

A health worker administers vaccines to waiting children at a rural health center in Lolanga-Mampoko. (Photo by Dr. Taty Boseke)



# Increasing Access to Health Products in the DRC

Creating a more efficient, effective and resilient supply chain with the Next Generation Supply Chain Initiative





Health commodities are loaded from Mbandaka Provincial Warehouse for transportation along the Congo River. (Photo by Dr. Archimede Bofambu Makaya)

# INTRODUCTION

## to the NGCA Initiative

The time and distance required to reach health centers in remote areas of the Democratic Republic of Congo (DRC) makes it difficult for people to receive equitable access to health services. Frequent stockouts of basic health products like vaccines and essential medicines further compound the challenge. Recognizing these barriers, officials in the DRC are working to ensure that when people do arrive at health centers, the right products are there waiting for them.

National and provincial government officials, working with VillageReach, are leading the Next Generation Supply Chain Initiative (in French, it is known as Nouvelle Génération des Chaînes d'Approvisionnement, or NGCA) to create a more efficient, effective supply chain. The initiative was launched in March 2017 with an initial focus in Equateur Province — a logistically challenging region in northwestern DRC.



Map of the Democratic Republic of Congo with the Equateur Province highlighted in red

Over the course of a year, three zones in Equateur Province used system design to transform the last mile delivery of products. Availability of essential health products improved as did the cost-effectiveness of the supply chain. One of the most notable changes is that after the NGCA Initiative was implemented, the average monthly consumption of vaccine doses increased significantly in the three health districts supported by VillageReach. More people are accessing the health system and receiving vaccinations.

This last mile delivery system was applied in June 2018 when VillageReach supported the DRC Ministry of Health to distribute health commodities in four additional health zones impacted by an Ebola outbreak. Health emergencies like Ebola outbreaks can potentially disrupt the entire health system, but last mile delivery ensured routine health products reached populations in need at a critical time.



Map of Equateur province highlighting the three health zones where VillageReach works

This document summarizes the five pillars of transformation, the benefits to the health system, and considerations for scaling or adapting the initiative within and beyond Equateur Province.

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As a result of supply chain improvements in Equateur, many more people are getting vaccinated.

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Health commodities are loaded onto canoes for distribution along the Congo River. (Photo by Freddy Nkosi)

# THE FIVE PILLARS

## of Equateur's supply chain transformation

Based on the results of VillageReach's 2015 supply chain assessment in Equateur Province and subsequent modeling and system design activities, health officials made five key changes to the health supply chain. These changes have been implemented in three health zones that serve about 500,000 inhabitants and more than 20 percent of all people in the province.

### 1 Responsibility for the supply chain is consolidated at the provincial level

**BEFORE:** Supply chain responsibilities were diffused across multiple levels of the health system: Zone- and community-based staff were responsible for collecting vaccines and health products every month, and provincial authorities were responsible for providing supervision. Accountability structures were limited, and health staff did not receive much support in carrying out their responsibilities.

**AFTER:** Under the NGCA Initiative, supply chain responsibilities are consolidated at the provincial level, where health officials oversee the delivery of vaccines and health products to health centers. A Provincial Logistics Group monitors all health centers in the zone and provides support so health workers can focus on serving the people in their communities.

### 2 Products are delivered directly to health centers and resupply points

**BEFORE:** Once a month, staff from each health zone traveled from 60 km to 300 km to the provincial warehouse to collect products. Health workers then traveled up to several days each month to collect vaccine supplies from the health zone and bring them back to health centers.



**AFTER:** Under the NGCA Initiative, products are delivered directly from the provincial warehouse to a subset of health centers that have cold chain equipment. This provides opportunities for ongoing training and support. For instance, supervisory visits from logisticians ensure that personnel are correctly managing stock and reporting on regular intervals. This direct data collection leads to better visibility of stock levels and other performance information from the health centers. Most importantly, it liberates health workers from the time-consuming and costly obligation to collect supplies on their own, allowing them more time to dedicate to their primary duty of delivering care to patients in their communities.

3 Health products from different programs are transported together

**BEFORE:** In Equateur, the main highway is the Congo River, making transportation to service-delivery points complicated and costly. Vaccines, which must be kept cold, were typically stored and distributed separately from other health products, even though they eventually went to the same places.

