AIRA
AMERICAN IMMUNIZATION REGISTRY ASSOCIATION

DECEMBER 2024 | ISSUE NUMBER 104

SNAPSHOTS

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

PRESIDENT'S REPORT

Dear Colleagues,

I am pleased to be the AIRA Board president for 2024–2025!

The immunization information systems (IIS) community has shown exceptional resilience and dedication in 2024. Despite the challenges posed by the COVID-19 pandemic, we expanded our work and introduced enhanced data visualization tools. Our collective efforts led to a significant increase in immunization data exchanges using the IZ Gateway platform. Some systems even developed tools to improve data quality and promote health equity. We also supported the reporting of novel RSV immunizations and new COVID-19 vaccines. Your hard work and commitment have not gone unnoticed, and your achievements are a source of pride for all of us.

I will support the IIS community as we transition from the COVID-19 pandemic era to a period of austerity. I envision the year 2025 to be a year of prioritization, planning, and preparation.

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As most federal COVID funding expires in June 2025, the IIS community must prioritize projects and staffing as we move beyond the COVID "funding cliff." It is crucial that we continue to advocate for sustainable funding to ensure we can maintain the high-caliber data and services that we provide. The urgency of this issue cannot be overstated.

In 2025, planning with our Centers for Disease Control and Prevention (CDC) partners is of utmost importance. The community must plan for a new CDC cooperative agreement application process at the beginning of 2025. Alongside the new cooperative agreement, IIS must plan for the updated CDC IIS Functional Standards. A new cooperative agreement and functional standards will set the stage for IIS work for years to come.

Continued on page 2

TABLE OF CONTENTS

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PRESIDENT'S REPORT *Continued from page 1*

Finally, we must prepare to engage with other technical partners as part of large-scale federal data modernization efforts. These efforts will be fueled by the Public Health Infrastructure Grant (PHIG) – Modernizing Immunization Information Systems (MIIS) grants awarded in 2024. Focusing on DMI will ensure our systems remain interoperable, sustainable, flexible, and innovative.

I'm thrilled about the potential and opportunities that the future holds for the IIS community. AIRA is here to support us through it all, and I can't wait to see what we can achieve together.

Wishing you and your families a wonderful holiday season and a happy new year!

Regards,
Melissa Mickle-Hope, MPH
Director, Citywide Immunization Registry (CIR), Bureau of Immunization
NYC Department of Health and Mental Hygiene
AIRA Board President

TABLE OF CONTENTS

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NEW HAMPSHIRE HL7 IMMUNIZATION IMPLEMENTATION GUIDE DIGITIZATION USING THE IGAMT TOOL

New Hampshire, in collaboration with the CDC, embarked on a significant initiative as the first state to pilot the digitization of an HL7 Implementation Guide (IG) using the Implementation Guide Authoring and Management Tool (IGAMT), a tool developed by the National Institute of Standards and Technology (NIST).

This initiative represents a critical step toward modernizing the state's immunization registry and improving data interoperability across immunization information systems (IIS) to electronic health records (EHRs), IIS to IIS, and IIS to CDC. The digitization of the New Hampshire IG reflects broader efforts to standardize health care data exchange and align with national public health standards.

This initiative represents a critical step toward modernizing the state's immunization registry and improving data interoperability across immunization information systems (IIS) to electronic health records (EHRs), IIS to IIS, and IIS to CDC.

