



# SNAPSHOTS

IMMUNIZATION REGISTRY NEWS *from the* AMERICAN IMMUNIZATION REGISTRY ASSOCIATION (AIRA)

## PRESIDENT'S REPORT

Dear Colleagues,

Spring is officially here and, with it, a fresh edition of *SnapShots* to keep you inspired. It has been a busy first quarter for 2026, and while the landscape of public health continues to shift, one thing remains constant: the steady commitment of the IIS community—showing up for one another and for the people we serve.

**One thing remains constant: the steady commitment of the IIS community—showing up for one another and for the people we serve.**

This issue is packed with examples of how IIS teams are improving service to their partners and customers. From Rhode Island's trailblazing work with FHIR implementation to the pilot of AIRA's Patient Matching model, we are seeing the future of interoperability and data quality unfold in real time.

This edition also features South Carolina's new consumer access portal, including secure access to validated school immunization certificates. What a win for equity and efficiency!

Please make sure to check out the Education Exchange section. I'm particularly excited about the CDS Microlearning course. With the current complexities surrounding immunization forecasting and the varying paths jurisdictions are taking to protect vaccine recommendations, staying grounded in the fundamentals of Clinical Decision Support is critical for IIS integrity.

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Welcome to *SnapShots*, the American Immunization Registry Association's newsletter about the progress, best practices, and accomplishments of immunization information systems (IIS) across the country. We invite you to share news about your IIS. Email us at [info@immregistries.org](mailto:info@immregistries.org) with information about a successful programmatic or technical innovation, major accomplishment, or milestone that your IIS has reached.

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Lastly, make sure you register for the AIRA 2026 National Meeting! We will be gathering in Pittsburgh, Pennsylvania, April 28–30. A Wikipedia browse informed me that Pittsburgh has more bridges than any other city in the world (*allegedly*), which feels like a perfect metaphor for the work of IIS connecting systems, providers, and data. Dr. Todd Wolynn, MD, MMM, FAAP, Executive Director of the Trusted Messenger Program (TMP) at The Public Good Projects, will kick off the meeting with insights on strengthening trust and advancing public health initiatives. Get ready for three days of collaboration, innovation, and at least one Primanti's sandwich.

I can't wait to see you all in the Steel City. Until then, take care of yourselves and be kind to each other.

Regards,

**Marie Hartel, MPH**

Program Director for the Tennessee Department of Health  
Vaccine-Preventable Disease and Immunization Program  
AIRA Board President

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# RHODE ISLAND: LEADING FHIR IMPLEMENTATION AND IIS MODERNIZATION FOR EMERGING STANDARDS

## Modernizing a trusted system

Rhode Island's immunization information system (IIS), Rhode Island Child and Adult Immunization Registry (RICAIR) or KIDSNET, has been operating since 1997.

In 2023, the state began implementing FHIR (Fast Healthcare Interoperability Resources) to modernize interoperability, improve data exchange, and prepare for future innovations. As part of this FHIR initiative, a community college was successfully onboarded in December of 2025, marking one of the first school-to-IIS FHIR implementations for an IIS in the United States.

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## Leveraging AIRA and community standards resources to guide FHIR adoption

Rhode Island's FHIR implementation was guided by key workgroups and resources designed to support emerging standards and IIS interoperability, which are all listed on AIRA's "[FHIR and Emerging Standards](#)" page:

- 1. Helios FHIR Accelerator for Public Health:** The "Make Data in Public Health Systems Accessible in Bulk" track helped to create a uniform process for querying IIS, leveraging Bulk FHIR. It organized IIS Bulk FHIR activity at several HL7 Connectathons and created a balloted white paper, "[Retrieval of Immunization Data via Bulk FHIR Edition 1- US Realm.](#)"
- 2. Emerging Standards Resource Repository:** This repository provides a central location for tracking work on FHIR and other emerging standards. Rhode Island used it to identify current and upcoming FHIR capabilities, helping prioritize resources and workflows.
- 3. FHIR and Emerging Standards Workgroups:** In addition to the Helios FHIR Accelerator, AIRA is closely involved with the Immunization Focus Group and the Public Health Work Group, where IIS teams and national partners discuss practical use cases, technical challenges, and interoperability strategies. Rhode Island leveraged insights from these discussions during testing and validation, ensuring alignment with evolving public health expectations and learning from other early adopters.



