

Improving timely immunization rates in Vietnam with a digital immunization registry—ImmReg

Taking an innovation from district-level pilot to nationally integrated system

PATH has been working with Vietnam's National Expanded Immunization Program (NEPI) to improve immunization rates for women and children through the introduction of a digital immunization registry, known as ImmReg, since 2012. In five years, this initiative has grown from a district-level pilot to an integral part of national health information systems.

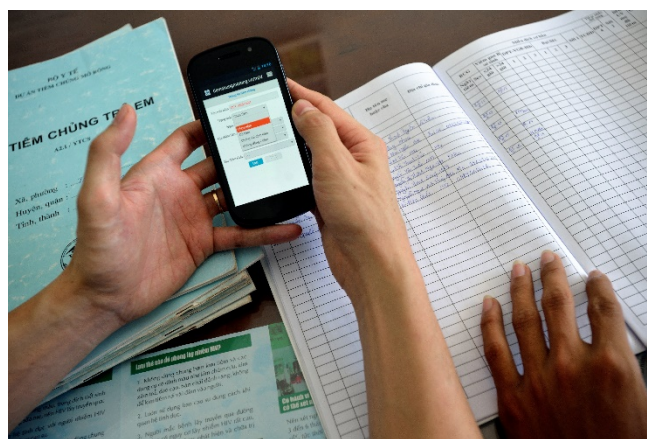
BRINGING IMMUNIZATION SYSTEMS INTO THE 21ST CENTURY

Until recently, immunization registries and reporting systems in Vietnam were entirely paper based. Staff at local Commune Health Centers (CHCs) used paper ledgers to track doses, monitor vaccine stocks, develop lists of individuals due for vaccination, and report to higher-level officials. These systems are time-consuming and prone to error. Data inaccuracies can also result in localized vaccine shortages or overstocking and waste, and missed or delayed vaccinations, leaving pregnant women and children at risk of contracting vaccine-preventable disease.

PATH and NEPI have developed and tested a new approach to improve timely immunization rates and reduce waste of resources. The digital immunization registry, ImmReg, and the accompanying vaccine-tracking component, VaxTrak, are enabling faster, more efficient, and more accurate management of individual vaccination records, vaccine delivery, and stock control. It also links to an mHealth application which enables CHCs to send reminders about vaccination appointments to caregivers' mobile phones.

HOW IT WORKS

- ImmReg generates lists of people due for vaccinations on immunization day and automatically sends clients SMS text reminders.
- Health center workers enter data on doses delivered on immunization day.
- ImmReg automatically generates immunization reports, which higher-level health care managers can access in real time.



ImmReg greatly reduces the time needed for updating immunization records and searching for those who are due for vaccination. It can be accessed using computers, or tablets and smartphones. WHO/Mark Leong

KEY BENEFITS OF IMMREG

ImmReg is:

- **Efficient**
ImmReg automatically generates reports, freeing staff to spend time on patient care instead of paperwork.
- **Accurate**
ImmReg reduces human error by eliminating the need for handwritten lists and manual calculations.
- **Effective**
The final evaluation of the project in 2015 conducted across 164 CHCs in Ben Tre Province illustrated a more than 20 percent increase in on-time delivery of Quinvaxem (a 5-in-1 vaccine that protects against diphtheria, tetanus, whooping cough, hepatitis B, and *Haemophilus influenzae* type b) and measles vaccines.

TAKING IMMREG TO SCALE: FROM 2012 TO 2017 AND BEYOND

In 2012, PATH, in collaboration with NEPI, developed and piloted ImmReg in a district of Ben Tre Province in the south of Vietnam.

In 2014 and 2015, PATH worked with the Ben Tre Provincial Health Department and Preventive Medicine Center to scale up this system across the whole province.

Results from this pilot showed that the system:

- Reduced the time needed to generate immunization reports.
- Increased full immunization coverage in the first year of life.
- Improved on-time vaccination rates.

