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SNAPSHOTS

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

PRESIDENT'S REPORT

Dear Colleagues,

Happy new year and welcome to spring! I am excited to share the latest issue of *SnapShots* with you to highlight all the great things that have been going on in the IIS community. This first edition of 2023 highlights the Virginia Immunization Information System (VIIS) work establishing bidirectional data exchange with local school districts. Prior to the IIS data exchange, school nurses struggled to gather student immunization records in preparation for the upcoming school year. Through HL7 QBP messaging, multiple school health application systems have been able to interface with VIIS, allowing school health nurses the ability to receive full immunization histories for their students with increased accuracy.

This edition also includes an article on how the Virginia Department of Health (VDH) leveraged its in-house pandemic response tool to support routine immunizations through interoperable data exchange with the Virginia IIS. VDH facilitated collaboration among multiple product teams to simplify what had been a multisystem process for end users. This coordination led to the integration of their pandemic response tool with VIIS for daily automated data transfer.

Additionally, the Public Health Informatics Institute (PHII) has launched its refreshed catalog of eLearning courses for the IIS community along with several updates to the IIS Learning Hub and a revamped learning portal.

Speaking of IIS learning opportunities, don't forget to register for the upcoming AIRA National Meeting. Early bird registration ends Sunday, April 2, so make sure to get registered and join us May 2–4 in San Diego. AIRA received an overwhelming number of abstracts for this year's meeting, so the agenda is sure to be packed full of incredible content. The newly announced keynote speaker, Dr. Saundra Dalton-Smith, an international well-being thought leader, will help us unlock the secrets of burnout prevention in hybrid teams. The national meeting also provides a wonderful opportunity to network with colleagues and partners and meet people in person whom you have seen only through your computer screen. I hope to see you all there. Happy spring!

Regards,
Mary Woinarowicz, MA
Manager, North Dakota Immunization Information System
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.

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BIDIRECTIONAL DATA EXCHANGE BETWEEN THE VIRGINIA IMMUNIZATION INFORMATION SYSTEM AND LOCAL SCHOOL DISTRICTS

The Issue

Each summer, nurses across the commonwealth of Virginia struggle to gather their students' immunization records and prepare for the upcoming school year. During the late summer months, school nurses begin the arduous task of logging in to the Virginia Immunization Information System (VIIS), locating each child enrolled in the school, and logging in to their school division's health application to record each vaccination for hundreds of children. This manual reporting process can lead to issues such as transposing the numbers in dates and/or misreporting which vaccinations were given to which child. It became evident that the school nurses needed a more accurate and efficient way to access and record the immunizations in their health applications.

The Solution

Through query by parameter (QBP) messaging in HL7 version 2.5.1 format, multiple school health application systems have been able to interface with VIIS to allow school nurses to receive full immunization histories for students in real time. The interface has increased the accuracy of vaccination reporting, allowing nurses to spend more time caring for their patients.

Medical providers in Virginia have been utilizing QBP messaging to access full immunization histories and forecasted immunization schedules for several years. In November of 2021, VDH staff began to work with school health applications to initiate QBP messaging with VIIS. This meant that school health applications began to reach out to VIIS to establish an interface allowing school health nurses to query student immunization data in real time. Some school health applications already had the necessary components to connect with VIIS and were onboarded relatively quickly. Other school health applications had to develop and build the interface necessary to perform QBP messaging. This was not a one-and-done process; the VIIS Data Exchange (DE) team continues to test, troubleshoot, and maintain QBP connections with schools as well as establish new such interfaces.

The Outcomes

With less time spent on manual processing of records, school nurses now have time to focus on care of the student population and accurate, full reporting. In addition to regular lookups, school nurses are required to submit a report each fall on the uptake of school-required immunizations. Prior to interfacing with VIIS, this reporting was time intensive, and students' immunizations were often misreported. Now that schools can use their health applications to interface with VIIS, reporting is easier, more accurate, and time efficient.