# RHODE ISLAND: LEADING FHIR IMPLEMENTATION AND IIS MODERNIZATION FOR EMERGING STANDARDS

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**4. FHIR Specification and Implementation Guides (IG):** These include the Base FHIR Specification, US Core FHIR IG, the Bulk Data Access IG, and the Immunization Decision Support (ImmDS) IG, as well as the white paper mentioned above. Rhode Island used these guides to shape system configuration and messaging workflows, ensuring that queries and responses adhered to recognized national standards while maintaining flexibility for future FHIR developments. The Immunization Integration Program (IIP) also helped convene partners and develop use cases for Bulk FHIR.

## Implementation approach

The state followed a structured, phased approach:

- **Requirements and resource selection:** Defined technical and operational needs and prioritized FHIR resources for implementation
- **System configuration and development:** Updated system endpoints, adapted workflows, and aligned messaging with FHIR standards
- **Testing and iterative validation:** Conducted multiple cycles of validation and error correction to ensure stability and conformance
- **Deployment and go-live:** Executed a planned phased rollout that maintained continuity of service while integrating new capabilities

## Evaluation framework

A mixed-methods evaluation guided the onboarding:

- **Quantitative metrics:** Validation success, error frequency, onboarding duration, query latency, and response size
- **Qualitative assessment:** Focused on FHIR complexity, system readiness, vendor experience, and process efficiency
- **Data sources:** Meeting notes, validation logs, and system documentation
- **Proposed visuals:** FHIR Readiness Scale (0–5) and a timeline showing stabilization across iterative cycles



# RHODE ISLAND: LEADING FHIR IMPLEMENTATION AND IIS MODERNIZATION FOR EMERGING STANDARDS

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## Results

Through careful planning, iterative validation, and robust technical oversight, Rhode Island demonstrated that state-level adoption of FHIR is achievable, even with partners new to immunization standards. This initiative provides a replicable model for other jurisdictions seeking to modernize their IIS, enhance interoperability, and improve data-driven public health decision making.

## Looking ahead

Rhode Island will be presenting the details of this work at the AIRA 2026 National Meeting later this month, where lessons learned and practical insights from implementation will be shared with other jurisdictions pursuing similar modernization paths. By documenting both challenges and successes, the state hopes to contribute to broader adoption of FHIR and strengthen interoperability across the immunization community.

## Contact us

For additional resources or to discuss FHIR Implementation further, please reach out to us at [ridoh.ricaironboarding@health.ri.gov](mailto:ridoh.ricaironboarding@health.ri.gov).

*– Submitted by **Danielle Woods, MBA**, Immunization Interface Manager, Rhode Island Department of Health; **Mike Berry**, Senior Project Manager, HLN Consulting, LLC*



## SOUTH CAROLINA MAKES IT EASIER FOR PARENTS TO GET IMMUNIZATION RECORDS FOR SCHOOLS

Like other states, South Carolina requires K-12 students to show proof of vaccination by obtaining a physician-signed certificate from a doctor.

Since the process of obtaining this official certificate presented challenges for some families, the South Carolina Department of Public Health created a configurable system that breaks down barriers for parents by offering a dynamic, flexible, user-friendly, and secure online tool to download a valid certificate from home.

Here's how they did it and why this first-ever option to download grade-level-specific immunization certificates for official use is so important for South Carolina students and families.

South Carolina has long maintained a portal called the State Immunization Online Network (SIMON), which has allowed individuals to access their personal vaccination records or those of their children. While this option helped South Carolinians better understand what vaccinations they received over their lifetime, the South Carolina Personal Immunization Record (DPH form 4025) that can be downloaded from this portal cannot be used as a valid certificate to meet school vaccination requirements. Until recently, the only option parents had to acquire an official certificate was to visit their child's health care provider to obtain a physician's signature on the South Carolina Certificate of Immunization (DPH form 4024), which is the only accepted form for attendance at school and child care.

This in-person requirement created barriers for some families, particularly ones who experience transportation and health care access challenges. To make it easier for parents, the South Carolina Department of Public Health wanted to create a solution that would allow individuals to download and print a valid Certificate of Immunization without having to visit a pediatrician or other health care provider.

This required technical expertise to ensure that the portal was user-friendly, protected personally identifiable information, and provided accurate information according to a child's immunization history and different grade-level requirements. The Department of Public Health partnered with InductiveHealth/Envision to expand the functionality of SIMON to do just that.

