

SNAPSHOTS

Immunization registry news from the American Immunization Registry Association (AIRA)

Welcome to SnapShots, the American Immunization Registry Association's newsletter about the progress, best practices, and accomplishments of immunization registries across the country. We invite you to share news about your registry. Email us at aira@immregistries.org or call us at (212) 676-2325 with information about a successful programmatic or technical innovation, major accomplishment, or milestone that your registry has reached. SnapShots is sent to subscribers quarterly and posted on AIRA's web site: www.immregistries.org.

This issue of SnapShots is dedicated to the memory of Geoffrey Seltzer, husband of long-time AIRA member and Education Committee Chair, Katie Reed. The AIRA Staff, Board of Directors, and membership extend their condolences.

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President's Report

In this issue of SnapShots we focus on data use—ways in which we can translate data into information, then into knowledge, and finally into effective decision making. This is, after all, the *raison e' trete* of immunization registries—the reason for their being, the reason for which we built them.

More and more it is becoming common wisdom that we need not wait until we believe our saturation levels are high enough before the data can be useful and meaningful to others; that we need to find as many ways as possible to use the data we currently have. As I've seen many times this past year in particular, digging into your data—exploring as many questions as you can dream up—is an amazingly effective approach for improving data quality. Only through use do you discover the holes, the duplicates, the errors, the fall-offs in reporting ... and the goldmines.

As you read through the articles below, challenge yourself to identify at least three new ways to look at your data. Then do it. Don't wait. Chances are your reports will lead to other questions, other ways to look at the data. That's the nature of data—it leads to as many questions as answers. And in the process, you will have brought your registry to a new level of life and utility. That's the way it should be. That's why we built them.

On a related note, you may have noticed that the term *Immunization Information Systems*, or IIS, is increasingly used in place of immunization registries. The main reason is that *immunization information systems* better captures and conveys registries as a tool for managing a two-way flow of information; in other words, IISs are a lot more than one-way, dead end streets for data reporting.

You will notice that AIRA has added the by-line “Immunization Information Systems for a New Era” to its logo. It's a small but telling symbol of how AIRA keeps up with the dynamic changes in our field. The one constant is AIRA's commitment to be an effective and proactive resource for its members and the registry community as a whole.

PROW Exemplifies Effective Data Use

By now, you're likely familiar with PROW—strategies for using your registry to support other components of your immunization project (www.immregistries.org/about/GET_PROW.phtml). But you may not have realized that much of PROW is really a collection of best practices around data use.

Consider these examples:

- Perinatal Hepatitis B staff use the registry to monitor HBV completion among children born to HepB positive moms and among their household contacts.
- Disease investigators rely on the registry for immunization histories, rather than paging through medical records at one or more clinics for each person being followed. Relying on the registry actually helps protect individual confidentiality!
- Generating coverage level reports by antigen and dose in series gives assessment staff a much more detailed look at the contributing factors to current overall coverage levels. By targeting specific vaccines and/or doses, such as varicella or fourth dose of DTaP, a program can more cost-effectively use its resources to raise coverage levels.
- Provider quality assurance staff can use registry data as part of professional education and AFIX visits. By identifying common issues in vaccine administration and/or documentation, educational measures can be targeted in concrete and specific ways. Common examples are: confusing Td with DT, giving the third dose of Pediarix too early, not following the complex age and interval requirements of HBV vaccine, and giving the first dose of MMR too early.

We invite you to see for yourself how the PROW *Standards of Excellence* can point the way to improved use of your data. Perhaps it's time for you to *GET PROW?!*

Submitted by Bill Brand (MN), AIRA President

Michigan's Use of Immunization Registry Data in Pertussis Case Investigations

Pertussis cases more than double in 2003 from 2002

A provisional total of 137 pertussis cases were reported in Michigan in 2003, more than twice the number in 2002. About one-third of cases occurred in infants less than 1 year of age, and another third of cases occurred in adults. All age groups saw an increase in the number of cases from 2002.

The focus and highest priority for public health control efforts should be on preventing transmission to infants by:

1. on-time vaccination of infants with DTaP, and
2. antibiotic prophylaxis for infected or potentially infected persons to prevent transmission to infants.

In Michigan, public health nurses are using the Michigan Childhood Immunization Registry (MCIR) as a tool to help with the case investigations. When there is a suspected case of pertussis, clinicians must notify their local health department. Clinicians and local public health nurses have used the MCIR to assess the immunization status of the patient and other contacts in the family. Recently, a public health nurse had a potential pertussis case call on the weekend. She was able to look up the patient's and the siblings' immunization record via the web from her home, before making the site visit to the patient. This saved her time from traveling to the health department and looking through paper files. All the documentation was in the registry and she could proceed with her case investigation.