**AFTER:** While still stored separately at the provincial level, shipments of family planning products and generic and essential medicines are, under the NGCA Initiative, combined with shipments of vaccines. Vaccines only use 5 to 14 percent of the transportation capacity on each distribution, allowing room for other products. Merging transportation or storage resources can save significant time and resources and improve product availability at the health center level.

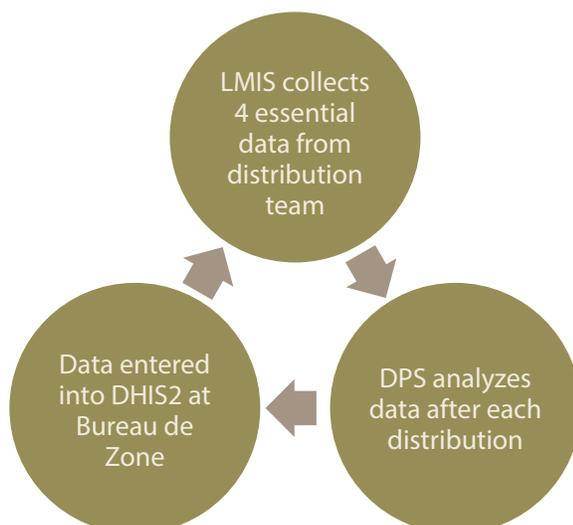
4 Health staff at all levels receive supply chain management training

**BEFORE:** Many health staff received training only on the basics of stock management, vaccine handling and dispensing medicines to patients. Transportation and storage were limited. This often resulted in poor management of health products and vaccines. In some cases, products expired and vaccines lost potency from exposure to heat or freezing temperatures or disruptions in vaccine supply.

**AFTER:** As part of the NGCA Initiative, central, provincial and zone managers are trained to be change agents in supply chain leadership. On-site training is provided for Logistics Management Information Systems (LMIS) and Inventory Control Systems (ICS). This includes procedures for handling products, maintaining equipment, and collecting data on consumption and available stocks to help avoid stockouts. Supervisors (Equipe Cadre Zone or ECZ) provide supportive supervision.

5 Data is collected and used to make programmatic and strategic decisions

**BEFORE:** Throughout the DRC, stock and service data was collected at health centers, entered onto registers and logs, consolidated into forms and sent to supervisors at the zone level. Because the data was aggregated at the health zone mostly to show coverage rates, it was difficult to use data to manage operations and monitor supply chain performance at health centers.



**AFTER:** The NGCA Initiative implements tools to collect essential data during each delivery. Each delivery team collects data from each health center on consumption, stock availability, number of stockout days and information on losses to calculate wastage. This data is then used to resupply each health center with needed products. Data about cold chain functioning and on-time and in-full inventory is also collected and used to monitor supply chain performance.

