

School Nurses and Immunization Registries: A Partnership for Success

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Background

States have used many sources to populate immunization registries with historical immunization data. Despite their best efforts, a large percentage of immunization history data continues to reside in private provider records. Student health records for primary and high school students however, hold most of the same data.

While registry use has been endorsed by the American Academy of Pediatrics, providers are hesitant to add data entry workload to their staff.¹ Many providers still refuse to pay the cost to electronically pass data from their system to the registry. States have had limited success finding funding to cover this cost for the provider. For the busiest practices who give the most vaccine, direct data entry into immunization registry software is not practical.

Retrieval of quality data to populate immunization registries has also been an issue. Data from provider billing systems can be inaccurate when vaccine-billing dates versus vaccine-administration dates are entered. Data can be inaccurate when the wrong CPT code is assigned to the vaccine. Clerical staffs that are unfamiliar with the recommended vaccine schedule are unable to question the validity of the assigned CPT code; thus, charges may not be rendered for vaccine provided by the Vaccine for Children's Program (VFC). Consequently, they do not appear in billing system data unless a zero charge or a unique CPT code has been created.

President Bush's June 2004 initiative to improve

health care through Health Information Technology (HIT) and move to electronic medical records has resulted in many states passing bills supporting the exchange of medical information through HIT. Many professional medical organizations are also endorsing the use of Electronic Health Record (EHR) systems. This is significant to registries because health care personnel enter immunization data into these systems making data more likely to be accurate.

Providers are converting or seriously looking at purchasing EHR systems for their offices but using the data to impact patient outcomes has been slower than anticipated. An article from the Washington Post dated October 12, 2006, indicated that, "One in four physicians use some form of EHR but fewer than 1 in 10 use records to help make treatment decisions."² Research funded by the Robert Wood Johnson Foundation attributed the slow adoption rates to the system's expense, the initial disruption they cause to office workflow, and a required change in the way business is conducted. They also found that doctors practicing alone or with one other doctor accounts for half of all doctors practicing in the United States were much less likely to use the EHR. Thus, this does not appear to be a readily available source of data.

Early in immunization registry development, schools were looked to as a source for immunization data but were found to be unreliable when non-clinical staff entered data into the registry from paper files. Like other non-medical personnel, school clerical staff

¹ "Immunization Information Systems - Committee on Practice and Ambulatory Medicine," *Pediatrics* 2006 Volume 118: p.1293-1295.

² Lee, Christopher. "Doctors Slow to Adopt E-Records for Patients." *The Washington Post*; Oct 12, 2006: Section A, p10.

could not interpret the immunization schedule and therefore, could not question erroneous dates or illegible dates that were subject to interpretation. Most schools have long since abandoned paper records for an electronic school health record. Currently, data entry into these systems is frequently completed by the school nurse or a school health aide who is managed by the school nurse for each student that attends their school. This is generally true for both public and private schools. The volume of data that schools possess is still a valid reason to consider them an important partner for immunization registries.

Examining the Facts about Schools

According to the 2005 Census, 27.8% of US citizens are 5–19 years old. That accounts for 59,982,652 immunization records.³ The National Center for Health Statistics documented in 2005 that more than 9 out of every 10 students, kindergarten through 12 (48 million), attended public schools. In contrast, about six million U.S. students are enrolled in K-12 private schools. Projections for 2014 raise this total to 49,993,000 in public schools and another 6,695,000 in private schools.⁴

All 50 states have enacted school vaccination laws that require children who attend public or private schools to be vaccinated for several communicable diseases. Since their inception, it is undeniable that school vaccination requirements have dramatically reduced the number of cases of vaccine-preventable disease. Vaccines required for school entry vary from state-to-state. Vaccination laws allow exemptions for medical and religious reasons. Some states also include philosophical reasons as valid exemptions. Failure to vaccinate can result in a child's exclusion from school, civil fines and criminal penalties against parents or guardians,

and other measures (e.g., the closure of a school).⁵

One of the national health objectives for 2010 is to achieve and sustain $\geq 95\%$ vaccination coverage among children in kindergarten through first grade for Hepatitis B, Diphtheria, Tetanus, Pertussis (DTP/DTaP/DT), polio, measles, mumps, and rubella (MMR) and varicella vaccines. The Centers for Disease Control and Prevention (CDC) reports coverage for each vaccine has exceeded 95% in more than half of the states for the 2005-06 school year.⁶

Parents or guardians must provide proof of vaccinations for students entering school for the first time. This includes those entering kindergarten/first grade as well as students new to the school corporation. Some states require vaccination histories to be documented on an official school certificate and only that form is acceptable for school entry. These data become part of the student health history and ultimately their student profile. Schools are required to report this information to their state department of health and the CDC. In some states, daycare providers must also monitor and report immunization status for children who attend their centers.

