

# White Paper on Mozambique Supply chain-

Transportation challenges



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## Table of Contents

I.	Introduction -----	3
II.	Challenges on public health Supply chain Mozambique -----	4
	a. Warehousing-----	4
	b. Stock outs and Data Collection-----	5
	c. Transportation-----	5
III.	Public health transportation challenges and effects on healthcare sector-----	6
	a. Road conditions -----	6
	b. Rural hospitals and Dispensaries location -----	7
IV.	Imperial Health Services Solution for Malawi-----	8
	a. The Challenge-----	8
	b. The Solution-----	8
	c. The Outcome-----	9
V.	Conclusion/Recommendations-----	10
VI.	Bibliography-----	11

## Chapter one:

# Introduction

As the world's population grows the demand for affordable and accessible health care also increases. The supply chain is the main driving force for adequate healthcare in developing countries. It also includes the crucial components of coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. A supply chain consists of all parties involved directly or indirectly in fulfilling a customer request. In health, a customer could mean a hospital, health center, clinic or even the government.

For the purpose of this white paper, challenges in the healthcare system in developing countries such as Mozambique have a cause of inappropriate supply of medicines in the country's health centers. In Africa most often Ministry of Health set up an independent entity to establish the national level supply chain which becomes responsible for distribution, purchase, storage across the country's health centers including general hospitals and dispensaries. As a result, Poor Visibility and low level of Information sharing were governments and stockholders find it difficult to collaborate with other governmental entities, giving room for counterfeit and parallel importers and exporters of expired medicine. Another concern in the African supply chain is transportation.

Transportation is one of the key elements in the supply chain. Transportation is required in the whole production procedures, from manufacturing to delivery to the final consumers and returns. In supply chain, only a proper coordination between each component would bring the benefits to a maximum.

This white paper is going to describe three main challenges of MOH supply chain and will explore one of the challenges(transportation) and give its' effect on the health care system in Mozambique. Furthermore, this document will present solution designed for Malawi healthcare problems to illustrate possible solutions for the Mozambique.

Chapter two:

## **Challenges on public health Supply chain Mozambique**

Bellow, are a few challenges in the public health supply chain in Mozambique that contribute to poor quality of healthcare in the nation. The next chapter contains more description of the transportation sector hence is the main focus of the white paper.

### **Warehousing**

Warehouses are considered to be a critical part of an overall supply chain. When Medicines are procured and enter the country, they require minimum conditions such as electricity, temperature control, to maintain the long-term storage. However, existing warehouses in Mozambique are in a deteriorating condition, firstly because they have no inventory control, no IT system or even worse, most warehouses in the rural areas have no sustainable power supply they rely mostly on solar panels. A situation that leaves the medicines that are stored vulnerable to rats, water leaks in the rainy season.



**Figure 1: Rural area clinic that is also used as a warehouse**

## Stock outs and Data collection

Due to minimal use of technology, the MOH in Mozambique faces huge challenges when it comes to data collection. As a result, stock-outs are very frequent along the year. Having data would allow the MOH to keep track of the medicines needed for procurement, would also allow the MOH to keep records of the time frame required to procure medicine each year. Currently, the MOH warehouses use the manual system to keep records which has proved not be efficient resulting in: high level of stock outs and also cases where too much stock in the warehouses because there is no information or data on what and where the medicines are needed.



**Figure 2: Almost empty pallet in a warehouse**

## Transportation

The role that transportation in supply chain is much more complex than just delivering goods to the proprietors. Lack of proper trucks, lack of road access to the final destination (hospitals and dispensaries) are a couple challenges that will be explored in chapter 3 of this white paper in order to give recommendations for possible solutions to mitigate transportation challenge in the supply chain in Mozambique.

## Chapter three:

# Public health transportation challenges and effects in the health

The public health system is part of a broad network that seeks to ensure availability of medicines in a country. To ensure the quality health, the supply chain as a whole (with all its components) needs to be in proper conditions and keen in adapting to the constantly changing world. In this section, there will be a closer look at the transportation challenge in Mozambique and how it's affecting the rural population mostly.

### Road conditions

Mozambique faces unique challenges in the transportation sector to meet the demands of the health sector. The road situation in Mozambique is not pleasant to meet the demand of the growing population and market. To be more precise, Mozambique has about 35,000 km of road, which only 23,668 km is classified, and from that number, only 20% percent of the roads are paved leaving 80% of the of the total access roads in some of the worst conditions. Research conducted by Village Reach shows in the rural areas passages even for trucks are not possible during the rainy season. Transportation challenge is one factor that influences the challenges that the public health sector supply chain faces regarding medicine distribution and accessibility in Mozambique.