# THE BENEFITS

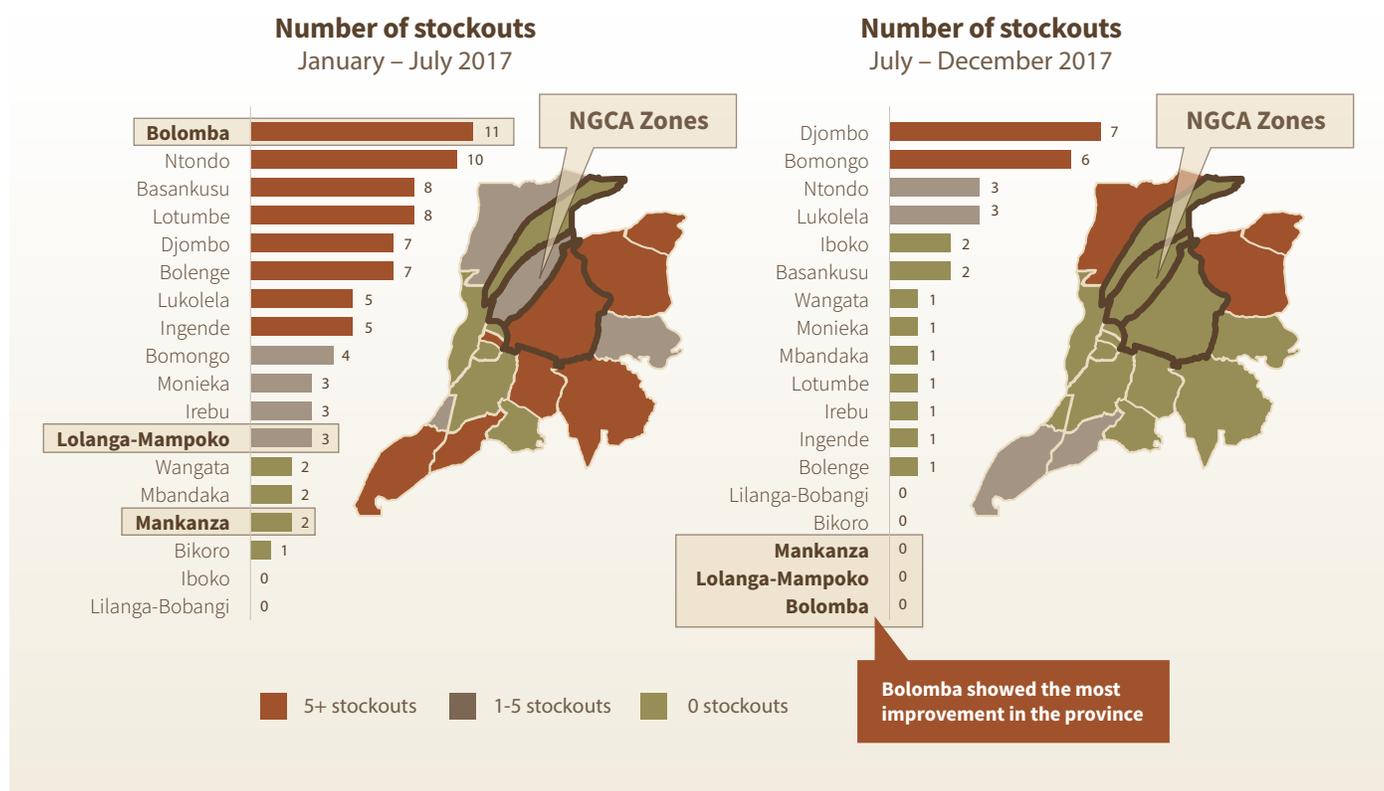
## The NGCA Initiative Boosts Equateur's Health System



### Improved product availability

Prior to the NGCA Initiative, immunization services across the province and in each of the three health zones had been compromised by stockouts. In Bolomba, for example, stockouts occurred 11 times in the six months prior to the NGCA Initiative, according to an independent study by Acasus. After the NGCA Initiative was implemented, stockouts dropped to zero in all three zones (see Figure 1).

Figure 1: Acasus data shows number of stockouts at the zone level pre- and post-NGCA Initiative