Following this success, PATH was awarded the prestigious GSK and Save the Children Healthcare Innovation Award in 2016 to enable the further development and scale up of ImmReg into a sustainable, nationwide system.

Beginning in May 2016, PATH provided support for the General Department of Preventive Medicine (GDPM), Ministry of Health (MOH), and its partner, Viettel Center for Information Technology Solutions and Telecommunication (Viettel ICT), in integrating the ImmReg and VaxTrak systems into the National Immunization Information System (NIIS) and to assist in rolling it out nationwide.

The NIIS was finalized in October 2016. In 2017, PATH supported the training of provincial-level health workers from across the whole country to both use the system and train district- and commune-level staff in the NIIS.

As with ImmReg and VaxTrak, the NIIS will be instrumental in tracking immunization for children from birth and for pregnant women. Neonatal units enter data regarding each baby born in the hospital into the system; this information is then readily accessible at the child's local CHC, and they can be called for vaccinations at the right time. However, the NIIS differs in that it is used to track all vaccinations, including those given to older children and adults and at fee-based immunization services.

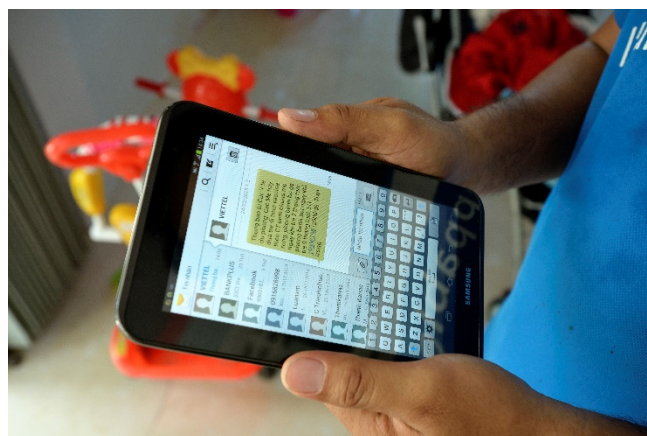
The NIIS is also available to a broader variety of health care providers. In addition to neonatal units and public vaccination providers, fee-based immunization facilities, like private clinics, will be able to contribute to and access the NIIS. It is the aim of the NIIS to be able to track the immunization of any individual in Vietnam, from birth until the end of life.

MOBILIZING HEALTH

A key feature of ImmReg is the mHealth component, which supports not only health workers but also empowers clients to manage their own vaccination schedules.

Within the last five years, mobile phone access in Vietnam has rapidly increased. Today, nearly all Vietnamese adults have a mobile phone, and an increasing proportion are using smartphones.

Before ImmReg, it was common practice for CHCs to hand deliver written invitations to immunization day to pregnant women and caregivers in their area. ImmReg enables CHCs to quickly and easily send SMS reminders about vaccinations, saving health workers time and money and making it easier for families to manage their health.



ImmReg enables parents and caregivers to receive vaccination reminders on their mobile devices. WHO/Mark Leong

As of 2016, PATH is working with the GDPM, MOH, and Viettel ICT to develop a digital information portal for the public. This will build on the SMS system and further capitalize on increased smartphone use, enabling people to use smartphones or computers to access their own and their children's immunization records and schedule vaccination appointments online.

ImmReg is a prime example of PATH's ability to use digital and mobile health solutions to address public health challenges and work with governments and health systems to take these innovations to scale for maximum impact. For more information, contact Nguyen Tuyet Nga, Vietnam Program Director (ntnguyen@path.org).



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PATH is the leader in global health innovation. An international nonprofit organization, we save lives and improve health, especially among women and children. We accelerate innovation across five platforms—vaccines, drugs, diagnostics, devices, and system and service innovations—that harness our entrepreneurial insight, scientific and public health expertise, and passion for health equity. By mobilizing partners around the world, we take innovation to scale, working alongside countries primarily in Africa and Asia to tackle their greatest health needs. Together, we deliver measurable results that disrupt the cycle of poor health. Learn more at www.path.org.

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