

Serbia Digitalizes Immunization Records: A Health System Milestone

Background

Jelena Cvejic is a busy doctor at a primary health center in Belgrade, Serbia who sees many patients each day. In addition to providing advice and care, she spends significant time submitting paper-based immunization records that takes time away from her patients. Jelena also provides summary coverage data to the government just once per year, limiting the ability to monitor immunization coverage, assess vaccination gaps, or respond swiftly to drop in coverage or outbreaks.

Despite efforts to increase vaccination rates, Serbia struggled to meet immunization targets from 2018 to 2022, leaving the country vulnerable to future outbreaks. For years, the lack of an

electronic vaccination record created delays in tracking immunization

coverage in Serbia, prevented real-time analysis, and left unvaccinated children vulnerable to preventable diseases like measles. In 2018, Serbia faced its largest measles outbreak in two decades, leading to tragic fatalities. Ninety five percent of people who contracted measles during this outbreak were not vaccinated or only partially vaccinated.¹ Herd immunity had weakened due to gaps in vaccination coverage, and without a centralized system, health officials couldn't respond quickly enough to prevent the epidemic.

When the COVID-19 pandemic began, the government needed to quickly monitor



Dr. Jelena Cvejic administers a vaccination in Belgrade, Serbia.
Credit: Zorana Parezanovic

¹ Institute of Public Health of Serbia "Dr. Milan Jovanović Batut", March 26th, 2018.

vaccination rates and plan protective measures. The government rolled out an electronic vaccination record developed specifically for pandemic vaccination to provide better insight into vaccination coverage. As the emergency phase of the pandemic ended, Jelena had seen how digitalization could change things for the better, but she still had to go back to the old way of collecting data on paper for routine immunizations. Not a single health center in Serbia, including private practices, had implemented even basic electronic vaccination records to track routine childhood and adult immunization.

Steps Taken

Then came Country Health Information System and Data Use (CHISU), USAID's flagship health information and data use program designed to address gaps in health information systems in countries like Serbia. Partnering with the Institute of Public Health "Batut" and the Ministry of Health, CHISU started to work on developing a centralized electronic immunization registry. The aim was to create an automatic data collection system that could seamlessly track immunization records in 151 health institutions across Serbia, ensuring no child was left unvaccinated.

One of the critical steps toward success was partnering with seven vendors who had already been providing information systems to Serbia's health centers. These vendors played a key role in developing software that automatically transferred immunization records into a central database, following national public health standards and international guidelines set by WHO and UNICEF. This technology shift wasn't just about software, though. National stakeholders, with the support of CHISU, developed comprehensive instructions and guidelines for healthcare workers like Jelena, ensuring that they could easily integrate the system into their daily operations.

CHISU and the Institute of Public Health "Batut" organized training sessions to empower healthcare workers across Serbia. Jelena, along with many others, attended these sessions and saw how the new system would give her more time to focus on patients while ensuring accurate and timely vaccination data.

Results + Next Steps

By the end of the project, Serbia's Institute of Public Health "Batut" confirmed full integration with all seven vendors, and health centers across the country began using the system to track routine immunizations in real time. This milestone marked a significant step forward for Serbia's public health system. The real-time tracking of immunization records not only reduces the administrative burden on healthcare workers but will also provide crucial data to prevent future disease outbreaks.

The centralized system offered a level of transparency and efficiency that Serbia had never experienced before. By ensuring timely vaccinations and making immunization data available, health officials could now prevent the gaps that once left children vulnerable to preventable diseases like measles. Jelena no longer had to wonder if her patients had been vaccinated. The system empowers her and her colleagues to take action and confident that no child is left unvaccinated due to a lack of information.

Looking ahead, the success of this project serves as a model for other areas of Serbia's health system. The experience gained during the development and implementation of the electronic immunization registry will inform future digital health projects across the country, potentially transforming the entire health sector. As new innovations emerge, the lessons learned from this project will continue to shape a brighter, healthier future for all citizens in Serbia.



This publication was produced with the support of the United States Agency for International Development (USAID) under the terms of #7200AA20CA00009. Views expressed are not necessarily those of USAID or the United States government.