The reasons for the upswing in cases in Michigan in 2003 are not clear. Several other states have also reported an increase in 2003. Pertussis occurs in cycles with peaks of disease every 3-4 years. Nationally, more than 9,000 cases and 22 deaths from pertussis were reported to CDC in 2002, a peak year. Vaccine-induced immunity wanes over 5-10 years, resulting in increasing susceptibility among persons > 10 years of age. Outbreaks of pertussis occur on a regular basis among populations that have an increasing number of susceptible persons, usually the very young, the unvaccinated, and older children and adults with waning vaccine-induced immunity. Undoubtedly, many cases among adolescents and adults are not recognized.

Submitted by Therese Hoyle (MI), AIRA President-Elect

Identification and Recall of Children With Chronic Medical Conditions for Influenza Vaccination (*abstract from Pediatrics, Vol. 113 No. 1 January 2004*)

Objectives: Despite long-standing recommendations to provide annual influenza vaccination to children with chronic medical conditions, immunization rates are <10% in most primary care settings. Many obstacles impede implementation of these recommendations, including the challenge of identifying targeted children and the need to immunize yearly in a short time interval. The objective of this study was to assess the accuracy of billing data for identifying children who have high-risk conditions (HRCs) and need influenza vaccination and 2) to evaluate the efficacy of reminder/recall for children with HRCs.

Methods: The study was conducted in 4 private pediatric practices in metropolitan Denver, Colorado, that share a computerized billing system and also participate in an immunization registry. For all children aged 6 to 72 months, registry records were linked with the billing database. Patients with ≥ 1 encounter for an HRC in the previous 24 months were selected, with HRCs identified from International Classification of Diseases, Ninth Revision, Clinical Modification diagnostic codes. Using medical records as the "gold standard," we reviewed 327 randomly selected records to determine the sensitivity, specificity, and accuracy of billing data for identifying HRCs. For children with an HRC, we then conducted a randomized, controlled trial of reminder/recall for influenza vaccination. The primary outcome of the recall trial was receipt of influenza vaccine.

Results: Billing data had a sensitivity of 72% (95% confidence interval [CI]: 48%–95%), specificity of 95% (95% CI: 90%–100%), and overall accuracy of 90% (95% CI: 84%–96%) in determining which children had an HRC. Of the 17 273 patients aged 6 to 72 months, 2007 had ≥ 1 HRCs (12% overall; range: 9%–14% per practice). Asthma/reactive airways disease accounted for 87% of all HRCs. Reminder/recall significantly increased influenza immunization in children with HRCs, with a vaccination rate of 42% in those recalled, compared with 25% in control subjects. Recalled subjects were more likely

to have an office visit (68% vs 60%) and less likely to have a missed opportunity to immunize (28% vs 37%) compared with control subjects.

Conclusions: Diagnosis-based billing data accurately identified children who had HRCs and needed annual influenza vaccination, and registry-driven reminder/recall significantly increased influenza immunization in targeted children.

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Full article: Pediatrics Vol. 113 No. 1 January 2004, pp. e26-e33, available at <http://pediatrics.aappublications.org/cgi/content/full/113/1/e26>

Submitted by Kellyn Pearson (CO)

Four Case Studies from Oregon: Registry Data Use to Support and Influence Public Health

➤ Monitor the Impact of Changes in ACIP Recommendations

Background: On July 8, 1999, the American Academy of Pediatrics (AAP) and the U.S. Public Health Service (PHS) jointly recommended reducing infant exposure to Thimerosal, a vaccine preservative that contains mercury. Recommendations were made to postpone the first hepatitis B vaccine dose until 2-6 months of age for infants born to hepatitis B surface antigen (HBsAg)-negative women. CDC conducted assessments of the impact of these policy changes on hepatitis B vaccination practices in Wisconsin, Oklahoma, Oregon, and Michigan.

Objective: Use registry data to rapidly monitor the impact of changes in administration of birth dose of Hep B.

Data Methods: Extracted registry data for children born for each week during 1999. Talled the number of Hep B doses given within 5 days after birth [presumptive hospital dose] and number of first Hep B doses given within 56 days of birth [presumptive first dose other than hospital dose]. Created timescale graph.

Data Quality: Deduplicated all child records and eliminated any duplicate doses. For this analysis, the registry should have a high data capture for the birth dose.

Results: Demonstrated the dramatic impact of the ACIP schedule change. Oregon used the data to encourage providers and health plans to re-institute the birth dose. Data revealed a resumption of the birth dose once preservative-free doses were available through the VFC program.

