



SNAPSHOTS

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

PRESIDENT'S REPORT

Dear IIS partners,

Happy September! Hopefully you were able to find some time to disconnect from work and enjoy time with family and friends over the summer. It is officially the start of my favorite time of year—fall colors, pumpkins (and let's be honest, pumpkin-flavored everything), the last harvests of backyard gardens, and feeling like a kid again on Halloween. Let's not forget it is also the time of year for seasonal flu, RSV, and updated COVID-19 vaccine formulations. We are excited to share the September edition of *SnapShots* with you, there's something for everyone!

First up is a fantastic story about the strategic collaboration between Indiana and its IIS vendor, STHealth, which offers a direct example of how the AIRA Aggregate Analysis Reporting Tool (AART) can be used in the real world to drive improvements at the jurisdictional level. Next, we invite you to read an update from the North Dakota IIS program, which performed a fascinating study using IIS data to assess whether parental vaccination status is a predictor of childhood vaccine acceptance in the same household. Such a cool use of IIS data! Also included in this edition is an overview from the Public Health Informatics Institute (PHII) on various resources they have developed to assist IIS programs in becoming more involved with Data Modernization Initiative (DMI) work in their jurisdictions. And to close out this edition, we hope you enjoy the Tech Corner, where we are invited to think about what the future of IIS interoperability might look like—and how you can get more involved in those discussions.

Lastly, this is my final *SnapShots* report as AIRA Board President. It has been an honor and a privilege to serve AIRA and the IIS community in this role. Congratulations to all of the incoming AIRA board members and officers. I can't wait to see what the next year brings!

With gratitude,

Heather Roth, MA

Immunization Branch Chief, Colorado Department
of Public Health and Environment
AIRA Board President

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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 with information about a successful programmatic or technical innovation, major accomplishment, or milestone that your IIS has reached.



AART CLINIC COLLABORATION: HOW INDIANA TRANSFORMED ITS M&I RESULTS

In the realm of public health, the importance of accurate, timely, and high-quality data cannot be overstated.

For Indiana, the journey to achieving validation in Measurement and Improvement (M&I) has been marked by strategic collaboration, innovative solutions, and a relentless pursuit of excellence. This is the story of how Indiana, with the invaluable support of its vendor partner, STChealth, and trusted member organization, AIRA, turned aspirations into tangible improvements, setting a benchmark for others to follow.

Despite diligent efforts by Indiana's immunization information system (IIS) staff, there were noticeable gaps in data quality and alignment with national standards. Observing that other STChealth customers were achieving better results using the same platform, the disparity was a call to action for the state's immunization program manager, Dave McCormick. It was clear that a new approach was needed—one that leveraged external expertise and fostered collaboration.

The collaboration began in earnest at the AIRA 2024 National Meeting in Orlando in May, where Indiana participated in an on-site AART (Aggregate Analysis Reporting Tool) clinic also attended by STChealth, Indiana's IIS vendor and pivotal partner. This session was more than just a review of current results; it was a deep dive into actionable strategies tailored to Indiana's unique needs.

One of the first steps in this collaborative journey was the development of a comprehensive AART matrix. This matrix was not just a tool but also a road map that identified specific areas where improvements could be made. STChealth detailed action steps for each M&I content area and result, pinpointing whether the responsibility for enhancement lay with STChealth or Indiana. This clear delineation of roles was crucial in ensuring that efforts were targeted and efficient.

The implementation phase saw rigorous tracking of changes and outcomes. By June 2024, the fruits of this meticulous planning and execution were already evident. Indiana's latest quarter-two report showcased a marked improvement: the state was now passing 25 out of 27 measures in Data Quality Incoming/Ongoing, up from 23 in the first quarter. This progress was not just a numerical achievement; it was a testament to the power of strategic collaboration. The focus now is on sustaining these improvements and exploring new areas for enhancement. By maintaining a commitment to data quality and leveraging the strengths of partnerships, Indiana and STChealth are well positioned to continue making strides.

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AART CLINIC COLLABORATION: HOW INDIANA TRANSFORMED ITS M&I RESULTS *Continued from page 2*

Indiana's story is a powerful reminder that, with the right partners, clear strategies, and a commitment to continuous improvement, remarkable achievements are possible. AIRA staff are available to organize and facilitate virtual AART clinics for IIS and technology partners anytime.

