations

Best practice recommendations include the following information:

- An overview of the topic being reviewed
- Principles, business rules, and general recommendations associated with the topic
- Various models, such as business process models, state transition models, and others
- Agreed upon terms and definitions
- Challenges to and solutions for implementing the best practice recommendations
- Select references for peer-reviewed literature
- Examples of implementation

Available Best Practice Recommendations

MIROW has developed five best practice guidelines of these recommendations. Each guideline may be downloaded in complete, or in most cases, summarized “mini guide” form from the AIRA web site (www.immregistries.org/pubs/mirow.phtml). The following table summarizes the content of each currently published guideline. This is an ongoing initiative with additional topics added regularly.

TOPIC	SUMMARY	EXAMPLE OF KEY RECOMMENDATION
Management of Moved or Gone Elsewhere (MOGE) Status and Other Patient Status Designations in IIS	Recommended patient active/inactive status designations and rules for assigning status, along with recommended actions for recall/reminder notifications and coverage assessment based on status.	Tracking of patient status at the provider and geographic jurisdiction levels.
Vaccination Level Deduplication in Immunization Information Systems	Recommended rules and procedures that may be used as the basis for creating algorithms that identify and manage potentially duplicate records for vaccination events.	Combining information from duplicate records into a new, consolidated record
Data Quality Assurance in IIS: Incoming Data	Recommended guidelines for validating data before importing it into the IIS database to ensure data is of high quality.	Use of provider profile to monitor quality of incoming data
Reminder/Recall in Immunization Information Systems	Major principles and rules for the reminder/recall process, recommended IIS functionality to support reminder/recall, how to measure reminder/recall effectiveness, and challenges initiating reminder/recall.	Combining reminder/recall methods to ensure notification is received
IIS Collaboration with Vaccine for Children Program and Immunization Programs of Grantees (in-progress)	Recommended rules around determining, assigning, and tracking VFC eligibility for a patient.	A decision table that lists all possible scenarios for assigning and documenting VFC patient eligibility status

Washington State’s IIS Improves Operations and Coverage Measures

“We’re using the patient status document to help us appropriately inactivate the patient record. These efforts will make our denominator, and therefore the calculation of immunization coverage rates in the IIS, more accurate. We’ve also used the vaccination deduplication and data quality guidelines to improve our operations. This kind of information does not exist anywhere else, and has been invaluable to the success of our IIS.”

SHERRY RIDDICK, Immunization Registry Operations Manager
CHILD Profile, Washington State Department of Health

For additional information about MIROW, please contact:

Warren Williams

Centers for Disease Control and Prevention
(404) 639-8867
wxw4@cdc.gov

Elaine Lowery

elaine.lowery@comcast.net

AIRA

c/o Hauck & Associates
1025 Thomas Jefferson St., NW
Suite 500 East
Washington, DC 20007

www.immregistries.org
info@immregistries.org



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What Do IIS Think of the Recommendations?

Data from the 2007 and 2008 IIS Annual Reports (IISAR) showed that 46 percent (2007) and 76 percent (2008) of IIS had used the MIROW best practices recommendations available at that time. For example, staff for KSWebIZ, the Kansas state IIS, referenced the data quality recommendations to build a report that helps providers improve the quality of data they submit to the IIS. The report shows the providers the timeliness, accuracy and completeness of the data they submit and doses they administer, so they can target areas for data quality improvement. Similarly, CHILD Profile, the IIS for the state of Washington used several different sets of MIROW recommendations to develop policies and procedures that improve IIS operations and to improve the accuracy of immunization coverage reports.

MIROW: Preparing IIS for Tomorrow's Interconnected Healthcare

The need for IIS to continue adoption of technology standards and improvement of data quality is ongoing. In 2009, the federal government developed legislation that provides incentives for some providers to adopt and use electronic health record (EHR) systems. To receive incentive payments from CMS, these providers will have to demonstrate "meaningful use" of the data in their EHR system by exchanging immunization data with public health. One option is to exchange data with an IIS. In addition, the development of HIEs across the US, along with the eHealth Initiative, which promotes use of interoperable technology to improve healthcare system quality, safety and efficiency, both underscore the need for public health information systems to continue improving data quality and interoperability. Clearly, the best practice recommendations developed by MIROW significantly contribute to preparing IIS today for this new interconnected environment that will be tomorrow's reality.