

Immunization rates climb when pediatricians have easy access to vaccination records

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Exchange of immunization data between a centralized city immunization registry and provider electronic health records led to significant improvements in pediatric immunization coverage, a reduction in over-immunization for adolescents, and increased completeness of immunization records, according to a study conducted at Columbia University's Mailman School of Public Health, Columbia University Medical Center, New York-Presbyterian, and the New York City Department of Health and Mental Hygiene's Citywide Immunization Registry. Researchers compared the percent of children who were up-to-date for their age-appropriate immunizations and those who received extra, unnecessary immunizations before and after the implementation of two-way data exchange at point of care.

Up-to-date vaccination rates increased from 75 percent to 82 percent and were significant for all age groups. Findings are published online in the journal *Pediatrics*.

"Recent outbreaks of vaccine-preventable diseases underscores the importance that patients are fully immunized by receiving all recommended vaccines," said Melissa Stockwell, MD, MPH, associate professor of Population and Family Health at the Mailman School of Public Health and associate professor of Pediatrics at the Medical Center. "However, only 72 percent of young children in the U.S. have completed their primary immunization series, and evidence suggests that 10 percent to 20 percent of young children receive at least one unnecessary, extra immunization."

Immunization registries, also known as immunization information systems (IIS), collect and centralize immunization data for children and adolescents from immunization providers at the regional or state level. Over 86 percent of all U.S. children younger than 6 years have immunizations recorded in the registry—now implemented in nearly all 50 states, five cities, and the District of Columbia. However, until recently, clinicians wanting to access patient immunization information in the system generally had to manually look up the patient data on a state or local IIS website. The New York Citywide Immunization Registry was one of the first registries in the United States to allow clinicians to download immunization information into their local electronic health record, and NewYork-Presbyterian was the first user of this service.

The Columbia researchers examined data from five practices in the NewYork-Presbyterian Ambulatory Care Network which is integrated with the hospital's local immunization registry, called EzVac. Stockwell's analyses focused on children ages 19 to 35 months, 7 to 10 years, and 13 to 17 years, reflecting the target assessment ages for the primary immunization series, school-age boosters, and adolescent immunizations.

With implementation of the IIS-to-EHR, or electronic health record, information exchange—immunizations for the series of vaccines increased significantly for all age groups. (Vaccines included those against diphtheria, tetanus, and pertussis; polio; measles, mumps and rubella [MMR]; Haemophilus influenzae type b; hepatitis B; chickenpox; pneumonia, human papilloma virus (HPV), and meningococcus.) Over-immunization decreased significantly for adolescents. HPV was the most common immunization with extra doses.

"One potential explanation as to why immunization data exchange increased coverage is that prior to taking action to address missing immunizations a clinician, who may be unsure if the immunization is

really missing, may opt to wait for a family to return with a paper immunization record rather than vaccinate," noted Stockwell, who is also a pediatrician at NewYork-Presbyterian. "While parent-held immunization records are valuable, parents may not always remember to bring them to every care visit, underscoring the importance of having immunization information readily available in the online registry in a way that is easy to access at point of care."

"Our findings demonstrated that data exchange can improve child and adolescent immunization status, allowing scarce resources to be targeted to those who are truly under-immunized," added Stockwell, "It is important to promote further development of the technology to support bidirectional immunization exchange as well as continued focus on local, state, and federal policies to support such exchanges."

"This article demonstrates the powerful impact and importance of immunization registries. CIR and EHR bidirectional information exchange has grown to approximately 600 facilities citywide - ensuring that providers have patient [immunization records](#) when the patient is in the office so that children receive all their recommended vaccines at that visit," said Assistant New York City Health Commissioner Dr. Jane Zucker, Bureau of Immunization.

Provided by Columbia University's Mailman School of Public Health

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