

A new immunization information system: Introducing Arkansas WebIZ

BY JONATHAN D. SCHULTZ, HILDA DOUGLAS,
AND DIRK HASELOW, MD, PHD, MS

Immunization information systems (IIS) serve as a model for how information systems can provide large-scale benefits to public health.¹ With the continuous advances in technology, there is a renewed need for IIS to continue to identify, embrace, and adopt more advanced technology standards in order to ensure the improvement of data quality and availability.^{1,2} The Arkansas Department of Health (ADH) is developing a new IIS, named Arkansas WebIZ, to ensure that the state of Arkansas is equipped with these identified advanced technology standards. It will replace the current Immunization Network for Children (INC) as the statewide centralized repository of immunization information in Arkansas. Arkansas WebIZ will provide advances such as bi-directional, real-time data exchange, designed to not only meet the meaningful use requirements of today, but also be scalable enough to meet future requirements as well. Arkansas WebIZ will function as the data backbone of the ADH immunization program, serve as a resource for medical providers, and

support public health preparedness activities. In addition, it will use interoperable technology to improve the quality, safety, and efficiency of the health care system. It will also accommodate the projected increase in users and growth of immunization records contained in the system.

BACKGROUND

Arkansas' original immunization system was started in the 1980s and was known as the Arkansas Immunization Reporting System (AIRS). As required by Act 432 of 1995, ADH established a statewide immunization registry, the Arkansas Immunization Information System (IIS). The existing Arkansas Immunization Network for Children (INC) was launched in 2005. Based on a system capacity review of the INC in 2012, it was determined that it could not fulfill all responsibilities necessary for an IIS or adequately support an increase in demands such as that necessitated by Act 179 of 2011, requiring a life-span registry. A review funded by the Centers for Disease Control and Prevention (CDC) further determined that the effort to improve and modernize the INC would be more easily met through replacement rather than modifying or rebuilding the current system.

ARKANSAS WebIZ

The Arkansas Department of Health's Immunization Section has contracted with Envision Technology Partners, Inc. as the vendor working with ADH staff in the creation of this new system. Envision Technology Partners, Inc. has a proven track record for excellence with local, state, and international governments. Through a collaborative effort, staff members from Envision and ADH have created Arkansas WebIZ, a proven web-based IIS product scalable enough to support the large-volume statewide registry environment.

The Arkansas WebIZ application is organized into modules, allowing the user to perform specific functions. Every screen within the application contains a main menu that allows users to navigate directly to any of the modules associated with their user security profile. The immunization-related modules included in WebIZ are:

- **Home:** The main home page for the system is displayed directly after login. From here users can specify the provider and clinic for their session and review current news announcements.
- **Patients:** This module contains all features associated with managing a patient's record in the system, including:

- Comprehensive patient search algorithm
- Extensive demographic information
- Screens for viewing/recording consent-related information, system generated events, general patient notes, contraindications, and more

■ **Immunizations:** The immunizations module includes all features related to managing a patient’s immunization record and administering new vaccinations to a patient. Providers and users of the system will notice many of the same data points being captured, but Arkansas WebIZ, in an attempt to increase the validity of the data collected, has been loaded with a check code system to reduce data entry errors.

- Screens to allow a user to review a patient’s full immunization record, administer new vaccinations, and enter vaccinations to a patient
- A Comprehensive Recommender function that uses the fully customizable vaccination schedules (utilizing the current ACIP schedules), the patient’s age, and the patient’s vaccination history to generate a list of vaccines the patient should receive during the current visit as well as the next due date for any applicable future vaccines
- Several features designed to assist in vaccine de-duplication efforts and the consolidation of records from multiple providers into a single record for each patient
- Unique approach to workflow that allows the system to adapt to a wide variety of processes currently used when administering vaccines

■ **Inventory:** The inventory function tracks inventory levels using CDC/HL7-compliant vaccine codes. The system uses a straightforward “dose-based” inventory unit of measure and is fully integrated with the Vaccine Administration screens in the Vaccinations module so that users see only the applicable inventory for each vaccine. This module also uses a real-time, on-hand inventory approach that automatically updates inventory levels when an immunization is administered, new inventory is received, inventory is transferred between locations, or inventory adjustments are created.

■ **Reports:** Arkansas WebIZ contains a new reporting module to assist every level of user, from individual providers to clinics with multiple locations and even statewide authorities, to extract data from the system. Sample reports include:

- Patient-specific reports for generating an official vaccination record, immunization certificate for school entry, or administration worksheet
- Statistical reports that produce aggregate counts of immunizations administered
- Management reports that assess immunization rates and vaccination coverage levels, categorize VFC patient statistics, generate aggregate counts by insurance source, identify all patients affected by a vaccine recall, and produce a patient roster
- Reminder/recall reports for identifying patients who will be due for one or more vaccinations within a given time frame or who are overdue for a vaccination

WHAT TO EXPECT IN THE COMING MONTHS

The process of migrating to a new immunization information system is very complicated. Our goal, however, is for the external user to have adequate information, time, and training to become familiar with all the features of Arkansas WebIZ and to experience no additional stress. The most critical initial step for providers is to make sure that they are on the communications distribution list, which IIS staff will use to register users and provider locations in the new system and schedule training. To be added to the list, fax the following information to Jonathan Schultz, the Arkansas WebIZ project manager, at 501-671-1756: name, credentials, organization name, organization mailing address, role within the organization (e.g. “I manage vaccine inventory,” “I give immunizations,” etc.), telephone number, and email address. The Arkansas Department of Health welcomes inquiries via email or phone.

Jonathan D. Schultz is project manager of Arkansas WebIZ at the Arkansas Department of Health. Hilda Douglas is associate branch chief and immunizations program manager at ADH. Dirk Haselow, MD, PhD, MS, is state epidemiologist and medical director for communicable disease at ADH.

REFERENCES:

1. American Immunization Registry Association. *Immunization Information Systems: Keeping the Pace with Evolving Public Health Initiatives*. Washington, D.C.: AIRA Publishing, 2010.
2. Centers for Disease Control and Prevention. *About Immunization Information Systems*. 2012. Retrieved from <http://www.cdc.gov/vaccines/programs/iis/about.html>.