Over eight months, the teams worked together to establish a system that was secure and convenient. Importantly, the engineers building this new capability wanted to create a configurable system that reflects different requirements for students in kindergarten through 12th grade. Whereas a handful

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# SOUTH CAROLINA MAKES IT EASIER FOR PARENTS TO GET IMMUNIZATION RECORDS FOR SCHOOLS

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of states have previously created systems that allowed individuals to print vaccination records from a static page, South Carolina’s new system is the first of its kind because it dynamically reflects the grade-specific requirements each student must meet to be considered “up to date” on their immunizations. Therefore, one could not simply print out a valid certificate that was previously valid for one grade level and present it as valid for another, because later grades have additional requirements.

Not only does this help parents access the South Carolina Certificate of Immunization quickly, saving them a trip to a doctor’s office, but the flexibility and configurability is vital for the South Carolina Department of Health, which can easily update the back end of the system as vaccination guidelines change. By being in control of their own system, state public health officials can update SIMON without needing to ask InductiveHealth/Envision to add new vaccination codes.

Finally, families can be confident that their personal immunization information is secure and protected. To access one’s personal records, individuals must have specific data elements aligned with the SIMON system. By requiring multifactor authentication, only those entitled to view and print their personal information can access it.

Since this new capability was launched on August 1, 2025, the results have been astounding. SIMON has seen a 25% increase in traffic month over month, suggesting patients, parents, and legal guardians are taking advantage of this important option to search for school certificates, which are nested in the public portal. As of November 30, 2025, the portal received a combined total of 56,223 access attempts to search for vaccination records and school certificates. Of these:

**24,301**

were made by parents

**31,756**

by patients

**166**

by legal guardians

Moreover, the system is working as designed to keep personal information secure: unauthorized attempts to access immunization records have been blocked, and the South Carolina SIMON help desk has helped families having difficulty logging in successfully access the system.

Looking forward, this first-of-its-kind portal is a game changer for families. It also offers an important model for states across the country to emulate as they work to make it easier for parents and students to access valid and official vaccination records from the convenience of home.

– Submitted by **Jennifer Jaax**, Senior Operations Analyst, InductiveHealth; **Kaji Korotki, PhD, MS, MPS**, IIS Manager-Program Manager, South Carolina Department of Public Health



# FROM EXTRACT TO IMPACT: LESSONS LEARNED FROM THE PATIENT MATCHING PILOT

## Introduction

As immunization information systems (IIS) continue to grow, the challenge of maintaining data quality, specifically identifying and resolving duplicate patient records, has become increasingly critical.

Denominator inflation occurs when the number of patient records in a system exceeds the actual population, and it can be driven by several factors, including patient migration across jurisdictional borders, the lack of timely death notifications, and fragmented data reporting. This fragmentation underscores a fundamental role of an IIS: the consolidation of records from diverse sources like pharmacies, vital records, and primary care practices into a single, accurate patient immunization record. To help jurisdictions address the persistent need to identify and resolve duplicate records, AIRA has been piloting a new approach: the Patient Matching – Extract method.

## A new methodology for measurement

The Patient Matching – Extract method allows jurisdictions to assess the prevalence of duplicate records within their own systems using real-world data. Unlike established M&I testing that uses synthetic data and automated HL7 messaging, this method follows a four-step process:

- **Extract:** Jurisdictional staff pull a predefined cohort of patient data from their production database, including key fields such as full name, date of birth, address, and phone number.
- **Transform:** Jurisdictional staff run an AIRA-provided command-line interface (CLI) tool locally that utilizes **Mismo**, an open-source patient-matching tool, to identify potential matches and data quality indicators.
- **Load:** A de-identified aggregate detections file (ADF) is uploaded to AIRA for analysis.
- **Analyze:** AIRA produces individualized reports while jurisdictions review locally exported files to identify possible duplicates and “bad” data, like phone numbers and placeholder names.

**The Patient Matching – Extract method allows jurisdictions to assess the prevalence of duplicate records within their own systems using real-world data.**



# FROM EXTRACT TO IMPACT: LESSONS LEARNED FROM THE PATIENT MATCHING PILOT *Continued from page 8*

## Pilot results and successes

AIRA completed its second pilot iteration in June 2025, with eight participating jurisdictions. Participants extracted a total of 117,580 patient records, leading to 776 possible duplicates identified by the Mismo matching algorithm. Between the jurisdictions, there was a possible duplicate identification rate of 0.7%.

Participants were also asked to report on the number of possible duplicates they reviewed within their IIS and how many were subsequently merged. Participants reviewed a total of 263 possible duplicate pairs within their IIS, of which jurisdictional staff merged an average of 61%.