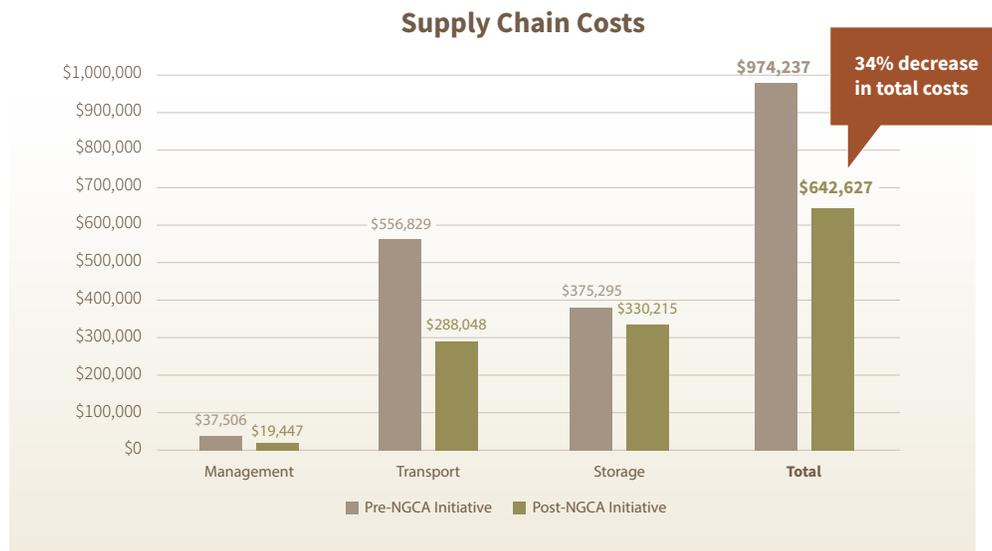




# Overall cost savings

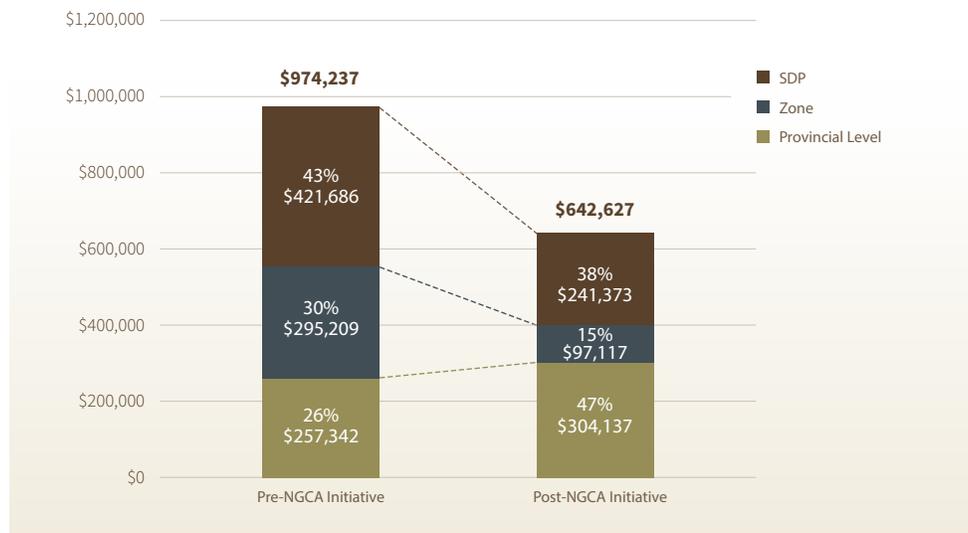
When the NGCA Initiative began, a financial study was also started to determine how changes to the supply chain impacted costs. Costs were measured in September 2017 and again in February 2018 after the NGCA Initiative had been fully rolled out in three health zones. As shown in Figure 2, total supply chain costs decreased by 34 percent.

Figure 2: Supply chain costs pre- and post-NGCA Initiative, by cost category



The most dramatic reduction in costs was a 40 percent decrease in transport costs, mostly at the zone and service delivery level. This reduction occurred because health staff were no longer required to travel to the province or to the zones each month to collect vaccines (see Figure 3). Transport costs increased slightly at the province level to pay for fuel and delivery services, but since deliveries are now made every two months instead of monthly, the increased costs at the provincial level have been marginal.

Figure 3: Supply chain costs pre- and post-NGCA Initiative, by health system level





## More time for health services

**After the NGCA Initiative was implemented, an independent study by Acasus verified that average monthly consumption of vaccine doses increased 22 percent in the three health districts supported by VillageReach compared to 4 percent in other health districts. This means that many more people accessed the health system and received vaccinations after the NGCA Initiative began than before.** This was in part due to replacing a population-based system with an inventory control system based on average monthly consumption.

While product availability accounts for some of this change, health workers report that the most substantial benefit of the NGCA Initiative has been the increased time they have to devote to patients.

Before the NGCA Initiative, some health workers had to travel more than 100 km by canoe or on foot to collect vaccines — trips that could sometimes take three days.

Health workers now receive deliveries at their facilities and are no longer required to travel to the health zone every month to collect supplies. This translates into service delivery providers having an increased capacity to provide primary health services — including immunizations, pre- and post-natal care, family planning, nutrition, treatment and referrals to the communities they are dedicated to serving.

“I used to spend at least two days round trip to collect vaccines. It was a big concern for my family that I was leaving behind, but also for the patients I was leaving unattended.”



**Ruphin Ndumbala,**  
Manager of Boso-Mbuki Health Center, Equateur



Traditional canoes used to transport health commodities and other necessities along the Congo River. (Photo by Freddy Nkosi)

# CONSIDERATIONS

## for scale-up or replication

Provincial authorities in Equateur and other provinces in the DRC have expressed interest in scaling up the NGCA Initiative to the remaining health zones in Equateur Province and, ultimately, to additional provinces in the DRC.

