FACT SHEET

Keeping track of Vietnam's vaccines

Project Optimize, a collaboration between the World Health Organization and PATH, is helping national immunization programs prepare for the future. In Vietnam, project Optimize worked with national, regional, and local partners to help introduce VaxTrak, a software program that allows users at various levels of the health system to track vaccine stock and report monthly immunization activity.

The problems: paper-based systems and "best-guess" estimates

Access to up-to-date, accurate information on stock is critical to any vaccine supply chain. Key data include:

- Doses procured.
- Doses distributed.
- Doses administered.
- Remaining vaccine stock, with expiry dates.
- Wastage rates.

Without this information, supply chain managers have difficulty deciding how much vaccine stock to order and how to manage its distribution. In these circumstances, supply chain managers have to operate on "best-guess" estimates. This can lead to under-ordering (resulting in stockouts and missed opportunities to vaccinate children) or over-ordering (which can result in vaccines being wasted).

Using a paper-based system, recording vaccine-related data is an administrative burden. Health workers complete immunization reports by collating data on immunization activity and vaccine stocks, poring over paper records such as vaccine registers and distribution vouchers. This is tedious work that can easily lead to inaccuracies. In addition, there are often delays in making the completed reports accessible to the national-level authorities who have oversight of the entire vaccine supply chain.

Photo: Nguyen Phu Cuong

Paper-based records are tedious to work with.

Meeting the challenge: creating VaxTrak

An evaluation conducted in 2009 by Vietnam's National Institute of Hygiene and Epidemiology (NIHE) and project Optimize indicated that this system created a large burden for immunization health workers, that information was often delayed or incomplete at higher levels, and that there were opportunities to improve the accuracy of data reported.[i] Vietnam's National Expanded Program on Immunization (NEPI) wanted to pilot an electronic system for managing vaccine and immunization data using an online application so that multiple users would have access to the information in real time. Because project Optimize aims to demonstrate and validate technical solutions to strengthen the cold chain, it was logical for NEPI to collaborate with Optimize and NIHE on this pilot. In consultation with users, NIHE, and Optimize, a Hanoi-based software development company developed VaxTrak over a period of several months.

The team piloted VaxTrak in three provinces—Phu Tho (North Vietnam), Quang Tri (Central), and Ben Tre

[i] PATH, World Health Organization, National Insitute of Hygiene and Epidemiology. *Optimize Phase 1 Summary Report: Evaluating the Vaccine Supply Chain in Preparation for Demonstrating Future Options in Vietnam.* Hanoi, Vietnam; 2010. Available at: http://tinyurl.com/9mdkz3w.

(South)—as well as at regional and national levels (see Figure 1). Once installation and training were completed, immunization workers began using the system to register vaccine transactions and report immunizations given. Once in the system, information was available in real time via the Internet to various levels of the immunization program, including the national authorities. After the first three months of implementation, based on user feedback, NEPI extended the pilot to all districts of one project province and expanded the number of participating provinces to 13.

Figure 1. Selected provinces in Vietnam

The VaxTrak system in action

Project Optimize carefully monitored the use of the VaxTrak system; they wanted to know what impact VaxTrak had on accuracy of vaccine and immunization reporting and on the administrative burden to understand users' opinions of the software.

To assess accuracy, the team compared the actual vaccine stock on hand with the quantity recorded in the paper registry before VaxTrak and in the electronic database after VaxTrak. The results showed a change in the number of lots with matching data from 77 percent before VaxTrak to 100 percent after using the software. The number of lots counted before and after intervention was 39 and 40, respectively. Data show that using VaxTrak reduced the time burden of reporting. In provinces, the average amount of time needed to complete immunization reports changed from 22 minutes to 16 minutes, and for vaccine reports the change was from 88 minutes to 43 minutes.

Users of the VaxTrak program report that they are pleased with it because it enables them to access data whenever and wherever they have an Internet connection, it has an easy-to-use interface in Vietnamese, and they feel it helps them manage vaccines more accurately. Reporting is also simpler and faster because the software automatically compiles and aggregates data. For users at higher levels, seeing the real-time "balance" of the vaccine stocks is extremely helpful.

The VaxTrak system has an easy-to-use interface, making data easy to interpret.

However, the project team found that health workers' motivation to keep data up to date was sometimes lacking, given that this was a pilot project and not compulsory. Also, worker willingness to use the system was low in some areas where VaxTrak was not seen as meeting local requirements for financial reporting.

Next steps: VaxTrak after project Optimize

Based on the strong performance and acceptability of VaxTrak, NEPI is interested in scaling up the system to additional provinces after project Optimize ends. This potential scale-up project would be the time to revisit issues that the pilot has raised, including the need to maintain staff expertise through training, the importance of timely data entry at all levels, and the value of monitoring and support in the early stages of implementation.

Project partners

- National Expanded Program on Immunization, Vietnam.
- National Institute of Hygiene and Epidemiology, Vietnam.
- ANZ Solutions, a software development company based in Vietnam.

FOR MORE INFORMATION

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