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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 across the country. We invite you to share news about your registry. Email us at info@immregistries.org or call us at (202) 552-0208 with information about a successful programmatic or technical innovation, major accomplishment or milestone that your registry has reached. *SnapShots* is sent to subscribers three times a year and posted on AIRA's website: www.immregistries.org.

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SnapShots

IIS SPECIAL EDITION

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

PRESIDENT'S REPORT

Welcome to the latest issue of *SnapShots*! We hope your summer is starting off well and that you've been able to spend some time in the sun! If you're looking for some assistance or guidance on IIS-related topics, please check out [AIRA's website](#) for our latest resources and guides. So many great things are happening, and I want to remind you that AIRA provides a lot of information and support through its website, work groups and administrative team. Don't be afraid to reach out if you find you're in need of assistance or guidance. Thank you for your continued support and participation in AIRA-related projects and activities. Your contributions and participation are what make this organization a success, and we appreciate all that you do!

In this special issue of *SnapShots*, you'll find great updates exclusively from immunization programs and immunization information systems. This unique edition of *SnapShots* features articles from Minnesota, North Dakota, Louisiana, Oregon and Wyoming on a variety of topics, including utilizing the IIS for an outbreak response, partnering with stakeholders to increase IIS participation, cloud-based IIS hosting solutions, information on one jurisdiction's statewide immunization conference and so much more. As we continue to face challenges in maintaining and enhancing IIS functionality to meet the needs of our partners and stakeholders, we hope this issue will provide valuable information on some of the innovative work being done by those within our community to help support, utilize and enhance IIS nationwide.

I hope many of you have had the chance to put the things you learned at the AIRA 2017 National Meeting into action. The meeting was such a great opportunity to learn more about current IIS-related projects, share information with our IIS partners and learn from others. If you were unable to attend the meeting, please check the [AIRA website](#) to access presentations, materials and information from the meeting.

I'm grateful to be a part of AIRA and a part of the IIS community. I want to thank the AIRA staff again for all the fantastic work they do. Their hard work and dedication continue to provide exceptional support to our community, and I look forward to continuing our work together throughout the year.

Wishing you all a very happy summer!

Michelle Hood
Administrator, Nebraska State Immunization Information System
AIRA President

Public health and health care workers are relying extensively on Minnesota's IIS to help with the outbreak response.

Minnesota's Use of the IIS in Measles Outbreak Response

Minnesota is currently experiencing its largest measles outbreak in 25 years. In April and May 2017, 70 cases were confirmed in Minnesota. In 2016, 70 total cases were reported in the United States, including two in Minnesota. Public health and health care workers are relying extensively on the Minnesota Immunization Information Connection (MIIC), Minnesota's IIS, to help with the outbreak response.



The measles outbreak cases are associated with over 8,000 health care, child care and school exposures. Public health and health care workers use MIIC's consolidated vaccination records to help determine the immunization status of exposed persons. These records save precious time by alleviating the need to contact multiple providers to determine vaccination history.

MIIC's list-based feature has been a critical tool in the outbreak response. This feature helps quickly determine immunization statuses for multiple individuals by matching an uploaded list of individuals to MIIC vaccination records. The list contains name and date of birth and has a high match rate to MIIC records.

Many providers are using the outbreak as an opportunity to conduct reminder and recall activities to patients who need an MMR vaccine. Providers use MIIC's client follow-up feature to determine which patients are due or overdue for an MMR vaccine based on Advisory Committee on Immunization Practices (ACIP) recommendations. Client follow-up has several output options, including a PDF client report, printable mailing labels, and a CSV file to use for mail merges. The Minnesota Department of Health (MDH) is also using this feature to help providers identify patients recommended for accelerated MMR vaccination based on exposure status.

During the outbreak, MDH is closely tracking MMR vaccine administration and Vaccines for Children ordering trends in MIIC. From January through March 2017, an average of 2,700 doses of MMR were administered in Minnesota per week. In April and May, that average increased to 6,500 doses, with a peak of 9,900 doses administered the week of May 15.

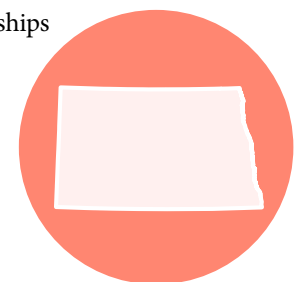
While MIIC does not have a direct consumer access option, MDH provides MIIC vaccination records upon request via phone or REDCap form. Many Minnesota residents have been contacting MDH during the outbreak to request records. From January through March 2017, MDH received an average of 135 requests per week. In April and May, requests increased by 75 percent to an average of 235 per week. On average, 95 percent of requested records are found in MIIC.