– Submitted by Alexandra Hayes, MA, LSSGB, Senior Project Manager, American Immunization Registry Association (AIRA); Dave McCormick, Director of Immunization Division, Indiana Department of Health (IDOH)

ASSESSMENT OF PARENTAL VACCINATION ACCEPTANCE AS A PREDICTOR OF CHILDHOOD VACCINATION

Maintaining high vaccination coverage is vital to preventing disease outbreaks. Unfortunately, coverage rates in North Dakota have not reached established public health goals needed to achieve community herd immunity against vaccine-preventable diseases.

According to the National Immunization Survey (NIS) and the North Dakota Immunization Information System (NDIIS), North Dakota infant vaccination rates have decreased for routine immunizations as have seasonal influenza vaccination rates for all ages. Coverage rates for adolescents have remained fairly steady and have continued to increase for adults. Vaccination coverage for COVID-19 remains low compared to routine and seasonal influenza vaccination, especially for children.

In an effort to better understand vaccination trends and attitudes toward vaccination in North Dakota, the North Dakota Department of Health and Human Services (ND DHHS) immunization unit staff used data from the NDIIS to assess vaccination coverage for children 18 years of age and younger and adults 19 years of age and older living in the same household. The goal of this evaluation was to use household vaccination data to assess if parental vaccination could be considered an indicator for the likelihood of childhood vaccination.

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ASSESSMENT OF PARENTAL VACCINATION ACCEPTANCE AS A PREDICTOR OF CHILDHOOD VACCINATION

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Limited research on this topic has been conducted predominantly via survey and has mostly relied on parental self-reporting. These surveys have found a significant correlation between pediatric vaccination and parental vaccination status as well as a greater adherence to recommended vaccine schedules for childhood vaccination when parents are up to date.

The NDIIS has been in operation since 1996. It is a lifespan system with 100% childhood and adult participation. Children are entered in the NDIIS at birth, through connections with provider electronic health record (EHR) systems and North Dakota Vital Records.

The authors extracted demographic records for North Dakota adults (19 years of age and older) and children (18 years of age and younger) from the NDIIS. Age was calculated as of January 1, 2023. Records for persons over the age of 105 years of age were excluded. Additional records with an address belonging to a social service agency or group living facility or with an incomplete or unknown address were also excluded. All remaining addresses were run through Smarty for validation and correction.

A unique index key was created for all remaining childhood and adult records using street address and city of residence. Childhood records were matched to adult records using the index key. Records with matching address and city of residence were then grouped into households using a unique identifier for each household match. Households with more than 10 matches were excluded from the rest of the analysis. The first part of the analysis identified 307,771 residents living in 80,954 unique households. Household adults were found to be predominantly white (55.1%), non-Hispanic (66.4%) females (55.7%) with an average age of 39 years. Household children were also predominantly white (59.2%), non-Hispanic (70.7%), evenly split between males (50.5%) and females (48.2%) with an average age of 8 years.

TABLE 1 | Household characteristics

Number of households	80,954
Total persons in all households	307,771
Adults (19+) (%)	51.6%
Children (18 and under) (%)	48.4%
Adolescents (13-15 years) (%)	10.8%
Infants (19-35 months) (%)	6.8%
Household adult age, mean(sd)	38.9 (12.3)

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ASSESSMENT OF PARENTAL VACCINATION ACCEPTANCE AS A PREDICTOR OF CHILDHOOD VACCINATION

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Adult sex (%)	
Male	40.9%
Female	55.7%
Not reported/missing	3.4%
Adult ethnicity (%)	
Hispanic or Latino	3.1%
Not Hispanic or Latino	66.4%
Unknown or not specified	21.2%
No value at all reported	9.2%
Adult race (%)	
American Indian or Alaskan	7.4%
Asian	1.9%
Black or African American	3.3%
Native Hawaiian or Other	0.2%
White	55.1%
Other race	5.7%
Unknown or not specified	17.2%
No value at all reported	9.2%
Household children age, mean(sd)	8.2 (5.2)
Children sex (%)	
Male	50.5%
Female	48.2%
Not Reported/missing	1.4%
Children ethnicity (%)	
Hispanic or Latino	2.6%
Not Hispanic or Latino	70.7%
Unknown or not specified	19.5%
No value at all reported	7.2%
Children race (%)	
American Indian or Alaskan	7.9%
Asian	1.6%
Black or African American	4.1%

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ASSESSMENT OF PARENTAL VACCINATION ACCEPTANCE AS A PREDICTOR OF CHILDHOOD VACCINATION