Publications: MMWR February 16, 2001 /50(06); 94

Hepatitis Control Report, Summer 2000, Volume 5, Number 2

➤ Support Disease Surveillance Activities

Background: In late 2001, Oregon experienced an outbreak of chicken pox in a local school. Health investigators were surprised to find an outbreak of chickenpox in a school in which 97 percent of students had already had the disease or had been vaccinated.

Objective: The registry assisted Communicable Disease (CD) staff with record search including any recorded history of Varicella disease in the registry. The purpose of the study was to determine the rate of

Varicella vaccination and effectiveness and risk factors for breakthrough disease.

Data Methods: Use registry data for the cohort analysis. Each age cohort is analyzed at the same specific point in time (e.g., 2/04). There were over 200K records in the combined cohorts for Oregon, so this type of analysis typically requires a high data volume.

Data Quality: Registries need thorough deduplication and elimination of duplicate shots to ensure valid denominators and numerators for rates.

Results: The rolling cohort data is very useful to public health officials. They request updates on a quarterly basis.

➤ **Measure the Impact of Vaccine Shortages**

Background: Between 1993 and 2002, Oregon had an average of 85 cases of Pertussis per year. In 2002, however, there were 193 reported cases, and in 2003 there were over 400 reported cases. This is consistent with an upsurge of disease in other parts of the county.

Objectives: (1) Use registry data to track the impact of the DTaP shortages for children ages 19 through 35 months of age; (2) Use registry data to determine the history of DTaP doses administered at the time of Pertussis disease onset; (3) Use the registry to help prevent further disease outbreaks through registry recall notices and a public education campaign.

Data Methods: Use registry data for the cohort analysis for ages 19 through 35 months. Each age cohort is analyzed at the same specific point in time (e.g., 2/04). Use registry Recall and Reminder system for special recalls.

Data Quality: Deduplicate all child records. Focus special effort on duplicate DTaP doses, and eliminate any doses reports within 20 days.

Results: The registry successfully tracked trends in DTaP immunization status, supported disease investigation efforts, and recalled children in an outbreak region as part of a disease prevention strategy.

➤ **Monitor Patterns of Simultaneous Dose Administration**

Background: Following a Varicella study, communicable disease specialists wanted to know the pattern of dose administration and if Varicella and MMR were given at the same time. There was some discussion that doses of Varicella given after 15 months of age could have greater long-term efficacy.

Objective: Determine the pattern of MMR and Varicella doses administered for all children born after January 2000.

Data Methods: Extract data for a specific age range and count the number of children for each antigen by age. Count the number of doses for multiple antigens given on the same day.

Data Quality: Deduplicate child records and clean any duplicate doses. This type of analysis does not require as much data preparation, as it is based on counts and not rates.

Results: The registry data revealed that most Varicella doses are administered with MMR in the 13-15 month age range. Any schedule change could have an adverse impact on the early administration of both vaccines.

These case studies were submitted by Barbara Canavan (OR), Chair, AIRA Technical Committee

Vaccine Safety and Registries Community Workgroup Solicits Feedback on Recommendations for Immunization Information Systems and Vaccine Adverse Event Reporting System

The Vaccine Safety and Registries Committee (VASREC) Workgroup is sponsored by AIRA. It involves CDC, state and private registries/IIS and other partners. The VASREC Workgroup is soliciting reviews and comments of its recommendations captured in the document *Immunization Information System (IIS) – Vaccine Adverse Event Reporting System (VAERS) Collaboration for Vaccine Adverse Event Reporting*. The document is posted on the AIRA website at http://www.immregistries.org/docs/IIS-VAERS_Coll_Desc_06-25-2004_v2.doc. It provides a consensus-based description of activities and flows of information involving IIS data reporting to VAERS and is purposely technology neutral and written at the business/functional level. If you have comments or questions, please e-mail the VASREC Workgroup Chair, Warren Williams at wwilliams@cdc.gov.

Upcoming Conferences

Health Information Technology Summit West

Sunday, March 6 to Tuesday, March 8

www.hitsummit.com

39th National Immunization Conference

Monday, March 21 to Thursday, March 24

<http://www.cdc.gov/nip/nic>

America's Health Insurance Plans' (AHIP) Institute (annual conference)

Wednesday, June 8 to Friday, June 10

<http://www.ahip.org/links/institute2005>

National Association of School Nurses (NASN) Conference

Thursday, June 30 to Sunday, July 3

<http://www.nasn.org/conference/conference.htm>

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