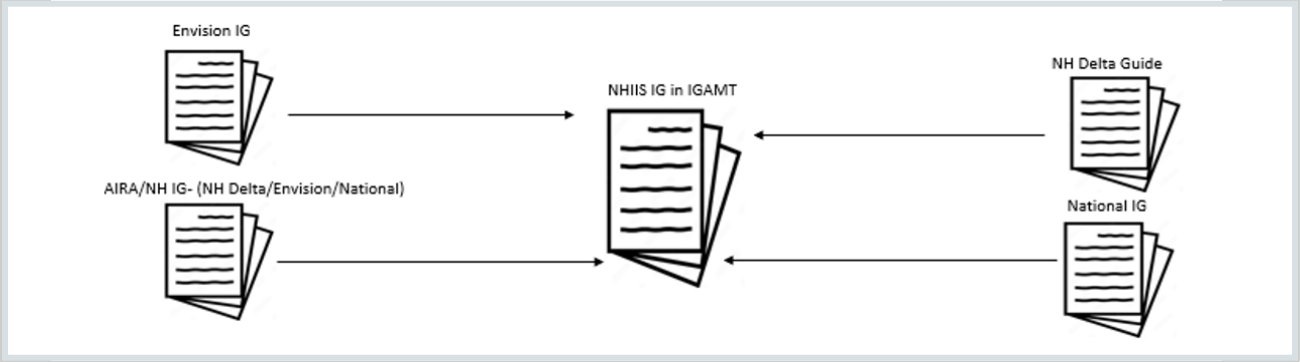
KEY ACHIEVEMENTS IN NEW HAMPSHIRE

New Hampshire successfully digitized its entire IG through IGAMT, which will help with improving data accuracy, interoperability, and public health reporting.

Below are some key highlights of the project.

Standardization of Immunization Data Exchange

The digitized IG has streamlined the exchange of immunization data between the New Hampshire Immunization Information System (NHIIS) and providers' EHR systems. This effort resulted in the consolidation of four documents into one comprehensive IG that includes all up-to-date national and local requirements.

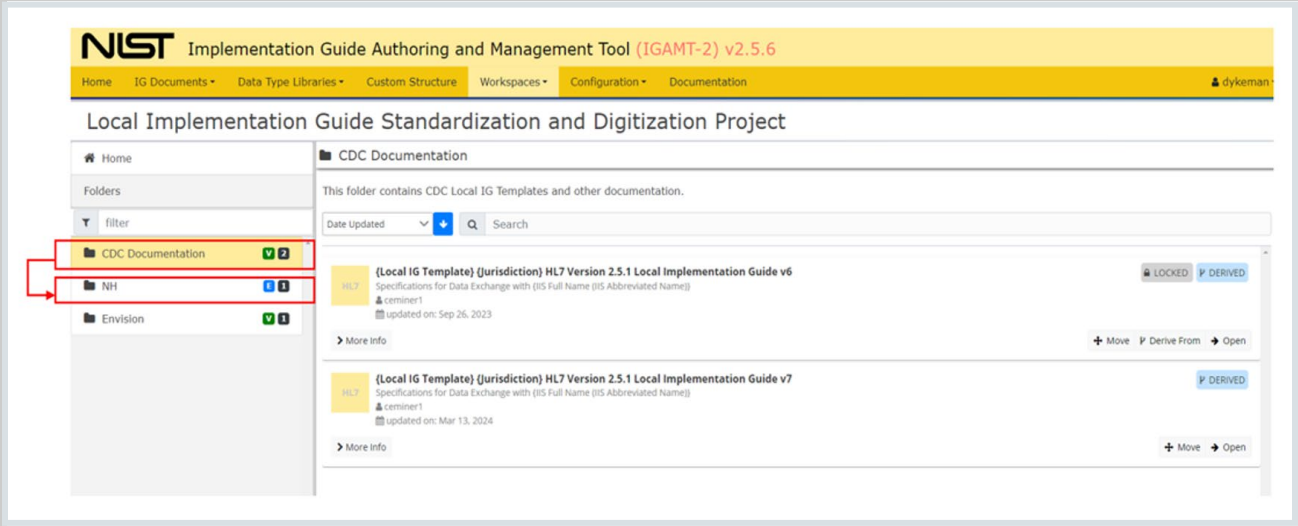


Continued on page 4

NEW HAMPSHIRE HL7 IMMUNIZATION IMPLEMENTATION GUIDE DIGITIZATION USING THE IGAMT TOOL *Continued from page 3*

Alignment with national standards

New Hampshire's use of IGAMT has ensured that the state's IIS is fully aligned with national standards. This not only improves interoperability with other states and national health care systems but also positions New Hampshire as a leader in health care data standardization.



Collaboration with CDC

The project benefited greatly from the close collaboration between New Hampshire and the CDC. The CDC provided guidance and support throughout the digitization process, ensuring that the state's Implementation Guide met national IG standards and created discussions in areas where deviations existed.