Continued from page 5

Children race (%) <i>continued</i>	
Native Hawaiian or Other	0.2%
White	59.2%
Other Race	6.9%
Unknown or not specified	12.7%
No value at all reported	7.4%

Using vaccination data from the NDIIS, the authors assessed COVID-19, influenza, and routine vaccination status for adults and children in identified households. Adults (19 and older) and children (18 and younger) were considered up to date (UTD) with COVID-19 if they received at least one dose of any COVID-19 vaccine and were defined as UTD with influenza if they received at least one dose of any influenza vaccine in at least one of the last five influenza seasons. For routine vaccination, children 19–35 months of age were considered UTD if they had completed the 4:3:1:3:3:1:4 series (4 DTaP, 3 polio, 1 MMR, 3 hepatitis B, 3 Hib, 1 varicella, 4 PCV). Adolescents 13–15 years of age were considered UTD if they received 1 Tdap, 1 MCV4, and a complete HPV series. Adults 19 and older were considered UTD if they received at least 1 Tdap dose at or after 19 years of age.

Results of the analysis showed statistically significant differences across all vaccines evaluated among children in households with UTD adults and not up-to-date (NUTD) adults. There was a greater proportion of children NUTD with the COVID-19 vaccine regardless of the COVID-19 vaccination status of adults within the same household. The analysis found a higher proportion of children UTD with seasonal influenza vaccine in households with adults who were also UTD. For routine immunizations, the analysis found a higher proportion of infants UTD with the complete 7-vaccine series and adolescents UTD with Tdap and MCV4 regardless of the routine Tdap vaccination status of adults within the same household. The result was different, however, for HPV vaccination. The analysis found more adolescents NUTD with HPV living in households with adults UTD with their routine Tdap vaccination and more UTD adolescents living in households with NUTD adults.

Results of the analysis showed statistically significant differences across all vaccines evaluated among children in households with UTD adults and not up-to-date (NUTD) adults.

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ASSESSMENT OF PARENTAL VACCINATION ACCEPTANCE AS A PREDICTOR OF CHILDHOOD VACCINATION

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TABLE 2 | Household vaccination results

Vaccine	UTD Adults	NUTD Adults	P-value
COVID-19			<.0001
UTD Children	35.3%	3.3%	
NUTD Children	64.7%	96.7%	
Influenza			<.0001
UTD Children	72.6%	32.9%	
NUTD Children	27.4%	67.1%	
Tdap Adolescent			<.0001
UTD Adolescents	81.4%	69.7%	
NUTD Adolescents	18.6%	30.3%	
HPV Adolescent			<.0001
UTD Adolescents	45.7%	59.8%	
NUTD Adolescents	54.3%	40.2%	
MCV Adolescent			<.0001
UTD Adolescents	78.8%	67.4%	
NUTD Adolescents	21.2%	32.6%	
4:3:1:3:3:1:4 Series Infant			<.0001
UTD Infants	81.2%	74.4%	
NUTD Infants	18.8%	25.6%	

This evaluation showed that parental COVID-19 vaccination status is not an indicator for childhood COVID-19 vaccination. Children in North Dakota are more likely to be NUTD than UTD with COVID-19 vaccine regardless of their parents’ vaccination status. Parental influenza vaccination could be considered an indicator for childhood vaccination. If North Dakota adults receive seasonal influenza vaccine, they are more likely to have their children vaccinated against influenza than parents who are not vaccinated. Parental Tdap vaccination status is not a clear indicator for childhood routine vaccination. Infants are more likely to be UTD than NUTD with the complete 7-vaccine series, and adolescents are more likely to be UTD than NUTD with Tdap and MCV4 regardless of their parents’ vaccination status. Additional analysis is needed to better understand the inverse relationship found between parental routine Tdap vaccination and adolescent HPV vaccination.

– Submitted by **Mary Woinarowicz, MA**, NDIIS Manager, North Dakota Health and Human Services;
Melissa Anderson, NDIIS Data Quality Coordinator, North Dakota Health and Human Services



ALIGNING AN IIS WITH THE DATA MODERNIZATION INITIATIVE

The Data Modernization Initiative (DMI) is an ambitious, CDC-led undertaking to revitalize and modernize health data infrastructure across the United States through direct funding to large public health jurisdictions.

As immunization programs and IIS staff look for innovative paths to sustain support of their IIS, the Public Health Informatics Institute (PHII), a partner in this CDC-funded work, has recently compiled more information about how IIS programs can become more involved with DMI work in their jurisdictions.

