

Wisconsin's Immunization Registry

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Over the past several years, the United States, in partnership with state and world health agencies, has implemented an aggressive immunization program to diminish the impact of many debilitating and sometimes fatal childhood diseases.

According to information published by the Centers for Disease Control and Prevention (CDC), diphtheria,—a disease that killed more than 10,000 people each year in the 1920s—is rarely encountered these days, and even less likely to cause death.¹ Immunization programs have also eradicated or drastically reduced the incidence of other devastating diseases such as smallpox and polio.² Despite the inroads that health agencies have made in disease management and eradication, they must continue to encourage and monitor immunizations to ensure that the United States does not lose the gains it has already made in public health, and continue their efforts to eradicate communicable diseases.

According to the National Vaccine Advisory Committee's report, in July 1997, President Clinton applauded the success of the Childhood Immunization

Initiative, but issued a directive to the Department of Health and Human Services to create a system to maintain high immunization coverage in young children. President Clinton stated:

“Almost a million children under the age of two are missing one or more of their recommended shots still... We have to make sure that every child now is safe from every vaccine-preventable disease.... As parents move from place to place, they often leave their children's immunization records behind. Their new doctors often cannot get access to these records. So I'm directing Secretary Shalala to start working with the states on an integrated immunization registry system...it may have something to do with whether their children live or die. And we have to do it and do it right.”³

The President's directive launched the Initiative on Immunization Registries. Immunization registries are “confidential, population-based, computerized information systems that collect vaccination data about all children within a geographic area.”⁴ Since 1997, each of the 50 states and the District of Columbia has developed an immunization registry. However, the sophistication and effectiveness of each regis-

try varies from state to state.

Wisconsin statute §252.04(1) requires the Department of Health and Family Services (DHFS) to create and maintain a statewide immunization program to eliminate certain childhood diseases: mumps, measles, rubella, diphtheria, pertussis, poliomyelitis, tetanus and other diseases such as hepatitis B, varicella and Haemophilus that are specified by DHFS rule.

WIR

In May 2000, DHFS implemented the Wisconsin Immunization Registry (WIR), a computerized database that tracks immunizations given to children and adults throughout Wisconsin.

According to DHFS, 25% of children visit two or more health care professionals for childhood immunizations before their third birthday.⁵ A map produced by DHFS from the data in WIR shows the current locations of patients throughout Wisconsin who have received at least one immunization from the Dane County Health Department (Figure 1).⁵ The map underscores the importance of immunization monitoring, as population mobility without adequate and timely immunization could significantly increase the risk of the spread of diseases.

When DHFS implemented WIR in 2000, it used public health data to enter historical immunization records into the database, dating back

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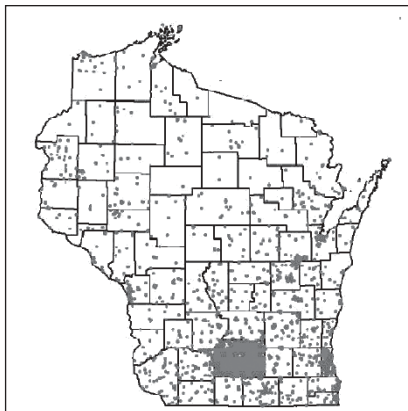


Figure 1. Patients in Wisconsin who have received at least one immunization from the Dane County Health Department.

to children born in 1995. The WIR database receives weekly automatic downloads of birth and death data directly from Wisconsin's vital record database. The WIR database is designed to store significant amounts of information and handle a high volume of user traffic. According to DHFS records, over 14,000 people are registered to use WIR with 2200 accessing the system each day. Approximately 6000 immunization inventory notations or historical immunizations are recorded into the system each day. The WIR database currently has over 3.2 million client records with over 22 million total recorded immunizations.

Over the past several years, the number of health care professionals using the WIR database has steadily increased. Approximately 952 health care professionals and 2463 schools currently use the WIR database. All schools are able to view immunization data through the use of the WIR system, and schools that administer vaccines on site are able to add data to WIR. The ability of schools to immediately verify that a child has received all required immunizations greatly reduces the likelihood that students will miss days of school because of a parent's inability to provide proof of immu-

nization. Moreover, direct access by schools is also likely to reduce the contacts that health care professionals must make to notify schools that children have received the immunizations required by Wisconsin law.

The WIR system offers a number of benefits to health care professionals. Physicians who have access to the WIR database are able to immediately access a patient's immunization history to determine whether the patient needs a particular immunization. Physicians are also able to use the WIR system to generate immunization reminder letters or reminder cards for patients. The reminder letters include the patient's immunization history, the recommended immunizations and due dates, and additional text added by the physician. WIR allows physicians to print reminder letters on the clinic's letterhead. The WIR system will also generate the reminders in Spanish, Hmong and Somali as well as English, thereby reducing the physician's need to hire interpreters for document translation. After immunizing patients, physicians are able to immediately enter the immunization information into the WIR database.

DHFS's records indicate that on average, health care professionals enter immunization data into WIR within 3.63 days of administering a vaccine. The system allows physicians to list the type of immunization given, the date of administration, the series, the trade name, contraindications and any reaction that the patient has to an immunization. Physicians may reproduce vaccine information statements in over 30 languages by linking to an immunization Web site directly from WIR. (Vaccine information sheets are published by the CDC and contain information about the risks and benefits of certain vac-

cines. Federal law requires the distribution of vaccine information sheets when certain immunizations are given.) Such Web links add to the ease of using WIR, as it is not necessary for users to exit the WIR system to obtain other immunization resources.