MIIC has been critical to the efficiency and effectiveness of Minnesota's outbreak response. MDH is continuing to assess ways to expand MIIC's use during this outbreak and in preparation for future outbreaks. ■

- Submitted by Miriam Muscoplat, Minnesota Department of Health

North Dakota Immunization Program Collaboration with the North Dakota Ryan White Program

The North Dakota Immunization Program has developed several key partnerships with immunization stakeholders and other public health programs in North Dakota. These partnerships are all working toward our common goal of improving the health of North Dakotans. One of these key partnerships is with the Ryan White program in North Dakota.



The Ryan White program provides primary health care and support services to individuals diagnosed with HIV and AIDS. Participants in the program have a case manager they work closely with to coordinate their care. Individuals living with HIV/AIDS are encouraged to receive some additional immunizations above what is normally recommended for their age group, as they are a population that is more vulnerable to disease. The North Dakota Immunization Information System (NDIIS) does not capture information

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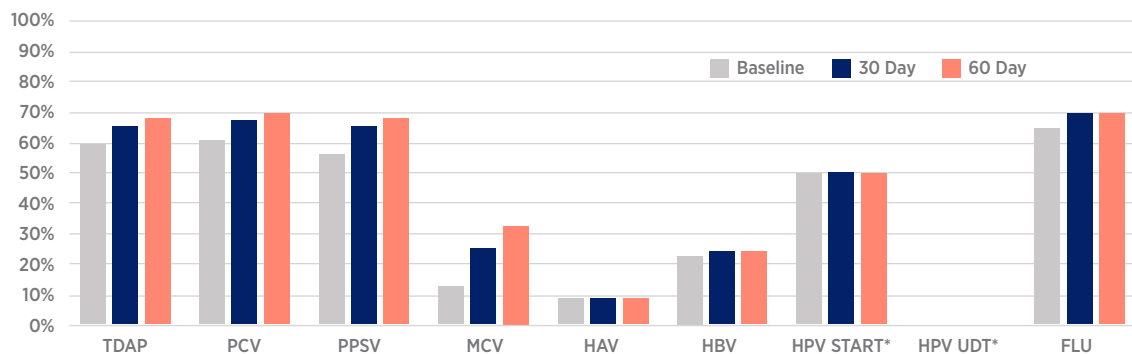
At both the 30-day and 60-day benchmarks, there was an improvement in the coverage rate for Tdap, pneumococcal conjugate, pneumococcal polysaccharide, meningococcal conjugate and hepatitis B vaccines among Ryan White program participants.

about high-risk conditions, and our clinical decision support for immunization (CDSi) does not include rules for any high-risk conditions. Prior to our two programs' working together, looking up immunization histories for the program participants or reviewing immunization recommendations was not part of ongoing case management. The Ryan White program coordinator at the North Dakota Department of Health (NDDoH) and the Ryan White case managers did not routinely access the NDIIS to look up their clients' immunizations, and they did not discuss immunizations with their clients.

The goal of the partnership between the two programs is to identify which vaccines each Ryan White participant has received and which vaccines are still needed and to provide those details to their case managers. Using the NDIIS, the North Dakota Immunization Program public health advisor (PHA) looked up the unique client ID for each Ryan White participant. Ryan White participants were identified using MAVEN, North Dakota's disease surveillance system. Records were found in the NDIIS for 189 (78.1%) of the total 239 program participants. Once we had the complete list of NDIIS client IDs, the NDIIS manager and PHA extracted the immunization history data from the NDIIS. The immunization history data was evaluated using Statistical Analysis Software (SAS©) to determine the vaccination coverage rates for this group as well as to determine which vaccines each individual participant still needed.