PHII has developed [a brief step-by-step guide](#) with tips on how IIS staff can get connected to efforts to modernize the larger public health system. This guide also offers supplementary resources to learn more about how DMI intersects with the work of IIS.

PHII has developed a brief step-by-step guide with tips on how IIS staff can get connected to efforts to modernize the larger public health system.

Earlier this year, PHII hosted a DMI Learning Community event, which featured [a presentation from the Michigan Care Improvement Registry \(MCIR\) on lessons learned from data modernization](#). This presentation walks viewers through example considerations an IIS team may have when working to align with DMI goals.

PHII also offers [a set of multimedia “DMI Stories from the Field,”](#) which highlight the DMI jurisdictions of state, tribal, local, and territorial (STLT) health agencies around the country. These stories provide lessons learned, promising emerging practices, and inspiration to other STLT agencies beginning or continuing their DMI journeys.

These resources and PHII’s other trainings and tools may be found on [PHII’s IIS Learning Hub](#). PHII is grateful for ongoing collaboration with CDC, AIRA, and jurisdictional IIS teams to develop and refine the tools and resources featured on the IIS Learning Hub. Make sure [you’re signed up to receive PHII’s email updates](#) to stay informed of new resources and technical assistance opportunities.

If you have further questions on potential strategies for aligning an IIS and its funding with DMI, please reach out to CDC at iisinfo@cdc.gov. Questions on PHII resources may be directed to iis@phii.org.

– Submitted by 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

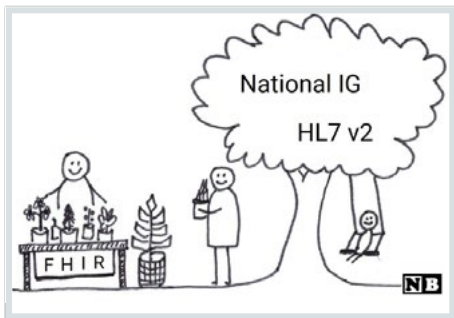
EMERGING STANDARDS: MAKE NEW FRIENDS BUT KEEP THE OLD

Technology is always changing, and our community often asks questions about the future of interoperability. Are we staying with HL7 v2? When are we moving to FHIR?

The short answer is yes, our community will continue to use HL7 v2 for updates and queries, and we are looking to use FHIR to support new types of interoperability. Our goal is to ensure that the hundreds of thousands of our current HL7 v2 interfaces continue to operate as we add new capabilities that will ensure IIS remain the center of immunization workflows for years to come.

To explain this strategy, we use the metaphor of a garden that includes young plants and saplings arranged around a large, mature tree. The large tree represents our current HL7 v2 standard that the community has developed over the last 30 years. It is tried and tested and has supported our systems through many challenges. The young plants represent FHIR. While less mature than the HL7 v2 tree, FHIR saplings will support the community by providing new solutions to interoperability that could not previously be addressed. The goal is not to immediately replace HL7 v2 but rather to see how FHIR can complement and increase our current capabilities.

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This imagery highlights the need for everyone’s contribution as we develop new FHIR standards to complement HL7 v2. As an IIS community, we are the experts in how our systems work, and we are the only ones who can define how future immunization standards will function. When will we move to FHIR standards? Not until we have developed them for immunization use! If you are interested in helping, there are several ways for you to get involved. First, attend [Standards and Interoperability Steering Committee](#) (SISC) meetings and provide comments on proposed

improvements to HL7 v2. We need everyone’s input to ensure the changes are moving us forward. Second, engage with the [Immunization Focus Group](#) (IFG) and the [Public Health Workgroup](#) at HL7. There, we are discussing how FHIR can be used to support new capabilities.

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The “AIRA Tech Corner” is published as a blog. [Read more](#) on the AIRA website.



TECH CORNER

PROVIDING PUBLIC HEALTH EXPERTS WITH PRAGMATIC EXPLANATIONS OF TECHNICAL CONCEPTS

EMERGING STANDARDS: MAKE NEW FRIENDS BUT KEEP THE OLD *Continued from page 9*

The future of interoperability is not one solution but, rather, a garden of solutions all working together. We need your help to make that future happen. Continue working toward the adoption and maintenance of our current HL7 v2 interfaces. Join us in efforts to shape the future of FHIR by participating in the SISC and the Immunization Focus Group meetings. Your perspective and expertise are crucial to the development of standards that will serve our community.

*- 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.