BENEFITS OF DIGITIZING THE IMPLEMENTATION GUIDE

New Hampshire's digitization of its IG through IGAMT has delivered several important benefits:

- **Improved data interoperability:** The digitized guide ensures that health care data is exchanged seamlessly across systems.
- **Enhanced data accuracy:** By automating and standardizing data exchange, the project has significantly reduced the likelihood of errors, ensuring that health care providers and public health agencies have access to accurate and reliable IIS requirements.

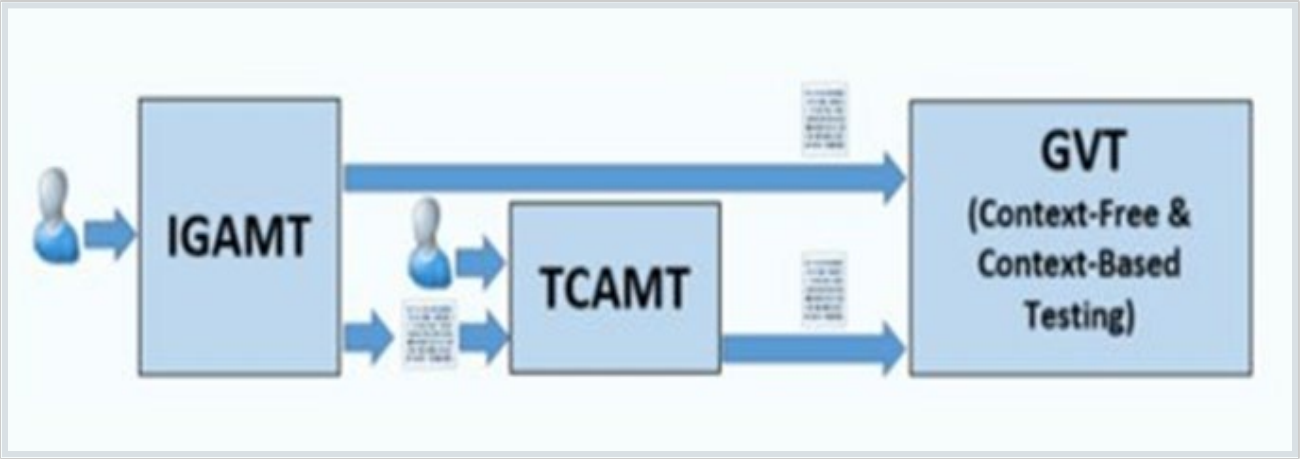
Continued on page 5

NEW HAMPSHIRE HL7 IMMUNIZATION IMPLEMENTATION GUIDE DIGITIZATION USING THE IGAMT TOOL *Continued from page 4*

- **Streamlined public health reporting:** The digitized guide enables more efficient data submissions, reducing the administrative burden on health care providers and speeding up public health reporting.
- **Adaptability for future public health needs:** New Hampshire's digitized guide is designed to be adaptable to future updates, allowing the state to stay current with evolving public health data standards and technology advancements, such as exporting the IG to XML for mapping to FHIR resources in the future.

NEXT STEPS: EXPANDING DIGITAL HEALTH INITIATIVES

Following the successful completion of the digitization project, New Hampshire is now focused on further enhancing its public health infrastructure. Plans include publishing the IG for digital use by providers and integrating it with the General Validation Tool as part of the pre-onboarding conformance testing process. This will enable providers to validate their HL7 messages against New Hampshire's requirements before reaching the onboarding stage, ultimately reducing onboarding wait times and helping providers prepare their EHR systems for the process.



– Submitted by Ezenwa Dike, M.S, RHIA, *NH Immunization Program,*
and Jacqueline Ramirez, *NHIIS Program Manager, NH Immunization Program*

ORACLE HEALTH CASE STUDIES EMPHASIZE PRE-SUBMISSION DATA VALIDATION STRATEGIES TO IMPROVE DATA QUALITY

Oracle Health has been actively engaged in initiatives aimed at enhancing immunization data quality.

Following its acquisition of Cerner in 2022, Oracle Health has continued its partnership with the Immunization Integration Program (IIP) to improve data accuracy and quality through collaboration with health care organizations, electronic health records (EHRs), and immunization information systems (IIS). This article summarizes recent case studies conducted by Oracle Health and its customers, focusing on the strategies implemented, the solutions provided, and the resulting outcomes.