Our PHA created a standard reminder/recall letter for all of the Ryan White case managers for each of their clients. It provided details on the vaccine recommendations for individuals diagnosed with HIV and AIDS, which vaccine(s) their individual clients still needed, where they could get their missing immunization(s), and information about insurance coverage for the vaccine(s). These letters were given to Ryan White program participants during annual enrollment in February 2017. The impact of the reminder/recall was evaluated by assessing baseline coverage rates for the whole group as well as by individual Ryan White program site and was reassessed 30 and 60 days after the date the letters were sent to the case managers. At both the 30-day and 60-day benchmarks, there was an improvement in the coverage rate for Tdap, pneumococcal conjugate (PCV), pneumococcal polysaccharide (PPSV), meningococcal conjugate (MCV) and hepatitis B vaccines. The rates for hepatitis A and human papillomavirus (HPV) vaccine series start and series completion (UTD) remained the same. The coverage rate for influenza (flu) vaccine for the current 2016-2017 flu season increased at the 30-day benchmark but did not change at the 60-day benchmark. The 60-day benchmark was completed in May, which is near the end of the current flu season, so we expect to see very little change to coverage rates for flu at this point in the year.

Immunization Coverage Rates for North Dakota Ryan White Program Participants



* HPV series start and series completion coverage rates were assessed for only those Ryan White program participants 26 years of age or younger as of Feb. 1, 2017.

Data Source: North Dakota Immunization Information System (NDIIS)

Additional benefits we have seen from this partnership include providing education to the Ryan White program about immunization recommendations for its participants, providing details to the case managers about the health care needs of their individual clients, and giving an opportunity for case managers to educate their clients on immunization recommendations. The North Dakota immunization program will continue to assess coverage at 90 days, and the whole process will be repeated every six months during Ryan White program enrollment and when Ryan White program participants complete their health insurance coverage enrollment. ■

– Submitted by Mary Woinarowicz, North Dakota Department of Health

■
By working together, we have a better chance of reaching our common goal: to protect all Louisiana citizens, especially children, from vaccine preventable diseases through immunization.

■
In the end we still feel the benefits of a cloud-based hosting solution will be worth the extra effort up front.

Louisiana Expands IIS Participation to Non-traditional Immunization Providers and Wins AIRA Centers of Excellence Award

On April 11, 2017, the Louisiana Immunization Network for Kids Statewide (LINKS) received the AIRA Centers of Excellence Award for “Innovative Approaches to Increasing or Demonstrating Value of Immunization Information System (IIS).” LINKS has recently worked to expand IIS participation by demonstrating the value of the IIS. Working in collaboration with many of our partners, such as Medicaid, the Louisiana Board of Pharmacy and the Louisiana Chapter of the AAP, we have not only demonstrated the incredible value of LINKS to the health of Louisiana citizens but also expanded LINKS participation beyond the usual immunization providers (pediatricians and family practice physicians) to include other, non-traditional immunization providers, such as specialty physicians and pharmacists. For years, the immunization program has worked together with Medicaid to ensure that all Medicaid immunization providers are using LINKS and taking advantage of the benefits that LINKS offers. Examples of these collaborations include supporting Medicaid with its “Pay for Performance” initiative and its annual HEDIS reports. The program has also worked with the Louisiana Board of Pharmacy to pass a law requiring all immunization-certified pharmacists use LINKS when administering vaccines to patients. In 2016, the program collaborated with the Louisiana chapter of the AAP to give immunization providers across Louisiana the ability to generate immunization coverage reports for their patient populations within LINKS. Collaboration is essential to overcoming the challenges we face every day. By working together, we have a better chance of reaching our common goal: to protect all Louisiana citizens, especially children, from vaccine preventable diseases through immunization. ■



– Submitted by Quan Le, Louisiana Immunization Network for Kids Statewide

Oregon’s Experience with Cloud-Based IIS Hosting Solutions: Perks, Perils and Pitfalls

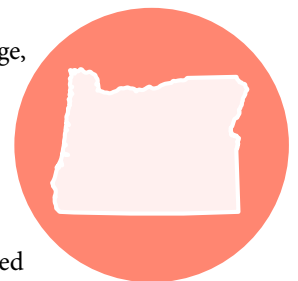
This article is about Oregon’s experience in moving toward a cloud-hosting/computing model for the ALERT IIS. We have not yet implemented this change, but we learned some lessons during our planning and preparation and wanted to share these experiences.

What do we mean when talking about cloud computing? This concept is still evolving, but in 2011, the National Institute of Standards and Technology defined cloud computing as: “a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction.” Some of the key features are: (1) there is still physical hardware somewhere; (2) pooling of shared computing resources; and (3) rapid elasticity to scale up or down relatively quickly to adjust to demand. These factors work together to promote high system availability.