The WIR database allows physicians to manage an immunization inventory. A physician can customize his or her use of the WIR system to receive alerts when a vaccine is running low or is nearing its expiration date. The WIR system allows physicians to order vaccines for children on-line, directly from DHFS. The on-line order system provides ease of ordering, but does not generally result in a faster turnaround time for the receipt of vaccines. The WIR database allows physicians to obtain and print inventory reports that show the date, type, and amount of vaccine received into inventory, the quantity transferred, the amount expired, and the doses administered. Regular use of the immunization inventory management feature of WIR helps physicians ensure that appropriate quantities of immunizations are on hand at all times to effectively serve the needs of patients.

Prior to using WIR, a physician must receive training and sign a confidentiality and security agreement. DHFS staff provides training on all aspects of the WIR system. Training on the use of WIR generally takes approximately three hours for the typical user, but will take longer for an administrative user who has greater access rights to information in the database. DHFS structures its training in a "train the trainer" format, so that clinics can send an office manager or other staff person to obtain training that equips the manager or staff person to train the clinic's physicians and other health care professionals at a time that is most convenient for the health care

professionals. Once trained, a user can use the screen-specific on-line help to resolve questions that might arise when using the system. There is also a printable on-line user manual and technical support from the WIR help desk. There is no charge to physicians or clinics to receive training or to use the WIR database.

DHFS encourages physicians who administer immunizations to provide immunization information to WIR. Wisconsin and federal law appear to allow physicians and other health care professionals to provide immunization information to WIR. The HIPAA Privacy Rule at 45 CFR § 164.512(b)(1)(i) allows covered entities to disclose protected health information to a public health authority, such as DHFS, for its public health activities including the prevention and control of disease. Wisconsin Administrative Code § HFS 144.03(10)(b) allows health care professionals to release immunization information, without patient or parent consent, to health care professionals, including physicians, health care facilities, or local health departments that administer vaccines. Wisconsin Statute § 146.82(2)(a)5 allows health care professionals to release patient health care records, without patient or parental consent, in response to a written request by any federal or state governmental agency to perform a legally authorized function. DHFS is clearly authorized to perform functions that preserve the health of the public and eliminate and suppress diseases. Because Wisconsin Statute § 146.82(2)(a)5 is very broad, it would appear that any letter or other communication from DHFS to health care professionals, requesting that they release patient data to WIR would enable the health care professional to release the information without

the informed consent of his or her patients. Neither Wisconsin law nor federal law requires health care professionals to use the WIR system to record immunizations. WIR uses data encryption for all data going to and from WIR, which ensures the security of the data and satisfies the requirements of the HIPAA Security Rule.⁵

Physicians who have immunization records dating back many years can enter the information into the WIR database. There is no limit on the number of records or the age of records that can be entered into the WIR database. Some health care professionals download batches of immunization records into the WIR system, in either HL7 compliant interface or ASCII text file format. If medical records are not in electronic format, then health care professionals would have to enter each immunization record into the WIR database. The WIR staff is currently working with GE and EPIC to ensure compatibility between the WIR database and the electronic medical record systems marketed by those software vendors.

The Wisconsin Medical Society and many other organizations receive hundreds of telephone calls each year from patients who are attempting to find childhood immunization records. Patients are sometimes left without a means of obtaining childhood immunization records when physicians retire, leave the state, or die. The WIR database can ensure patient access to immunization information throughout the patient's lifetime. While patients do not have direct access to the WIR database yet, they can contact DHFS, a public health department, or a physician with access to the WIR system to obtain copies of immunization records. Most patients who receive copies of immunization records from DHFS have praised the system. However,

a few patients request that DHFS restrict access to their immunization records. In such cases, DHFS can limit WIR access of that record to health care professionals designated by the patient or it can lock a patient's immunization record so that no one outside of WIR and the public health department can view the information.

A Model for Other States

DHFS has developed its immunization registry in a manner that makes it a model for other states to follow. The WIR database satisfies the 12 minimum functional standards that the CDC developed, listed below.

1. Electronically store data on all NVAC-approved core data elements.
2. Establish a registry record within 6 weeks of birth for each newborn child born in the catchment area.
3. Enable access to and retrieval of immunization information in the registry at the time of encounter.
4. Receive and process immunization information within 1 month of vaccine administration.
5. Protect the confidentiality of health care information.
6. Ensure the security of health care information.
7. Exchange immunization records using Health Level 7 (HL7) standards.
8. Automatically determine the routine childhood immunization(s) needed, in compliance with current ACIP recommendations, when an individual presents for a scheduled immunization.
9. Automatically identify individuals due/late for immunization(s) to enable the production of reminder/recall notifications.
10. Automatically produce immunization coverage reports by providers, age groups, and geographic areas.

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11. Produce official immunization records.
 12. Promote accuracy and completeness of registry data.

DHFS recently won the Connect Award from the CDC for making significant progress toward establishing automated, real-time connections with other computerized health care information systems, including other immunization registries, the software systems of private and public health care professionals, and government information systems.

Physicians who are interested in registering for WIR training or who would like a demonstration of WIR may contact

the Immunization Program at 608.267.9493 or through the WIR help desk. Physicians may direct any technical questions about WIR to the WIR helpdesk by telephone at 608.266.9691, or by e-mail at wirhelp@dhfs.state.wi.us.

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