As part of the IIP Collaborative's data validation work, a proof of concept for data quality improvement was led by a team of pediatric and family medicine physicians from University of Missouri (MU) Health Care and included collaboration with an IT pharmacist and an interface analyst as well as consultation with Oracle Health, MU's EHR vendor. Over two weeks, they reviewed approximately 12,000 acknowledgment (ACK) messages and found that, while none of the submissions resulted in data rejections, around 2,500 messages (21%) contained errors. The most common errors included issues with the unit of measure (76%), Vaccine Information Statements (VIS) (11%), and other configuration errors (6%). Notably, the unit of measure discrepancies stemmed from the IIS, ShowMeVax, expecting "mL^^UCUM" format, while MU found it beneficial for clarity to provide both the strength and volume for the nursing staff. The VIS errors resulted from using a single VIS for multi-antigen vaccines administered at each visit over a child's first year of life. Although provision of a single VIS is acceptable, the IIS expects individual VIS entries for the individual antigens in multi-antigen vaccines, resulting in errors. Most of the configuration errors resulted from administration refusals accompanied by notes, and ShowMeVax does not expect these notes unless a vaccine is administered.

This exercise emphasized the importance of aggregating acknowledgment messages for analysis and prioritization, as this approach enables health care systems to address the most impactful issues effectively. Many of these errors were invisible to end users, including providers and frontline staff, requiring storage and aggregation by the EHR for analysis. This underscores the need for EHR vendors to work with their customers to identify issues that can be addressed through business rules and interface configuration updates. The success of the proof of concept encouraged Oracle Health to seek additional pilot health care sites in different jurisdictions to perform more detailed case studies. These health care sites were chosen based on internal metrics that indicated high volumes of vaccination update messages (VXUs) and elevated error or warning rates. The methodology, carried over from the proof of concept, involved analyzing ACKs over a specified period to identify common error types and their underlying causes. The analysis emphasized immediate actions to address easily correctable issues while fostering ongoing collaboration with health care organizations to refine data submission processes.

Continued on page 7

ORACLE HEALTH CASE STUDIES EMPHASIZE PRE-SUBMISSION DATA VALIDATION STRATEGIES TO IMPROVE DATA QUALITY

Continued from page 6

The solutions and actions taken by Oracle Health, in collaboration with four health care organizations reporting to IIS in Missouri, California, Wisconsin, Maryland, and New Jersey, addressed identified issues through a combination of interface configuration updates, process improvements, and training sessions. Some examples of interface configuration updates included standardized email address formats to prevent inconsistent registration entries; implemented default values for critical fields like "OK to Share Info"; and adjusted system logic to handle newborn registrations more effectively. These changes were aimed at eliminating unnecessary warnings related to unassigned or placeholder names. Process improvements included making race and ethnicity fields mandatory during outpatient registration, a change that significantly enhanced data completeness. Workflows were also revised to ensure accurate documentation of immunizations and related data points, such as vaccine manufacturer codes. Training sessions played a crucial role, as Oracle Health worked closely with health care staff to improve vaccine inventory management and data entry practices.

The outcomes of these case studies demonstrated significant improvements in data quality at each site. For example, in the California-focused case, interface cleanups and workflow adjustments led to a 61% reduction in error and warning messages. Specific errors, such as missing or invalid data for race and ethnicity fields, saw substantial decreases due to these targeted changes. In Wisconsin, the analysis revealed various VIS issues that resulted in configuration and interface updates. In the case involving a health care organization operating in Maryland and New Jersey, the analysis revealed different issues for each of the jurisdictions they reported to. For the Maryland clinic, actions were taken to address issues related to VFC (Vaccines for Children) lot management and invalid data formats which resulted in a 57% reduction in overall acknowledgment errors. The clinic's VFC-related errors dropped from 64 to zero in a two-week period. Its data quality improved significantly after providing additional VFC training to practice vaccine managers. Most errors when submitting to New Jersey's IIS were due to missing phone numbers and lack of segmentation. Updating the interface to correct the phone number format fixed these issues and eliminated all warnings.

