

BROADCAST-Driving to Increase Childhood Vaccination Rates

Despite the availability of free routine immunizations for low-income families through a federal program, many children are not vaccinated. [OSF HealthCare](#) wants to change that.

Through a little more than \$100,000 in grants through the Jump ARCHES program and the Illinois Innovation Network, [OSF Innovation](#) and partners are using artificial intelligence (AI) tools to design, develop and deploy a mobile child vaccination program for underserved communities in Illinois.

OSF HealthCare's [Innovation Design Lab](#) Director Scott Barrows says teams at [OSF Jump Simulation](#) and the [University of Illinois College of Medicine in Peoria](#) (UICOMP) will use machine learning algorithms to build artificial intelligence (AI) models designed to accurately identify geographic locations with the biggest need for childhood vaccinations.

Barrows says OSF is also developing digital tools to collect information during mobile clinics to help address barriers such as income and transportation among others.

SOT- OSF HealthCare's Innovation Design Lab Director Scott Barrows

“We will be both gathering information, anonymous information, plus applying new apps and new ways to gather information about what are a community's needs and some of them are quite dramatic.” (:20)

He emphasizes solving the root causes that influence why kids aren't vaccinated is an important aspect of the mobile vaccination clinics.

SOT- OSF HealthCare's Innovation Design Lab Director Scott Barrows

“The social determinants of health impacts everything really and that is involved in almost every app and technological intervention we create. It is critical. That is something OSF has really focused on.” (:18)

Another partner, Illinois State University in Normal, will use AI to create heat maps that identify geographic areas with the most concerning rates of under-vaccination, while also predicting the supply needs in high risk zip codes.

Elise Albers, Population Health manager for [OSF HealthCare Children's Hospital of Illinois \(CHOI\)](#) acknowledges vaccination rates were impacted by the COVID-19 pandemic, particularly in the months where some primary care and walk-in clinics were temporarily closed.

Albers says a federal government program to provide free vaccines for kids saw a decline.

SOT-Elise Albers, Population Health manager for OSF HealthCare Children's Hospital of Illinois

“Vaccines for Children ordering took a significant drop after March 13 (2020) when COVID-19 was declared a national emergency. So, if there's a drop in the ordering of these vaccines that means there's a drop in the administration of the vaccines.” (:16)

Even before the pandemic, certain populations saw lower vaccination rates, in part, caused by challenges for busy, working parents.

SOT-Elise Albers, Population Health manager for OSF HealthCare Children's Hospital of Illinois

“Typical office hours for doctors’ offices and clinics, they may not be open on the weekends or into the evening and we know our families work various hours, various shifts, have different schedules so it can be hard to get your children to the doctor to get vaccines. It is something we expect to see continue even after the effects of the pandemic so it’s not going away.” (:29)

Mary Stapel, MD, an internal medicine pediatrics physician and [OSF HealthCare Saint Francis Medical Center](#) director of Community Care-Clinics, says the latest year for which federal data is available, shows nationwide and in Illinois, those who are more likely to be vaccinated are those who live above the poverty line and have private insurance.

SOT-Mary Stapel, MD, an internal medicine pediatrics physician and OSF HealthCare Saint Francis Medical Center director of Community Care-Clinics

“Those less likely to be vaccinated are those who have public insurance like Medicaid, those who are under the poverty line, Blacks and Native American Indian. So we do definitely see that health disparity within immunization.” (:19)

Data from OSF HealthCare medical group and multi-specialty offices shows for example, a clinic in Peoria aimed at serving neighborhoods with the highest poverty has vaccination rates 30% lower than in zip codes covering more affluent areas.

Dr. Stapel says other factors beyond cost and access could be contributing to lower vaccine rates in rural communities.

SOT-Mary Stapel, MD, an internal medicine pediatrics physician and OSF HealthCare Saint Francis Medical Center director of Community Care-Clinics

“It does seem from the literature that there may be more cultural belief components that come into the rural health disparity but yes, rural areas, according to the National Immunization Survey data, have up to a 20% lower vaccination rates, especially looking at specific vaccines such as adolescent vaccines.” (:21)

Albers says the grants will build on work already done by trusted resources including [OSF Faith Community Nurses](#), the [OSF Care-A-Van](#), and [street medicine teams](#) which have partnered with churches, community centers, schools and harm reduction agencies to address the unique issues within a neighborhood.

SOT-Elise Albers, Population Health manager for OSF HealthCare Children's Hospital of Illinois

“We really are cautious when entering a new community and we know that there are trust issues, especially with vaccines and we really focus on making sure that we built trust with a community before we come in and offer services like vaccines.” (:21)

Barrows also thinks the grant work could provide a roadmap for dealing with COVID-19 vaccinations once they become available for children.