Paper forms made tracking and transferring student information between schools cumbersome. Now, most schools have ample computer technology available to students, administration, and school nurses. School software programs have evolved over time to include those developed by internal information technology staff to off-the-shelf products dedicated to schools. Some school programs are comprehensive and include a school health module. Dedicated school health programs are sometimes used that may or may not integrate with the main student information management system.

The National Association of School Nurses (NASN) recommends minimum ratios of one

³ *United States Census Bureau*. July 1, 2006. Population estimates. Retrieved October 2006 from <<http://www.census.gov/popest/national/asrh/NC-EST2005>>.

⁴ *Digest of Education Statistics 2005*. June 2006. U.S. Department of Education, National Center for Education Statistics. Retrieved October 2006 from <<http://nces.ed.gov/programs/digest/d05/lt2.asp#7>>.

⁵ "National Conference of State Legislative Report." Volume 27 (August 2002) No. 14. Retrieved November 2006 from <<http://www.ncsl.org>>.

⁶ *Morbidity and Mortality Weekly Report*. July 29, 2005. Centers for Disease Control and Prevention. Volume 54 (July 29, 2005) No. RR08. Retrieved October 2006 from <<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5408a1.htm>>.

nurse to 750 students in the general population.⁷ In fact, this ratio varies based on the resources made available to the school district/corporation by their board of directors. As such, school nurses do not universally enter data into these systems. The requirement to annually document and report student immunization data does not change regardless of their school nurse coverage, making a registry a critical tool in these situations.

School Nurses and their Role in Registry

NASN supports the development of an immunization registry in each state and view them as “an avenue to help sustain high immunization rates and low disease levels through efficient immunization information management.” Their position statement cites immunization registries as “important tools to facilitate immunization compliance” and “help prevent duplication of vaccinations when records have been lost or misplaced.”⁸

Schools are responsible to report their student immunization coverage information to their state’s department of health within 8-10 weeks after the opening of the academic school year. Anecdotally, we know that school nurses and other personnel spend many hours retrieving this information. The results of a 1999 study conducted in a school district in Wausau County, Wisconsin documented their findings. The May 2003 NASN Newsletter article cited this study saying that nurses estimated spending 56 hours sending immunization cards to parents, 90 hours entering immunization history reported by parents into their own system, 25 hours filing cards, 95 hours generating non-compliance letters to parents, and 30 hours calling immunization providers to attain records. The school district had a database for immunizations; however, it was not linked with the health care providers in the area. In the fall of 2000, Wausau began a pilot project to integrate the student records with the local immunization registry called the Regional Early Childhood

Immunization Network (RECIN). Before integrating the two systems, school personnel had to call student’s providers to track down the records, and then enter them into the school system’s database. Reports that are required soon after school starts were reduced from days to a few minutes using RECIN. The 95-hour task of generating non-compliance letters was reduced to one hour. Additionally, they discovered that many children had the correct number of immunizations, but many were invalid doses according to the recommended immunization schedule and time intervals for vaccines. Previously, interval errors were not caught by manual review of the records.⁹

The American Academy of Pediatrics policy statement on immunization information systems projects that \$168 million is spent on immunization assessment activities for entry in school, childcare, and Head Start programs. It also projects that \$58 million is spent on manual pulling of records for all children entering kindergarten.¹⁰ Schools are frequently the source of immunization records for parents and graduates when they cannot be found in other health care facilities. Schools, too, spend time pulling, faxing, and mailing immunization records on a regular basis. In a private provider’s office, the cost to manually pull a patient chart for immunization information is estimated at \$14.70 per chart.¹¹

Although it varies from state-to-state, the funding that school corporations receive from their state is impacted by the number of children who are adequately immunized. State Medicaid programs are frequently the ultimate source of this funding. As a result, school administrators have a vested interest in improving immunization coverage rates.

⁷ “Position Statement: Caseload Assignments.” *National Association of School Nurses*. June 2006. Retrieved November 2006 from <http://www.nasn.org/Default.aspx?tabid=209>.

⁸ “Position Statement: Immunizations.” *National Association of School Nurses*. June 2006. Retrieved November 2006 from <http://www.nasn.org/Default.aspx?tabid=225>.

⁹ “Linking to Schools: What Benefits Can Schools Expect to Receive from Using Immunization Information Systems?” *Every Child By Two*. 2006. Retrieved October 2006 from <http://www.ecbt.org/registries/schools.cfm>.

¹⁰ “Policy Statement: Immunization Information Systems” *American Academy of Pediatrics*. June 1, 1996, Retrieved November 2006 from <http://aappolicy.aappublications.org/cgi/content/full/pediatrics;118/3/1293>.