The case studies highlighted several critical factors contributing to the improvement of immunization data quality. Effective collaboration and communication between Oracle Health and health care organizations, in conjunction with ACK message analysis, were vital in identifying and resolving data quality issues.

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Continued on page 8

ORACLE HEALTH CASE STUDIES EMPHASIZE PRE-SUBMISSION DATA VALIDATION STRATEGIES TO IMPROVE DATA QUALITY *Continued from page 7*

Moreover, due to actionable and standardized adherence to ACK messages, the involvement of IIS was not always necessary for the successful implementation of these improvements. By leveraging internal analytics, many of the data quality issues were resolved without requiring IIS to be directly engaged. This approach empowered health care systems to address challenges autonomously while still aligning with public health goals and achieving high standards of data accuracy. Additionally, optimizing workflows by addressing variations in data entry practices and implementing standardized procedures across different sites helped improve clinical workflows, reduce errors, and enhance data integrity. Continuous monitoring of data submissions, coupled with feedback loops between all partners, enabled the prompt identification and correction of recurring issues.

In conclusion, Oracle Health's data quality initiative demonstrates the potential of EHR and health care organizations to significantly enhance data quality in immunization records prior to submission to the IIS. The lessons learned from these case studies serve as a model for other health care organizations seeking to improve their data practices. By addressing both technical and procedural elements of data management, Oracle Health has shown that meaningful improvements in data quality are achievable through targeted actions and effective partnerships.

– Submitted by Kristin Glaza, *Senior Manager-Product Management, Oracle Health,*
and Sabrina Matlock, MHIHIM, PMP, *Project Manager, American Immunization Registry Association (AIRA)*

TALKING AIRA BOARD WITH OUTGOING BOARD PRESIDENT HEATHER ROTH

While AIRA welcomed the new members to the AIRA Board in October, I had the pleasure of speaking with outgoing Board President Heather Roth in an exclusive interview.

During our conversation she reflected on her time with the AIRA Board, sharing her experiences, insights, and lessons learned during her tenure. Below are her responses to our questions, highlighting her journey.

Q: You've been a valued member of the AIRA Board for quite some time. Could you share the various roles you've held during your tenure and how long you've been part of the Board?

I joined the AIRA Board in 2018, having been in the IIS space for a while and was interested in learning more about the organization and contributing. I am pretty sure I nominated myself and was fortunate enough to be elected. Not long after, the treasurer position became available, and I was asked to step in—yet another great opportunity for me to take on a leadership role. I served as treasurer for nearly four years, during which time we established the finance committee and developed policies and investment strategies. In 2022, I became president-elect, then served as president in 2023–2024, providing me with more exposure to AIRA as an organization and conversations happening at the national level.

Q: What is one of your fondest memories from serving on AIRA's Board, and what made that experience particularly meaningful?

My most recent fond memory was my experience as Board president at the 2024 National Meeting. Having a platform to share a program perspective of where we are in history and what's on the horizon was a great pleasure. Being recognized and acknowledged for my contributions made it even more special.

Q: How have you seen the IIS community evolve during your time with AIRA, and what do you believe were the key factors driving this change?

As a whole, the IIS community has continued to advance, partly due to funding from COVID but also largely due to the standardization efforts AIRA has driven for the community and with the community—being able to assess our systems and actually do something about those areas where we could use some improvement. From a Colorado perspective, we faced challenges with our AART results because, even though we were an Envision client, we hosted it in our IT sphere and it created some problems when it came to assessment. Moving over to Envision's cloud and HL7 messaging engine immediately brought them up to speed with standardization and assessment, and we see our results really aligned with the rest of the Envision community.

Continued on page 10

TALKING AIRA BOARD WITH OUTGOING BOARD PRESIDENT HEATHER ROTH *Continued from page 9*

Over the time I was on the AIRA Board, collaboration between the immunization program managers and IIS managers was greatly improved. The IIS has become integral to almost everything we do as an immunization program, from measuring coverage rates to processing vaccine orders, vaccine distribution, and everything related to consumer portals.

Q: As you transition away from your role on the AIRA Board, what aspects of this experience will you miss most?

