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Challenges of Medicine Supply in Nigeria

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ABSTRACT

A functional health product supply chain system is the backbone of quality healthcare services. The phenomenon not only guarantees the delivery of appropriate health products to the end-users, but it also ensures that health system planners receive critical information on the need, demand, and consumption of products, thus, contributing to better service delivery. Unfortunately, difficulty with medicine or vaccine selection, procurement, distribution, inventory management and storage infrastructure form critical components of some of the challenges that mostly result in stock-outs of essential medicines in Nigeria. In this study, challenges relating to medicines or vaccines stockouts were identified; as well as those relating to poor data management of medicines and vaccines supply. Furthermore, financial constraints, poor information management and inadequate human resources were identified as parts of the challenges confronting the supply chains for medicines in the country. By and large, this study serves as a wake-up call to policymakers and regulators on the need to prioritise the critical sector of the supply chain system for medicines and vaccines in Nigeria. There is a need for effective strengthening of the system through adequate budgetary provision.

Keywords: Supply, Vaccine, Management, Medicine, Challenges

INTRODUCTION

Access to safe, effective, quality, and affordable essential medicines and vaccines is important for sustainable development. This factor is critical to achieving universal healthcare coverage just as effective health product supply chains are indispensable in ensuring access to quality medicines and vaccines [1]. Health product supply chains assure consistent availability of high-quality medicines, vaccines, and health products at health service delivery points in the most cost-effective and timely manner [2]. A functional health product supply chain system is indeed the backbone of quality healthcare services. The phenomenon not only guarantees the delivery of appropriate health products to the end-users, but it also ensures that health system planners receive critical information on the need, demand, and consumption of products, thus, contributing to better service delivery [2]. The importance of supply chain management is widely acknowledged, however, access to quality essential medicines in developing countries including Nigeria continues to be a challenge [1]. Challenges associated with medicine supply chain, in Nigeria, have been identified in the literature ranging from poor infrastructure, weak policy or regulatory implementation and quality compromised by substandard or counterfeit medicines. Other challenges such as stock-outs, poor supply chain practices (e.g., poor inventory, poor forecasting, etc.), and inadequate human resources, amongst other factors, have been reported [3]. To mitigate some of these challenges and improve the efficiency of medicines supply chains in Nigeria, some strategies have been implemented including the development of policies and programs such as the National Drug Policy, Nigeria Supply Chain Policy for Pharmaceuticals, National Drug Distribution Guidelines, regulation of human resources development, and engagement of professionals or personnel with relevant skills [6]. Despite these strategies, the supply chain system, in Nigeria, remains weak and inefficient [1]. So far, some studies, aimed at identifying the challenges associated with the supply chain systems for medicines or vaccines, have been conducted in

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Nigeria [5]. However, no study has systematically reviewed the challenges. This study, therefore, analyzes available literature on the challenges of medicines and vaccines supply chain system in Nigeria.

Challenges of medicines and vaccines supply chain in Nigeria

While medicine and vaccine supply chains are recognized, globally, as a key driver of access to medicines, evidence indicates that the system is often faced with many challenges. This paper identified the challenges confronting medicine supply chains, as well as the vaccine supply challenges in the country. Below are the factors:

- **Human resource challenges:** Professionally, pharmacists play substantial roles in several aspects of medicine supply chains, yet not without challenges in aspects such as forecasting, procurement, inventory control, distribution and logistics management information system as reported by some authors [4]. Lack of support for personnel involved in medicine logistics and killing of personnel due to insurgency, inadequate personnel, lack of human resources, as well as corruption, are some of the medicine supply chain challenges affecting some states in Nigeria [8]. In a study to evaluate access to immunization services in the Southern and Northern regions of Nigeria, inadequate human resources and vaccines were reported at service delivery points [9].
- **Financial challenges:** An analysis of the expanded program on immunisation (EPI), indicates that there was poor coverage of the program due to shortage in vaccine supply and low funding for the program [10]. Furthermore, corruption concerning funds meant for medicine supply, poor or inadequate funding, and lack of funds are some of the medicine and vaccine supply chain financial challenges, that have been reported by authors [10].
- **Delay, transportation, and distributions challenges:** Challenges related to delays in supply and operational logistics are commonly highlighted in studies. For example, delay in importation and difficulty in maintaining the delivery vehicles in the supply of antimalarials were identified in a study in Nigeria [13]. Similarly, delay in the distribution of medicines for multi-drug resistant tuberculosis, due to delay in the submission of inventory reports, coupled with inaccurate reports and transportation challenges such as breakdown of vehicles have been reported by some authors. Inability to maintain optimum vaccine temperatures in delivery vehicles was also reported as a vaccine supply chain challenge in an evaluation of cold chain technology on measles vaccines [14]. A study reported the interruption of Tuberculosis (TB) drugs supply handled by logistics company, due to ineffective distribution of the medicines to the health facilities. Insecurity during transportation of vaccines, inability to maintain the integrity of vaccines in the supply chain, and logistics distance between manufacturer and Nigeria were all identified as vaccine supply challenges in a recent study [12]. There are equally other challenges including damaged products and packages, unorganised supplies due to multiple distribution channels in the country which is associated with a high level of pilferage and loss on transit [1].
- **Policy and standard operating procedure challenges:** Issues around poor policy or policy implementation rank among major challenges confronting the medicine supply chain system in Nigeria. A recent qualitative study, for example, highlighted the challenges posed by the lack of stringent policies or weak implementation of existing policies on the distribution and quality of medicines in the country. Additional evidence implicates weak supply chain practices and a poor system of regulation [1, 2]. Challenges such as poor procurement, incomplete forecasting, data collection and management, sub-optimal implementation of policies have also been reported [4].
- **Infrastructure and storage challenges:** In a survey among health workers, 62% of respondents mentioned inadequate storage facilities for medicines as one of the challenges encountered in the distribution of ivermectin [15]. Disruption of the supply chain through the destruction of storage facilities is similarly noted [2]. Substandard, inadequate vaccines storage facilities have also been identified especially in the local government areas of Nigeria. Some of the challenges that affected cold chain performance were inadequate dry and cold chain storage facilities [11]. A study on the storage practices of vaccines in a state in Nigeria reported that only 28.6% of the health facilities had functional thermometers in their stores.
- **Medicines or vaccines stockouts:** Other challenges commonly encountered include stock-outs, substandard medicines, inadequate supply of vaccines, regular stock-outs of essential medicines due to inefficient inventory management systems. In a study on the impact of vaccine stockouts on the immunisation status of children, a lot of vaccine stockouts were reported [7]. Shortages and unreliable vaccine supply were reported as parts of the reasons for incomplete immunization and a barrier to immunisation uptake by children in some studies .

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- **Technical issues:** Suboptimal medicine infrastructure, substandard or use of archaic equipment in handling vaccines as well as poor monitoring of the required standard temperatures for the vaccines are among technical issues often encountered in the supply chains for medicines in Nigeria [16]. inadequate ice packs to maintain optimum temperatures in the cold chain was reported as a challenge during a study on Polio immunization challenges. Lack of stable power supply which leads to variability in temperatures of the vaccines has been reported as one of the challenges of vaccine supply management in Nigeria. Another study in 52-low-middle income countries which includes Nigeria to determine the availability of asthma medications discovered inefficient procurement systems for the asthma medications in these countries [19].
- Irregular supply of vaccines has also been mentioned as one of the challenges encountered in Hepatitis B vaccination, just as poor equipment and corruption are part of the identified challenges associated with medicine supply chains in Nigeria [17].
- Poor data management of medicines and vaccines supply: Poor data collection, quality and use of data are some of the vaccine supply chain challenges reported in a study in Lagos state Nigeria. Sub-optimal data on vaccine stock has also been reported in a study on vaccine wastage in Nigeria. Poor reliability and availability of data for forecasting and decision making were further reported [12]. Overall, these findings suggest the need for future studies to prioritise rural-urban or regional differences in medicine and vaccine supply chain systems in Nigeria.

CONCLUSION/RECOMMENDATION

Summarily, difficulty with medicine or vaccine selection, procurement, distribution, inventory management and storage infrastructure form critical components of some of the challenges that mostly result in stock-outs of essential medicines in Nigeria. Challenges relating to medicines or vaccines stockouts were identified; as well as those relating to poor data management of medicines and vaccines supply. Furthermore, financial constraints, poor information management and inadequate human resources were identified as parts of the challenges confronting the supply chains for medicines in the country. Furthermore, this study found that frequent breakdown of vehicles coupled with poor road network system contribute to delay in the distribution of medicines in Nigeria and the finding is consistent with reports from other low-middle income countries such as Malawi. By and large, this study serves as a wake-up call to policymakers and regulators on the need to prioritise the critical sector of the supply chain system for medicines and vaccines in Nigeria. There is a need for effective strengthening of the system through adequate budgetary provision. Infrastructural development and regular availability of electricity supply are keys to the success of the supply chain system for medicines and vaccines in the country. Also, there is an urgent need for a deliberate effort aimed at effective implementation of relevant existing policies in the sector.

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