Vietnam: Demonstrating innovative health supply chain solutions

Project Optimize is collaborating with Vietnam's National Institute of Hygiene and Epidemiology to demonstrate innovations in the supply chain that can help to meet the demands of an increasingly large and costly portfolio of vaccines.

Initially, the team focused on identifying the strengths and weaknesses of the supply systems of the country's National Expanded Program on Immunization (NEPI) to better understand how the systems could be improved.

In collaboration with NEPI and Vietnam's Ministry of Health, demonstration projects were designed to build on the program's capabilities and help define a long-term vision for the country's immunization supply systems.

With support from Optimize, NEPI is now implementing the following demonstration projects:

- Developing a computerized logistics management information system (LMIS) that can manage vaccine stock and record immunization data.
- Using mobile phones to track children due for immunization and record immunizations given.
- Using "passive cooling" technology that does not require electricity to store vaccines in commune health centers.
- Using direct-drive solar refrigerators to store vaccines in district health centers.
- Creating standard operating procedures to standardize best practices, and designing a training system to support this.

Optimize is also:

- Collaborating with Vietnam's General Department of Preventive Medicine on a web-based application that can track fee-based vaccinations administered outside the national immunization program.
- Working with a local vaccine manufacturer to facilitate their adoption of vaccine vial monitors for their measles vaccine.

Training new users of the Nano-Q™ passive cooling device.

About Optimize

Optimize is a collaboration between the World Health Organization and PATH to identify ways in which supply chains can be optimized to meet the demands of an increasingly large and costly portfolio of vaccines.

We work directly with national governments and other institutions to identify problems in the supply chain and test innovative solutions.

Our goal is to help define an ideal vaccine supply chain that can be used to develop stronger, more adaptable, and more efficient logistics systems, extending the reach of lifesaving health technologies to people around the world.

Timeline

- 2010 to 2012

Partners

- General Department of Preventive Medicine
- National Institute of Hygiene and Epidemiology
- PATH
- World Health Organization

Activities

- Computerized LMIS
- Mobile technology for tracking immunizations
- Passive cooling technology
- Direct-drive solar refrigerators
- Strengthening standard operating procedures
- Fee-based immunization reporting
- Support for vaccine vial monitor adoption

Pilot locations

- Five provinces and three municipalities

Developing a computerized LMIS

NEPI is piloting a computerized LMIS nicknamed VaxTrak™ to improve the management of vaccine stock and the reporting of immunization data. This web-based tool will improve the accuracy of vaccine stock management, helping health care workers to keep track of vaccine stock and reducing the amount of time they spend on immunization reporting.

Using mobile phones to track immunizations

Health workers who deliver vaccines in the national immunization program spend a lot of time recording information in paper registries about every child they immunize. To improve accuracy and simplify the process of aggregating data for reporting, NEPI is piloting a computerized immunization registry that uses mobile phones and computers to track children due for immunization and record the vaccinations they have received. This system increases the visibility of immunization data by making it immediately available to upper levels and also includes a system to alert parents by SMS (short message service) when their children are due for immunization.

Using passive cooling devices to store vaccines

The birth dose for the hepatitis B vaccine must be administered within 24 hours of birth. But at many commune health centers with limited or unreliable electricity, vaccines can only be stored for one or two days a month as part of the monthly national immunization strategy. This means that many newborn babies miss out on the protective benefits of the hepatitis B birth dose. Optimize is piloting the Nano-Q™ passive cooling device from SAVSU Technologies, which functions without electricity. This can enable some vaccines to be stored at commune health centers all month, which could increase the number of newborn babies who receive the important first dose.

Using direct-drive solar refrigerators to store vaccines

For years, solar refrigeration has helped provide cold storage for vaccines in areas without electricity or to increase cold chain capacity while decreasing energy costs and reliance. However, problems with battery maintenance and cost have made solar refrigeration a challenge. To address these problems, manufacturers have created a new type of refrigerator that eliminates the need for a battery, the direct-drive solar refrigerator. This new technology has the potential to greatly increase the reliability of solar refrigeration. Optimize is evaluating whether the Sure Chill® direct-drive solar refrigerator manufactured by True Energy—which stores energy in the form of ice—is a viable option for storing vaccines in two different regions of Vietnam in terms of both cost and performance.

Strengthening standard operating procedures

Optimize is providing support to NEPI as it adopts more rigorous standard operating procedures and training programs to improve immunization and vaccine management. More-consistent processes and better-informed staff will increase preparedness for the introduction of new vaccines as NEPI continues to grow.

Reporting on fee-based immunization services

There is growing demand in Vietnam for vaccines administered outside the free national immunization system using a fee-for-service model. Optimize refers to this service as fee-based immunization. As the number of children who are immunized in the fee-based system increases, it is becoming more important for Vietnam's Ministry of Health to be able to track information about these immunizations, including the number of children covered and information about adverse events. To address this need, Optimize is piloting a web application that enables users to report data on fee-based immunization service in Vietnam.

Adopting vaccine vial monitors for vaccines made in Vietnam

Optimize is providing technical support to a major Vietnam-based vaccine manufacturer as they work toward adopting the vaccine vial monitor, a small sticker on the vaccine vial that indicates its cumulative heat exposure over time. Optimize will also help to raise awareness within the Ministry of Health about the benefits of vaccine vial monitors which can help improve vaccine management and ensure vaccine quality.

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