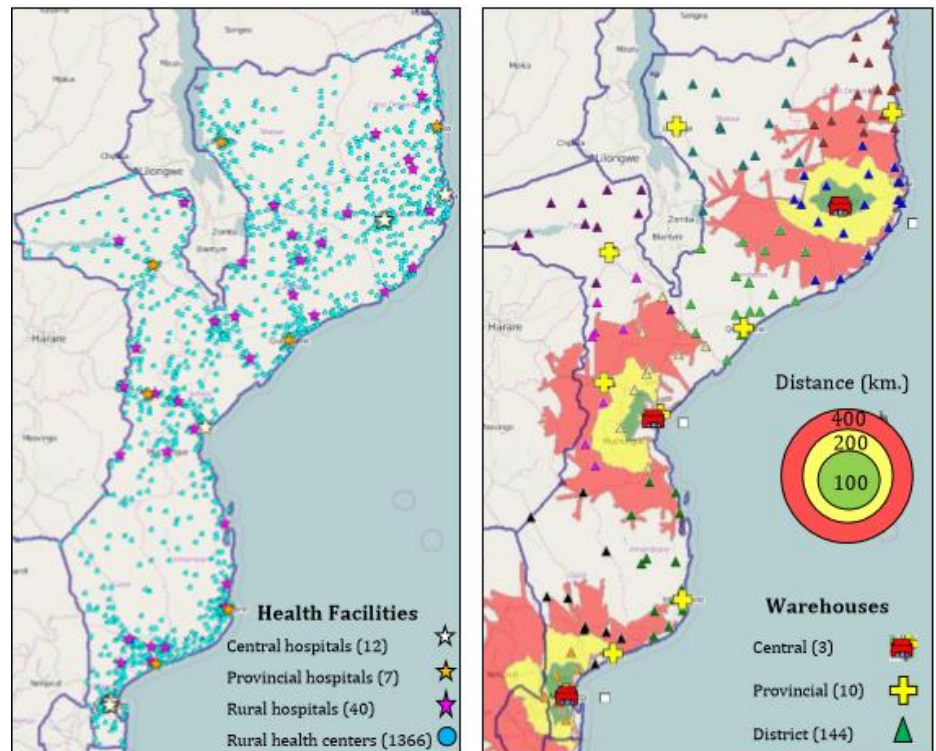
**Figure 3: Gaza province regional highway**

## Rural hospitals and Dispensaries location

The Ministry of Health in Mozambique has constructed 1400 health centers in the rural areas across the country. A good number of them serve as storage for medicines and other health products.

However, the health centers are on average 48 km away from district warehouses where they are supplied from, even worse other dispensaries are located 75 km away from district facilities. Due to

devastating road conditions and long driving distance about 15% (210) of rural facilities and clinics can only be reached during the dry season, leaving thousands of people without proper treatment during the rainy season.



**Figure 4: Pharmaceutical Supply Chain- Health Facilities and warehouses**

## Chapter Four:

# **Imperial Health Sciences' solution to Malawi's healthcare challenges**

An effective supply chain model established by Imperial Health Sciences to get essential medicines to the people of Malawi has successfully achieved this goal, and, in addition, it has resulted in the growth and development of a local logistics service provider.

### **The problem**

Like Mozambique medicines and vaccines were procured and distributed by the Ministry of Health and or a parastatal agency closely linked to the Ministry in Malawi. The typical model is that the manufacturers ship the medicines to the Central Medical Stores, which, using a government owned fleet, and distributed in bulk to a district or regional warehouses. However, the drug distribution needs within the country usually overwhelmed the government, leading to very poor performance and significant stock outs of essential medicines and other health products.

### **The solution**

With an immediate need for a structured and sustainable approach to providing high quality transport, warehousing, and other supply chain services for Ministries of Health in developing countries, including Malawi. Imperial Health Sciences took up the challenge to develop a model that meets this need, working closely with the US Government through its USAID-Deliver Project developed a local solution that has proved to be highly successful as it ensures the efficient delivery of medicines and other commodities to Malawi's more than 640 healthcare facilities each month. Imperial Health Sciences joined forces with Cargo Management Solutions, a small local cargo and express courier company in Malawi. Through knowledge and



skills transfer from Imperial, Cargo Management Solutions is now capable of providing transport and distribution services in Malawi for US Government funded health products and other primary healthcare products.

### **The outcome**

As a result of this Imperial intervention, nearly 100% of US Government funded healthcare commodities are now delivered within the scheduled 10 to 15day window, while more than 99% of proof of delivery slips are reconcilable and stock-out rates of products have been reduced by 60 to 70%. Cargo Management Solutions has also transitioned from a small warehousing company with some transportation function into a professional third party logistics provider. Imperial helped the company to develop standard operating procedures and key performance indicators for all aspects of its business and to implement transport and route planning. This supply chain model has proved its value in Malawi, and going forward, it can be replicated in other regions with healthcare delivery challenges.

## Chapter five:

# **Conclusion and Recommendations**

Firstly, Mozambique and Africa, in general, are not the only places with such challenges in the healthcare supply chain, the public health supply chain especially the transportation problem, has to be approached as a particular function in my view.

Secondly, just like the challenges encountered in Malawi whereby the ministry health had many subcontractors to do procurement and distribution (the whole supply chain) of medicines. In Mozambique the situation is quite the same, medicines are procured by the ministry of health which hire different subcontractors for every sector of the supply chain. The challenge here, is how can the government appoint a unique company or agency to be responsible for all the procurement, distribution, warehousing, etch... in Mozambique?

Finally, transportation plays a major role in the supply chain and the activities involving transportation appear in various section of a supply chain. In my opinion without a linking of transportation, there is no supply chain strategy solution that can bring its full play. In other words, in order to solve supply chain in Mozambique the transportation sector has to be the first challenge to be tackled.

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