Senegal: Integrating and streamlining health supply chains

Project Optimize is collaborating with the Senegalese Ministry of Health to demonstrate innovations in the supply chain that can help to increase efficiency and improve performance, preparing the country for the introduction of new vaccines in the future.

The two-year collaboration aims to demonstrate the benefits of a vaccine supply chain that:

- Is integrated with those of other health products.
- Employs a "moving warehouse" to streamline delivery from the regional to the peripheral level.
- Is managed using a computerized logistics management information system (LMIS).
- Uses environmentally friendly methods to generate the electricity it needs.

An integrated supply chain

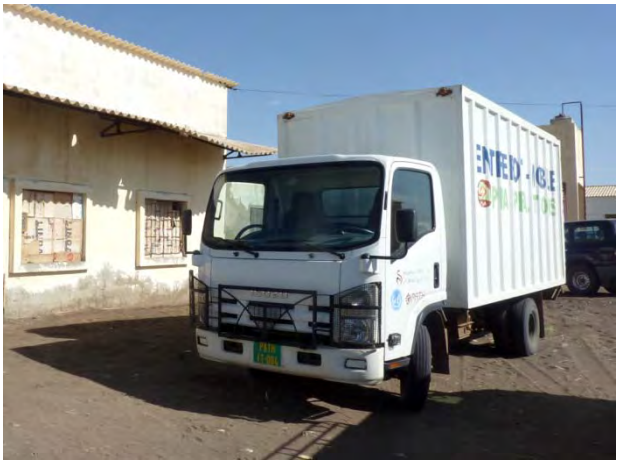
In Senegal, the supply chains of disease-control programs are often managed independently of each other. However, without coordination between programs, these parallel supply chains put serious pressure on the system.

At the central level, uncoordinated drug shipments and regular overstocking have pushed the storage and transport capacity of the national procurement pharmacy to its limit. At lower levels (regions, districts, and health posts), lack of coordination and data sharing has duplicated effort, reduced efficiency, and caused disruptions to the delivery of health products.

To alleviate these problems, the Senegalese Ministry of Health is creating a single, integrated health supply chain for all public-sector vaccines, drugs, and other health products. Vaccines are now being distributed with other drugs and health products from the central to the regional level. It is hoped that this will increase efficiency, improve performance, and help to meet the demands of introducing new vaccines.

The moving warehouse

The Ministry of Health has deployed specially equipped trucks—known as the "moving warehouse"—to streamline the vaccine supply chain from the regional to the peripheral level. The moving warehouse trucks regularly transport vaccines from regional stores directly to over 100 health centers and posts throughout the pilot region of



A moving warehouse truck delivers vaccine supplies in the Saint-Louis region.

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

- Senegal Ministry of Health
- PATH
- World Health Organization

Activities

- Integrated supply chain
- Moving warehouse
- Computerized LMIS
- Environmentally friendly energy approaches
- A vision for future health supply systems

Pilot locations

- Dakar and Saint-Louis

Saint-Louis. This means that vaccines no longer need to be stored in district warehouses, and health center staff no longer need to collect vaccines from the district store each month—saving them many long and arduous journeys.

The moving warehouse is bringing other benefits. By accompanying the truck on its delivery circuits, district and regional officers can visit health centers and posts to provide regular supervision and training to health staff. At each stop, the moving warehouse team also collects safety boxes filled with used syringes, which are then returned to the district stores for safe disposal.

A computerized logistics management information system

Without precise information on vaccine stock and consumption at health posts and centers, accurately forecasting demand, planning procurement, and resupplying stock is extremely difficult. The Ministry of Health, therefore, is piloting a computerized LMIS that links the moving warehouse to existing information systems, enabling fast and accurate data flow on vaccine stock. The moving warehouse trucks are equipped with computers and a wireless Internet connection, enabling staff to access and update information on vaccine stock in the country's new LMIS. By doing so, they can share data with district management teams and regional and national storage facilities across the country. With each monthly delivery, moving warehouse staff record in the LMIS the health center's current vaccine stock levels as well as the number of vaccines administered that month. They then top up the health center's vaccine stock to the required level. By regularly monitoring vaccine stock levels and sharing this information in real time using the LMIS, more accurate forecasts can be made for future stock requirements. This enables the supply chain to be streamlined from the central to the peripheral level, reducing the likelihood of both overstocking and stockouts.

Environmentally friendly energy

The Ministry of Health is investigating environmentally friendly ways to improve the reliability and performance of vaccine storage at both the regional level and at hard-to-reach health posts. Hybrid solar and grid electric systems are being tested at the regional level, while True Energy and Sundanzer battery-free vaccine refrigerators with temperature monitoring and alarm systems are being tested at remote health posts. These refrigerators can operate for long periods with only intermittent power—an important benefit for health centers without reliable grid electricity.

By making use of solar energy, the quality and reliability of the cold chain can be increased, while reducing the environmental impact and dependency on imported fossil fuels.

Solar panels installed on the roof of a health post in Saint-Louis.

A vision for future health supply systems

The Ministry is also developing a vision for future health supply systems in Senegal. Doing so will help to ensure that stakeholders across the country share a common view of what health supply systems will look like by 2020. This will prepare the country's public health supply systems for the future introduction of new vaccines. The vision will define a vaccine supply chain that is:

- Integrated with those of other health supply systems.
- Robust and reliable enough to transport vaccines through the supply chain.
- Flexible enough to accommodate the introduction of new vaccines.
- Efficient enough to maintain and extend coverage rates.

A scale-up strategy that will prepare Senegal to implement successful demonstration projects throughout the country is also being developed.

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