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Understanding Stock-Out of Pharmaceuticals in Timor-Leste: A Case Study in Identifying Factors Impacting on Pharmaceutical Quantification in Timor-Leste

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Abstract : Stock-out of pharmaceuticals is a common issue at all level of health services in Timor-Leste, a small post-conflict country. This lead to the research questions: what are the current methods used to quantify pharmaceutical supplies; what factors contribute to the on-going pharmaceutical stock-out? The study examined factors that influence the pharmaceutical supply chain system. Methodology: Privett and Goncalvez dependency model has been adopted for the design of the qualitative interviews. The model examines pharmaceutical supply chain management at three management levels: management of individual pharmaceutical items, health facilities, and health systems. The interviews were conducted in order to collect information on inventory management, logistics management information system (LMIS) and the provision of pharmaceuticals. Andersen' behavioural model for healthcare utilization also informed the interview schedule, specifically factors linked to environment (healthcare system and external environment) and the population (enabling factors). Forty health professionals (bureaucrats, clinicians) and six senior officers from a United Nations Agency, a global multilateral agency and a local non-governmental organization were interviewed on their perceptions of factors (healthcare system/supply chain and wider environment) impacting on stock out. Additionally, policy documents for the entire healthcare system, along with population data were collected. Findings: An analysis using Pozzebon's critical interpretation identified a range of difficulties within the system from poor coordination to failure to adhere to policy guidelines along with major difficulties with inventory management, quantification, forecasting, and budgetary constraints. Weak logistics management information system, lack of capacity in inventory management, monitoring and supervision are additional organizational factors that also contributed to the issue. There were various methods of quantification of pharmaceuticals applied in the government sector, and non-governmental organizations. Lack of reliable data is one of the major problems in the pharmaceutical provision. Global Fund has the best quantification methods fed by consumption data and malaria cases. There are other issues that worsen stock-out: political intervention, work ethic and basic infrastructure such as unreliable internet connectivity. Major issues impacting on pharmaceutical quantification have been identified. However, current data collection identified limitations within the Andersen model; specifically, a failure to take account of predictors in the healthcare system and the environment (culture/politics/social. The next step is to (a) compare models used by three non-governmental agencies with the government model; (b) to run the Andersen explanatory model for pharmaceutical expenditure for 2 to 5 drug items used by these three development partners in order to see how it correlates with the present model in terms of quantification and forecasting the needs; (c) to repeat objectives (a) and (b) using the government model; (d) to draw a conclusion about the strength.

Keywords : inventory management, pharmaceutical forecasting and quantification, pharmaceutical stock-out, pharmaceutical supply chain management
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