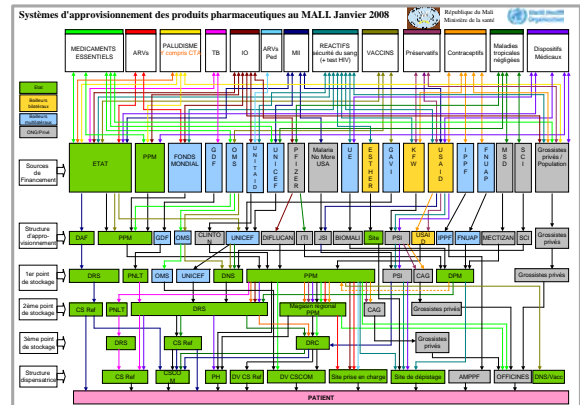


Reducing the need for parallel supply chains

Multiple systems and stakeholders

A donor-driven focus on quick and measurable results has resulted in numerous independent disease control programs within each country's health system. Each of these programs maintains separate supply and logistics systems even though they perform essentially the same functions (e.g., sourcing, procurement, storage, and distribution) and reach the same target populations. The image at right shows the typical "spaghetti diagram" that results from this situation. The World Health Organization (WHO) Essential Drug & Medicine (EDM) department estimates that on average there are up to 17 funders, 19 procurement agencies, and 84 distribution channels in each country. This diagram also shows the numerous steps in the supply chain from the national level to service delivery.



Multiple parallel supply chains are typical in many countries (Source: WHO EDM department)

Although these vertical programs simplify the donor reporting process, they present unnecessary cost and complication at all health system levels. At the central level, a lack of coordination between ministries of health, public health programs, central medical stores, and their numerous partners often results in huge quantities of products, leading to overstocks, expiration, and massive waste of valuable health supplies. At lower levels (provinces, districts, and health facilities), uncoordinated operations can lead to disruptions, duplication of efforts, and inefficient use of resources.

Targeted integration provides solutions

By moving toward horizontally integrated systems that forge links across existing channels, public health programs can avoid duplications, streamline the supply chain (i.e., remove redundant storage levels and strengthen the remaining levels), and segment it to better suit product characteristics.

Project Optimize, a collaboration between WHO and PATH, is working with national immunization programs to demonstrate how integrated and streamlined health supply systems might work. Our expectation is that integrated supply chain systems will allow public health programs to reduce uncertainties and risks, achieve economies of scale, shorten delivery lead times, improve procurement, provide better incentives for health workers, and improve client service.

Optimize's work in integration

At the global level, Optimize facilitates the WHO Discussion Forum on Supply Chain Integration and participates in the United Nations Children's Fund (UNICEF) Cold Chain and Logistics (CCL) Taskforce subgroup on supply chain integration. These groups are working toward a common understanding of integration within the context of health system strengthening and helping immunization programs gain maximum benefits from integration. The CCL Taskforce is finalizing operational guidelines to support country-level supply chain integration.

Integration is also a key focus within the Optimize demonstration projects in Tunisia and Senegal. These projects are generating important field data to inform operational guidelines and recommendations to countries in the region.

Moving warehouses in Senegal

In Senegal, the vaccine supply chain has reached capacity limits, making the introduction of new vaccines difficult. Optimize and the Senegalese Ministry of Health are piloting an integrated supply chain from the central level in Dakar to peripheral health centers. The goal is to create a single integrated health supply chain with a modern management information system for all public-sector vaccines, drugs, and other health products—a supply chain that is information driven, distribution based, and streamlined from the central to the peripheral levels. Here’s how it works.

At the central level, the management of vaccine reception, storage, and distribution has been transferred from the immunization program to the central medical stores (called PNA). In the pilot region of Saint-Louis, regional vaccine storage has been transferred to the regional medical stores (called PRA), which have been fitted with 12 solar refrigerators that avoid the need for backup generators. From Saint-Louis, delivery trucks called “moving warehouses” transport vaccines monthly from regional stores directly to more than 100 health centers and posts throughout the Saint-Louis region. This means that vaccines no longer need to be stored in district warehouses and health center personnel are no longer required to collect the vaccines from the district stores—saving many long and difficult journeys. Since early 2012, the moving warehouses have been distributing drugs and other health products to all five districts of the Saint-Louis region.

The two moving warehouses are staffed with delivery teams that visit health facilities to replenish stock, collect safety boxes, and provide technical assistance and supportive supervision, as needed. The moving warehouses are equipped with computer equipment and logistics management information software to track stock levels and consumption. Data are transmitted via the Internet to district and regional health management teams and national health supply chain managers.

A national planning and forecasting commission and a regional coordinating committee meet regularly with PNA and PRA staff, ministry of health leadership, and the Regional Medical Office to discuss implementation issues. The project team is currently gathering information on the intervention’s impact and, if successful, developing a road map for scaling up the intervention. Optimize is also supporting the ministry of health in establishing a long-term vision for immunization and other health service support systems in Senegal. Ultimately, the lessons learned through the project will guide the development of health systems throughout the region.

Streamlined, integrated, information-driven, environment-friendly supply chain in Tunisia

Tunisia’s immunization program is considered one of the most successful in the region. Yet, the logistical challenges of introducing new and expensive vaccines are placing significant pressure on the existing supply chain system. To ensure the program’s continued success as the vaccine landscape changes, the Tunisian Ministry of Health and project Optimize are demonstrating new supply chain solutions in two areas: Kasserine and Sousse.

The ultimate vision is that a single, streamlined, and integrated health supply chain in Tunisia equipped with a modern health information system will bring efficiencies in procurement, supply, storage, distribution, stock management, and quality of services at lower overall costs to the system.

In the demonstration, health products have been regrouped into a single cold storage and delivery chain from the national to regional levels. As vaccines travel from regional levels to district stores, they are consolidated with drugs and other temperature-sensitive products. This means that all cold, controlled-temperature, and dry health products can be warehoused and transported in more efficient delivery circuits. The system uses solar energy from photovoltaic panels to power electric vehicles and refrigerators, which may enable Tunisia to achieve a “net-zero energy” supply chain system.

The way forward

Operational guidelines and recommendations to countries, including a road map for integrated distribution of vaccines and immunization supplies with other drugs and health products, will be available in early 2013.

Project partners

- Bioforce Institute, Reproductive Health Supplies Coalition, UNICEF, US Agency for International Development
- Senegal: Direction de la Prévention Médicale, Ministry of Health, Pharmacie Nationale d’Approvisionnement, local representatives of partner agencies
- Tunisia: Agence Nationale des Energies Renouvelables, Direction des Soins de Santé de Base, Pharmacie Centrale de Tunisie, Ministry of Health

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