¹¹ McKenna VB, Sager A, Gunn JE, Tormey P, Barry MA. “Immunization registries: costs and savings.” *Public Health Report*. Volume 117 (2002) pgs. 386 –392.

Schools Using Registry Data: Outcomes

The School Health Services for the Multnomah County Education Service District, Oregon, oversees health care for 89,285 children. In their 2005-2006 annual report, they identified that 7,278 students' records needed additional vaccinations. Subsequently they researched the deficient records through the statewide ALERT Immunization Registry website. Using ALERT, they found 2,737 (37.6%) records with additional information and of those records, 1,411 (52%) were "complete" for school attendance with no further vaccines required.¹²

During the 2001-2002 school year, immunization program staff and school nurses used the Washington DC registry to ensure that local schools were in compliance with school entry vaccination requirements. Daily, weekly, and monthly reports were generated to track compliance, monitor vaccine inventory needs, and identify pockets of children with low vaccination coverage within Washington DC for further outreach efforts. In the 2000 school year, 55,000 students were out of compliance with the school district immunization requirements. The registry was used to identify approximately 20,000 children who were not vaccinated properly according to school vaccination requirements (CDC, unpublished data, 2002). Data from the immunization registry suggested that a high percentage of the students that were enrolled in Medicaid were not in compliance. As a result cooperative agreements were established between the school corporation and three Medicaid Managed Care Organizations to re-direct students back to their medical home and improve immunization coverage rates. Currently, only 2,100 students (95% compliance rate) were found to be deficient.¹³

A 2005 presentation by the Arizona Statewide Immunization Information System (ASIIS)

discussed their experience with giving school nurses access to their statewide immunization registry. Fifteen hundred nurses are using their registry throughout the state. Suzanne Boyd, MS, RN of the Tucson Unified School District said, "The first time I used the ASIIS website, I resolved 37 student immunization issues. That meant students whose school registrations were not delayed because of problems with their immunization record. With a daily enrollment of over 750, I can use all the help I can get!"¹⁴

These examples demonstrate the value school nurses have derived from using the immunization data contained in state and local immunization registries. Other issues arise when contributing school health data, i.e., the immunization record to a state or local registry. Like private provider offices, there is potential for duplicative data entry. Privacy issues on the other hand are not dictated by the Health Insurance Portability and Accountability Act (HIPAA), but rather one that covers the student health record which includes health data.

Family Educational Rights and Privacy Act

The Federal Education Reform Privacy Act (FERPA)¹⁵ protects the sharing of student information. It specifies that information on the student record can be shared between schools when the student moves to other facilities. No student health data can be shared without parental consent. FERPA is clear that any release of immunization information from the student record requires parental consent until the student turns 18 years old. Therefore, any release of student immunization information to a statewide immunization registry requires parental consent. Schools generally add language to their overall student consent which is secured at the beginning of the academic year to cover this requirement.

¹² "Connecting Health and Education: Annual Report 2005-2006." School Health Services. Department of School Health Service District, Multnomah Education Service District. Oregon. 2003.

¹³ "Annual Report 2002." Office of School Health Programs. District of Columbia Public Schools. 2003. Retrieved October 2006 from <http://www.dccouncil.washington.dc.us/catania/Committee/Appendix%2013%20-%20Health%20Plus%20revised%20012306.doc>.

¹⁴ "Using Registries to Improve and Sustain Community Immunization Rates." Academy of Educational Development. *Immunization Coalition Assistance Center*. July 12, 2005. Retrieved October 2006 from <http://www.izcoalitionsta.org/pdf/AED%20-%20Registries%20CORRECT%20VERSION.pdf>.

¹⁵ "Issues Brief: Privacy Standards for Student Health Records." *National Association of School Nurses*. 2004. Retrieved November 2006 from <http://www.nasn.org/Default.aspx?tabid=277>.

Some state Attorney Generals have interpreted state immunization registry law to supersede FERPA and allow schools to send data to the state immunization registry. Still other states are passing legislation that mandates use of the state immunization registry as the only school immunization-reporting tool. In the 2006 -2007 academic year, all schools are mandated to enter data into Louisiana's state registry, the Louisiana Immunization Network for Kids Statewide (LINKS).