Beyond identifying duplicates, the pilot helped jurisdictions clean up other data quality issues. One participant updated its IIS's local "bad name" list based on the placeholder names identified, while others noted the potential for future data quality activities based on the bad phone number reports.

## Applying results to improve IIS

We anticipate that jurisdictions will use these results to identify gaps in their existing automated and ad hoc patient-matching processes. Through reviewing possible duplicates found via the Patient Matching – Extract tools, jurisdictions can pinpoint where their internal logic may be lacking.

When gaps are identified, jurisdictions can improve data quality and denominator inflation through the following actions:

- **Update automated algorithms:** Refine IIS matching logic to catch the specific types of duplicates identified using the Patient Matching – Extract tool.
- **Enhance ad hoc processes:** Improve manual or periodic data quality activities to better identify and resolve duplicates.
- **Targeted data cleansing:** Use the local exports to prioritize the resolution of duplicate pairs.

## Participant feedback

Overall satisfaction with the pilot was high, with participants noting the ease of use. The CLI run times were impressive, often processing hundreds of records per second and completing the run in under a minute for many cohorts.



## FROM EXTRACT TO IMPACT: LESSONS LEARNED FROM THE PATIENT MATCHING PILOT *Continued from page 9*

Participants were very satisfied or extremely satisfied with the process for extracting data and downloading and using the Patient Matching – Extract tool, as well as the usefulness of the possible duplicates and placeholder names local exports. Participants were all very likely to recommend Patient Matching – Export to other IIS. One participant noted, “The only tricky-ish part was getting the phone number formatting correct...otherwise, I’m excited about this work!”

### Looking forward

Building on previous pilots, AIRA is preparing for a third pilot phase scheduled for 2026. This upcoming iteration will focus on critical enhancements to the matching model to further reduce duplicate rates. A primary objective for the third pilot is expanding the matching algorithm to specifically identify instances where first, middle, or last names are transposed between a matching pair.

By refining the model to catch these common data entry errors, AIRA aims to provide jurisdictions with an expanded tool for duplicate identification. Jurisdictions interested in participating in this next phase of innovation are encouraged to contact AIRA at [AART@immregistries.org](mailto:AART@immregistries.org).

– Submitted by **Shelby Sandstrom**, Technical Analyst, American Immunization Registry Association (AIRA)



# EDUCATION EXCHANGE

Welcome to the Education Exchange, where we highlight valuable educational offerings and resources to support learning and professional development within our community.

1

## AIRA MICROLEARNING AND ONE-SHEET

### [From Complexity to Clarity: What Clinical Decision Support \(CDS\) Does for Vaccines](#)

This course explains what CDS means in the context of immunizations and how it assists with vaccine evaluation and forecasting. Learners will discover how CDS uses vaccine recommendations to support health information systems (such as IIS and EHRs) and improve the consistency and timeliness of immunization decisions. By the end, participants will understand the value of CDS for vaccines and how it helps recommend the right vaccines at the right time. An accompanying CDS [one-sheet](#) is available as a quick reference.

2

## ELEVATE YOUR IIS TEAM: ESSENTIAL WORKFORCE TOOLS FROM PHII

Building a robust immunization information system (IIS) team starts with strategic workforce development. The Public Health Informatics Institute (PHII) offers a dynamic repository of practical tools designed to boost your team's skills and performance:

### **Competency and staffing resources:**

- **IIS Core Competency Model:** Creates a framework for learning and professional development by ensuring a direct relationship between key performance behaviors and training.



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## 2

### ELEVATE YOUR IIS TEAM: ESSENTIAL WORKFORCE TOOLS FROM PHII *Continued from page 11*

- **IIS Role Descriptions:** Provides guidance for identifying staffing needs and subsequent recruiting.
- **IIS Role Description Curricula:** Maps specific, recommended e-learning courses directly to each IIS role for effective skill-building.

#### Latest e-learning courses:

- **Leadership and Management for IIS:** Explore what it means to be an IIS leader and effective strategies for success.
- **Training for IIS:** Learn best practices for designing and delivering impactful virtual training to external partners.
- **Data Quality Course for Providers:** Explore the importance of IIS high-quality data and how it's essential to patient decision making.

Dive into additional IIS staffing resources on the [IIS Learning Hub](#).

For questions about PHII's IIS resources, please email [iis@phii.org](mailto:iis@phii.org).