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Another benefit of QBP messaging is that accurate vaccination data can prevent the spread of communicable disease. Nurses can easily determine who has been vaccinated against which illness and can provide recommendations for isolation or treatment during disease outbreaks. This improves the health and safety of children enrolled in the school as well as administrators, teachers, and custodians who all work in the school building.

Next Steps

In the coming months, the Division of Immunization and the VIIS team aim to provide all school divisions in Virginia with access to this interface. Out of 131 school divisions in the commonwealth, there are 24 school divisions that can query VIIS, and 96 school divisions should be gaining interface capabilities within the next year.

In summary, bidirectional data exchange has allowed school nurses and school health administrators to focus on what really matters: the health of the children enrolled in their schools.

- Written by Caroline Wood, MPH, *Virginia Department of Health*

PHII REVAMPS FREE ELEARNINGS FOR THE IIS COMMUNITY

The Public Health Informatics Institute (PHII) has offered free eLearning courses on specialized informatics topics for more than a decade through its Informatics Academy.

PHII is now revamping its robust catalog of courses with a newly redesigned learning portal. The new Informatics Academy platform was launched last month with a fresh look, improved functionality, a more streamlined user experience.

PHII's catalog of IIS-specific courses includes the Fundamentals of IIS series (Interoperability for IIS, HL7 for IIS, and Data Quality for IIS) as well as courses on advanced topics, such as Immunization Evaluation and Forecasting and Advanced HL7 for IIS. Visit the new Informatics Academy learning portal to learn more!

Additional resources from PHII

Additional staffing tools, training, guidance, toolkits and other IIS-focused resources can be found on the IIS Learning Hub. The IIS Learning Hub undergoes regular updates to remain current and relevant in a rapidly evolving immunization world. Some recent updates include:

- **Sample role descriptions:** PHII has already updated seven of its eleven IIS sample role descriptions, with plans to finish updating all eleven this spring. The role descriptions identify typical duties, responsibilities, and competencies of key IIS team members, such as IIS managers, help desk staff, and testing analysts. Sample role descriptions may be adapted for a number of uses, including planning staffing needs, writing job descriptions, and reallocating staff to new roles.
- **IIS email course:** Last year, PHII refreshed and relaunched the *Welcome to IIS* Email Course, an 18-day orientation to IIS geared toward new IIS staff conducted through bite-sized lessons delivered to participants' email inboxes each day.
- **RTM:** PHII updated the Requirements Traceability Matrix (RTM) in April 2022 to help jurisdictions assess their current IIS functionality or plan for future updates. A recent webinar provided guidance on how best to use the RTM to satisfy funding requirements; the webinar is now published online.
- **Learning hub:** The IIS Learning Hub features step-by-step, deep-dive guidance into processes such as procuring a new IT solution for an IIS or migrating an IIS to a new platform. Visitors can also benefit from more general guidance on day-to-day IIS operations and management, as well as stories from the world of IIS and in-depth histories of the early years of IIS.

PHII is grateful for ongoing collaborations with the CDC, AIRA, and jurisdictional IIS teams from around the United States in developing and refining these tools. Please send any questions or follow-up comments on resources in the IIS Learning Hub to iis@phii.org.

- Submitted by Piper Hale, MPH, *Public Health Informatics Institute*

AN ECONOMY OF SCALE: HOW THE VIRGINIA DEPARTMENT OF HEALTH IS LEVERAGING ITS IN-HOUSE PANDEMIC RESPONSE TOOL TO SUPPORT ROUTINE IMMUNIZATIONS THROUGH INTEROPERABLE DATA EXCHANGE WITH ITS IIS

A vaccine! The glimmer of hope after unprecedented changes to life as we knew it. Holidays with family, attending a graduation ceremony, visiting a newborn in the hospital... all back within reach.