School Nurses Adding Data to Registries: Outcomes

Traditionally, schools have allowed school nurses "view-only" access to their statewide immunization registry. States are beginning to view school health records as a credible source of immunization data. New Mexico launched their state immunization information system in 2006. When composing their state registry law, New Mexico chose to include school nurses into their definition of a provider who may participate in their registry. The New Mexico Statewide Immunization Information System (NMSIIS) is working on an electronic interface to allow the Albuquerque Public School (APS) system, the largest school system in New Mexico, to transfer data from their *School Max* system to NMSIIS. The system holds immunization information on 89,309 active students and many more historical files. Data is entered into the *School Max* system by the school nurse or school nurse aide. There are eight school-based health centers in the APS that also administer vaccine to students and others who are patients at the center.

Kentucky, who has not yet launched their immunization registry, has also included school nurses as providers and full participants in their state immunization registry law.

LINKS began to allow school nurses to add data to their system in 2005 after implementing a module to their system, specifically for use by school nurses. This module distinguishes data that originated from schools versus data submitted by providers or other authorized LINKS users. The module allows schools to automatically calculate their required state compliance report and other reports. School nurses voluntarily enter data into LINKS and their school software programs. Although double data entry is required, school nurses have

seen the value of using LINKS to find immunization records they need and compile their state reports. LINKS is working with the software vendor for 42-parish school systems on a bi-directional data exchange. Since allowing school nurses to add data to LINKS in March 2005, 277,782 new immunizations have been included in LINKS.

In addition to elementary and high school nurses, college student health centers are an important group of users for immunization registries. State sponsored colleges and universities largely attract in-state students making the registry a valuable tool for their health centers. Some schools use immunization registries in lieu of an employee health system to track immunization coverage. Web-based immunization registries sometimes allow the employee health nurses or physicians to manage incidents that occur during non-traditional hours to be managed by phone from home.

Immunization registry tools provide nurses with the ability to create reports that school-based systems may not provide. In addition to the information they are mandated to report, registries can query the system for data for very specific information like geographic location, age groups, or coverage specific to vaccines, etc. These reporting parameters are necessary in emergent situations. Following guidelines set by the CDC, statewide registries must demonstrate security protocols are in place to prevent data loss.

Disease Surveillance and Outbreak Management

Schools now play an important part in state planning for the management of Pandemic Influenza and other bioterrorism management exercises. Disease outbreak on a college campus with dormitory living is not uncommon. A centralized source of immunization data provided in the state immunization registry help staff identify un-immunized students, family members, and others who potentially came in close contact with an infected student.

We know from the Katrina disaster in Louisiana that the LINKS registry was useful to other state public health entities and schools where the evacuees sought shelter and alternative residence. Access to LINKS data saved children

and adults many unnecessary doses of vaccine simply due to lost immunization history records. States were able to query LINKS by an individual patient and transfer data into their own registry when appropriate.

Parents frequently seek information from the school because schools are a familiar entity and geographically convenient. Likewise, schools were the first to encounter children who evacuated as a result of Katrina and served as the referral source to health care services for families. In some cases, health care was also provided in the school setting.

The Future is Now

School-based health centers are gaining popularity in the most underserved communities. Schools are geographically close to the student's household making it an attractive and highly recognizable site for health care. Many school-based health care centers are Federally Qualified Health Centers (FQHC) which qualifies them to participate in both the VFC and 317 vaccine programs. The 317 program allows free vaccine to be given to the underinsured.

It is time to re-examine school nurses and their systems as a credible source of immunization information and a group who can impact immunization coverage rates. NASN's position statement on immunization says, "Professional school nurses practice in an ideal setting in which to educate families regarding the indications, contraindications, side effects, and timeliness of initial and booster doses of vaccines. As the primary health professional in schools, professional school nurses have opportunities to counsel families regarding immunizations throughout the lifespan. Immunization registries are important tools to facilitate immunization compliance, and they help prevent duplication of vaccinations when records have been lost or misplaced."¹⁶

School nurse data is a quick way to populate an immunization registry with data for school-aged children. To date, registries have assisted school nurses to find missing data on students and save

the administration of many unnecessary vaccines.

There are approximately 45,000 nurses working in schools across the United States. With the creation of many new vaccines, adolescent immunizations have again appeared on the recommended immunization schedule. Though school nurses need only comply with the vaccines mandated for school entry, they can educate families on the recommended immunization schedule and the value of the additional vaccinations.

Consider the impact that school nurses could have on improving immunization coverage in children with the assistance of an immunization registry. School nurses spend many wasted hours tracking immunization records that could be better used in vaccine education and immunization outreach efforts to students' parents regarding immunizations for the school-aged child and the student's younger siblings who may be under-immunized. Immunization coverage rates for 2 year olds are still under the 2010 goals and every opportunity to reach this population will need to be used to reach this target.

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¹⁶ "Position Statement: Immunizations." *National Association of School Nurses*. June 2006. Retrieved November 2006 from <<http://www.nasn.org/Default.aspx?tabid=225>>.