Although replication must account for the particular country context, the approach taken in DRC has been proven in other environments, particularly where health facilities are far from resupply points, and where data is lacking or unreliable. The following considerations can accelerate the process when adapted for a similar country context.



## Demonstrate links to existing government priorities

In the DRC, the NGCA Initiative supports several priority programs within the Ministry of Health: Programme Elargi de Vaccination (PEV), which is redesigning the distribution systems of vaccines; Projet de Développement du Système de Santé (PDSS), which seeks to build capacity across the health system after restructuring provincial lines of authority; and Programme National d'Approvisionnement en Médicaments (PNAM), which is designing an integrated distribution system for health products in the DRC. By supporting existing government programs, the NGCA Initiative received political backing and improved its ability to find long-term sources of funding from the government and its partners.



## Seek government leadership & ownership at all levels

Both the national and provincial Ministries of Health and an existing provincial logistics working group provided strong leadership for the NGCA Initiative. Under their guidance, the NGCA Initiative overcame political barriers more quickly and received more coordinated support from donors and technical partners. This made it possible for the NGCA Initiative to implement significant changes in the supply chain, across three health programs, in a relatively short period.



## Share resources across programs where possible

The initiative showed that it is possible to combine transportation of family planning supplies and essential medicines, thereby saving time and resources for all programs involved. Since vaccines took up such a small percentage of the transport, HIV and malaria products and other items could be transported on an ongoing basis. Identifying strategies for merging some functions of supply chains (e.g., transport, management and storage), at what levels and for which commodities, is a difficult task involving decision-makers from different health programs. However, any endeavor that both improves sustainability of the health system and access to essential health products is a worthy one.



## Plan for funding to reach the service delivery level

Financial resources for distribution (e.g. funds for per diems, fuel etc.) are needed to deliver products throughout the system. Although the overall supply chain costs under the NGCA Initiative in Equateur Province dropped by 34 percent, the savings will accrue mostly at the zone and health center levels — those that are historically the most poorly resourced in the system. Costs at the provincial level have increased slightly, requiring financing to offset those costs. When considering improvements to the system, it is important to ensure funds are budgeted, tracked and disbursed all the way to the service delivery level.

A medical doctor at a health center in Mampoko. (Photo by Freddy Nkosi)





A health center in Mampoko.  
(Photo by Freddy Nkosi)

# THE VALUE

## of a next-generation supply chain

The NGCA Initiative demonstrated that it is possible to deliver more health products more reliably to more health centers at less cost than was done under the existing system. While costs shift from the health center and zone levels to the provincial level, this shift represents a maturing health system, as it relies less on health workers to shoulder transportation costs and places more responsibility on the province to support primary health care. Moreover, in a next-generation supply chain, stronger data systems support health workers and give them the information, tools and training they need to be successful.

A next-generation supply chain is valuable for its ability to improve access to health care, particularly in hard-to-reach areas. So, the question must be asked: What are partners, donors and governments willing to invest for a supply chain that increases product availability while reducing the financial and time burden on health workers? When products are available, more people can access the full range of primary health services and receive preventive and curative care, in turn remaining healthier and less vulnerable to illness and disease. By investing in stronger health supply chains, governments — with partner and donor support — can build a stronger and lasting foundation for primary health services.

“The NGCA helps us so much. Since I have been here [my zone], at the end of the month I can’t sleep because I am always wondering how we’ll get vaccines. Now that the initiative is supporting us ... we have the commodities ... and all the children be vaccinated. So we are really pleased with this initiative.”



**Dr Sam Lokose,**  
Médecin chef de  
zone Bolomba



A health worker checks vaccine stock at a clinic in Botamba. (Photo by Freddy Nkosi)

## Acknowledgment

This project is funded by the Government of DRC through two agencies of the Ministry of Health: PDSS (Projet de Développement du Système de Santé, funded by the World Bank) and the Cellule d'Appui et de Gestion Financière (with funding from the Global Fund). Funding is also provided by the Bill & Melinda Gates Foundation.

## Learn More

More information about supply chain improvements are available at [villagereach.org/work/supply-chain-and-logistics/](http://villagereach.org/work/supply-chain-and-logistics/)

Specific information about the NGCA Initiative can be requested from VillageReach DRC:

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