Oregon is moving specifically toward a virtual server environment. In this environment, portions of much larger servers—or multiple smaller ones—are configured to appear as a single server. Our virtual network diagram will appear the same as our current hardware environment, even if the actual physical resources are very different.

The main benefits (perks) of a virtual server environment are: (1) easier expansion/contraction; (2) increased fault tolerance; (3) lower risk of end-of-life issues; (4) common environments in all application regions; (5) lower implementation costs; and (6) more robust disaster recovery possibilities. Some of these benefits can be achieved through a traditional hardware environment but generally at a greater cost for redundancy.

One drawback (peril) of a cloud option is higher ongoing hosting costs. However, these tend to break even with a traditional hardware solution when considering periodic hardware replacement in the latter model. Additional cloud drawbacks include: (1) you don’t own the servers, so it could be more costly if there is a



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need to change host providers or in the event of an unplanned exit; (2) control of back-end infrastructure is limited to the cloud vendor only, and there are limited customization options; (3) service level agreement (SLA) considerations; and (4) security considerations.

To address the last two drawbacks, Oregon developed a [Cloud Policy and Readiness Assessment tool](#) as part of the state's [cloud computing policy](#). The tool is a series of questions in 10 categories: (1) confidentiality; (2) business continuity, data integrity and exit strategy; (3) service management; (4) incident management; (5) intellectual property and licensing; (6) data ownership and rights; (7) public records management; (8) audits and controls; (9) change management; and (10) risk management and insurance. We have found this assessment very valuable for any type of IT system with only a few questions that were specific to a cloud environment and/or an external hosting solution. The tool has added a welcome amount of rigor in assessing and planning for how we manage various risks.

Finally, we ran into some procedural pitfalls in moving toward a cloud solution. The most significant is that there was higher scrutiny of the project due to the cloud solution. Additionally, we were trying to implement our solution while the state's cloud computing policy was being developed and implemented, and we also had to negotiate legislative-driven changes in Oregon's IT procurement process. Our environment changed rapidly, and we had to regroup, reassess and retarget our efforts multiple times during this process. In spite of these bumps in the road, in the end we still feel the benefits of a cloud-based hosting solution will be worth the extra effort up front. ■

– Submitted by Michael Day, Oregon Immunization Program

■ Wyoming's IIS is pivotal to the work of the immunization program, so most sessions highlighted functionality within Wyoming's IIS.

Wyoming Hosts 3rd Immunization Conference

The Wyoming Department of Health Immunization Unit recently concluded its third Wyoming Immunization Conference. Despite a snow storm, the conference was a great success attended by more than 150 health care professionals.

The 2017 Wyoming Immunization Conference once again focused on “Bringing Immunity to Every Community.” Partnering with 18 exhibitors and 2 sponsors, the Immunization Unit created an environment of learning and partnerships. Sending the message “this is our time,” Immunization Unit Manager Jude Alden challenged immunization partners to do more but also pledged to give more in the years to come.

Keynote speakers included the founder and national executive director of Meningitis Angels, Frankie Milley. Meningitis Angels is a national nonprofit organization that has become an international network of education, survivor communications, patient advocacy and support. Keynote speaker Diane Thieffoldt, co-founder and learning strategist at the Learning Café, presented on thriving within a five-generational workforce.

The immunization conference included a variety of sessions and introduced two new IIS modules and functionalities: an AFIX module within the IIS and a new vaccine order management system. Many of the other sessions highlighted Wyoming's IIS. One session introduced Wyoming's Mass Immunizations Module and use of 2D barcoding for adding patient demographics and vaccine inventory to the IIS. Another session highlighted IIS HL7 connections with providers to improve data quality and inventory management. Another session provided an overview of public vaccine programs and explored how the IIS plays a crucial role in program enrollment.

Wyoming is rescheduling several sessions due to inclement weather, including a session that will introduce the Wyoming IIS strategic plan and brainstorm future IIS functionality, existing tools and limitations, and solutions and IIS system enhancements.

Wyoming's IIS is pivotal to the work of the immunization program, so most sessions—even sessions on immunization schedules, forecasting, immunization exemptions, and program performance—highlighted functionality within Wyoming's IIS. IIS data are used heavily within the immunization program to monitor and improve best practices.

The Wyoming Immunization Unit's hard work and dedication will ensure success with Bringing Immunity to Every Community! ■

– Submitted by Jude Alden, Wyoming Department of Health