This excitement soon ebbed as challenges to secure vaccination appointments came to light. Restricted supply, scheduling difficulties, and administration inefficiencies made it challenging to receive the vaccine. Limited by the tools available to them, clinicians and public health professionals were overwhelmed by the soaring demand for COVID-19 vaccinations. Unfortunately, this was an all-too-common experience among those not only on the front lines of the COVID-19 pandemic but across other outbreaks and even routine care. For local health districts, navigating the challenges produced by a pandemic was no small feat.

What follows in this article is our journey at the Virginia Department of Health (VDH) to develop and scale a COVID-19 rapid response tool, the Vaccine Appointment Scheduling Engine (VASE+).

Drawing from lessons learned, we moved to resolve significant gaps in our third-party scheduling software by evaluating end-user pain points. Our approach of leveraging firsthand experiences of our user group and encouraging their participation in product development cycles resulted in VASE+ becoming a powerhouse agent supporting the first wave of COVID-19 vaccines and subsequent formulations, as well as the mpox health emergency, routine mass flu vaccination clinics, and COVID-19 testing.

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Amid the COVID-19 pandemic, developing a tool with evolving requirements was an arduous undertaking for VDH. We had to get creative at requirement elicitation without adding to the overflowing workload of potential end users. Therefore, VDH took a hands-on approach and leveraged the application development experiences of our information technology (IT) leads. VDH IT leads attended VDH-contracted mass vaccination clinics and documented workflows and pain points by interviewing and observing staff with different responsibilities from various involved groups. VDH created a team of hand-picked developers, all driven by a shared vision and a commitment to continuous collaboration, iterative development, and incremental improvement.

VDH facilitated collaboration among multiple product teams to simplify what was currently a multisystem process for our end users. A pivotal component of this simplification was the decision to integrate VASE+ and the Virginia Immunization Information System (VIIS) for a daily automated data transfer. Additionally, VASE+ and VIIS teams continued to ease the operational challenges of end users by accommodating multidose COVID-19 vaccines. Instead of having users switch between systems to verify previous doses, the teams introduced a VIIS lookup functionality within VASE+ using application programming interfaces (APIs). They placed the framework and automation necessary to maintain data cohesion between the two interfaces, ensuring data integrity and privacy.

Solid system integrations, quick revisions, enhancements, and active customer support helped build trust in the system's longevity and promoted fast feedback loops and quality inputs from VASE+ clientele. Once VDH launched this product, praise received via word of mouth increased the onboarding numbers and attitudes toward migrating clinical teams to this new system. After devising an effective onboarding process and a few pilot implementations, VDH transitioned more than 38 Virginia health systems from using third-party applications to using VASE+.

As the user base and the system needs grew, VDH established a change control board with representatives throughout the state and central office to decide on the viability of incoming change requests and make sound recommendations. The board's ongoing contribution toward identifying and prioritizing key defining features has helped morph the product into what it is today. Using a hybrid, agile methodology, new features were rapidly incorporated into VASE+ with virtually no downtime.

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VDH also leveraged VASE+ to support a rapid response to the mpox health emergency, and that success led to an increased demand for using VASE+ for other vaccination events. In response, VDH created a module to accommodate yearly flu vaccines, and we expanded data integrations with VIIS by emulating proven existing features within the system. The result of this effort enabled COVID-19, mpox, and flu vaccinations to all happen in tandem. Incorporating the routinely recommended flu product has set the ball in motion; VDH is now actively working on expanding the usage of VASE+ for other mass vaccination events.

Given the achievements of VASE+, health districts have looked forward to enabling the system as a dedicated scheduling and vaccination engine for the foreseeable future. The in-house solution has incurred zero licensing costs; the continuous updates, a dedicated support team, and the care that goes into these services have proven VASE+ a valuable solution for VDH. Today, we look forward to incorporating new vaccination modules to continue assisting health districts in their efforts to vaccinate the constituents of Virginia.

- Submitted by Christy Gray, MPH, CHES, CHTS-CSP,
Public Health Informatics Institute