

# Review of: "An Analysis of Pharmaceutical Inventory Management at a Leading Teaching and Referral Hospital in Kenya"

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The publication of an article on the consumption of medicines is always a huge effort that must be highlighted, particularly in developing countries, since not all our hospitals that have the facilities to manage their warehouses and pharmacies with computerized means. For this reason, it is important to mention that this paper brings to public knowledge problems that every worldwide hospital faces every day, mainly in developing countries, where managers struggle to ensure full stock of medicines, proper pharmaceutical inventory management and avoiding cyclic stockouts.

- The availability of essential and non-essential medicines every year is an important issue to understand the amount of unsatisfied demand. It is worth to mention that essentiality might be different depending on the service offered by each hospital according to their level of complexity.
- In this study, it would have been interesting to know what kind of hospital is Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH) in Kenya, the number of beds, number of operating rooms, available specialties, etc., in order to make comparisons.
- Regarding the study Design: I wonder if this is an ecological study, since the analysis is not based on individuals.
- Sample size: Authors should have presented figures and explain the sampling method instead of preaching the universal techniques they used.
- Data analysis: Tools such as Therapeutic Category (TC), Always Better Control (ABC), and Vital Essential and Non-essential (VEN) analyses are often used in published papers. These methods alone are not providing us the real picture of medicines access, because they are not telling us their continuous availability in health facilities, as it is challenging to provide adequate service in the health facilities. Therefore, effective inventory management is required to balance inventory expenditure against demands medicines.

Some authors are concerned with ABC-VEN analysis since, the former is prone to miss the control of vital items in B and C classes as it provides more emphasis on the cost of each item instead of the quality, whereas the VEN analysis misses the economic importance of each item.

The analysis is restricted to the cost of the product but not to the quality. In the list presented by the authors we find medications such as erythropoietin, flucloxacillin, amoxicillin/clavulanic whose presentations are broken down as different items and considered separately. For example, if we add the two presentations of erythropoietin, they will rank second

among the medicines by their cost. This is not happening when we use ATC-DDD method.

It is striking that there is only one oncological drug in the list presented and very few biologics, which are always on top of expensive medicines that demand considerable effort and sacrifices to acquire them and the budgetary impact it entails. This might mean that the hospital being studied does not receive patients with high-cost diseases.

- Last but not least is to point out that 2020 was an atypical year due to the SARS-CoV-2 pandemic. Therefore, it is not the best year to establish comparisons of drug consumption.