I have really enjoyed the connections I have made with fellow Board members. It has been a meaningful professional experience for me, to have those connections and foster those relationships over time. I'll miss seeing those people in that space, as well as the AIRA staff. You all are so great and so welcoming and just so smart. In December, I'll take over as AIM Chair and will continue to have interactions with AIRA leadership, which will help me stay plugged in.

It has been a meaningful professional experience for me, to have those connections and foster those relationships over time.

Q: What are some of the most valuable lessons you learned during your tenure on the AIRA Board that you would share with current and future leaders in the IIS community?

AIRA says they are for the community, and they certainly are. I witnessed time and time again AIRA demonstrate that it is really community driven and community involved. I recall a conversation on how to get programs more engaged and have seen AIRA's engagement grow over time.

My advice would be to get involved and to also encourage other staff to get involved in what AIRA does. It is through that participation that AIRA really gets its strength and best represents the needs of the community.

Final thoughts

In closing the interview, Heather offered some final thoughts, encouraging both new and seasoned individuals in the IIS or immunization program space to consider running for a position on the AIRA Board. She reflected on the valuable connections she formed and insights she gained during her time as an AIRA Board member, expressing the positive impact these experiences contributed to her professional development.

– Submitted by Gabriella Wagoner, MPH, *Communications Specialist, American Immunization Registry Association (AIRA)*

STRATEGICALLY PLAN WORKFORCE DEVELOPMENT WITH PHII'S IIS ROLE DESCRIPTIONS CURRICULA

In 2022 and 2023, the Public Health Informatics Institute (PHII) refreshed its 12 IIS role descriptions.

The descriptions, created with funding from the CDC, guide staffing recruitment by outlining competencies and responsibilities. This year, PHII introduced training curricula aligned with these roles, offering recommended courses to enhance the skills of IIS professionals and create a clear training pathway. The training curricula available on PHII's IIS Learning Hub, along with other trainings and tools, aim to support IIS operations and functionality. PHII is grateful for ongoing collaborations with CDC, AIRA, and jurisdictional IIS teams to develop and refine the tools and resources featured on the IIS Learning Hub. For updates on new resources, direct any questions to iis@phii.org.

This year, PHII introduced training curricula aligned with the 12 IIS roles, offering recommended courses to enhance the skills of IIS professionals and create a clear training pathway.

– Submitted by Piper Hale, MPH, *Associate Director of Communications, Public Health Informatics Institute (PHII)*

TECH CORNER | PROVIDING PUBLIC HEALTH EXPERTS WITH PRAGMATIC EXPLANATIONS OF TECHNICAL CONCEPTS

AI IN PUBLIC HEALTH: AN INTRODUCTION

Artificial Intelligence (AI) is everywhere in today's conversations, from news headlines to tech conferences, but what does it really mean for public health?

Like many emerging technologies, AI brings both excitement and confusion. We often hear (promises) about AI replacing workers or revolutionizing industries overnight. In reality, AI is more like the microwave when it first appeared in the 1960s: a powerful tool that enhances what we already do, but it won't replace the stove—or the cook. This is the key message we'll explore in a series of articles on AI's potential in our work.

It's easy to overestimate AI's capabilities—much like thinking a microwave could replace an oven—but AI works best as a complement to the processes we already have. It's not a magic solution, but when used for the right tasks, AI can streamline administrative work, improve communications, and help us operate more efficiently. The key is to apply AI where it adds real value.

It's also important to remember that AI isn't one all-encompassing technology. Many AI tools have been embedded in public health for years, even if we don't label them as such. Technologies like patient matching and vaccination recommendation logic are early forms of AI we've already been using. What we see today are more advanced algorithms built on decades of research, helping us solve problems once considered unsolvable. These concepts will be explored further in our upcoming series of articles.

In this series, we'll cover:

- What is AI? Breaking down common terms and misconceptions
- The role of AI in augmenting the work of public health staff, not replacing them
- Practical uses of large language models (LLMs) for speeding up basic tasks like summarizing reports, training new staff, and automating routines

AI isn't the future—it's already here. And with the right understanding, it can help us tackle the growing challenges in public health, one task at a time.

- Submitted by Nathan Bunker, *Senior Technical Standards Architect, American Immunization Registry Association (AIRA)*

The "AIRA Tech Corner" is published as a blog. Read more on the AIRA website.