
When the Problem Isn't the Problem



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Private healthcare facilities in low- and middle-income countries may not have all medical supplies in stock, but collaboration mitigates individual clinic level shortages. Policy design should not ignore this.

In low- and lower middle-income countries, a large proportion of the population seeks healthcare in the private sector, making these healthcare providers an important channel for achieving universal health coverage, part of the United Nations Sustainable Development Goals (SDG #3). Kenya, for example, has private, low-cost, primary healthcare providers that serve the low-income urban population. A commonly accepted notion is that in low- and middle-income countries, stocks of medicine in private healthcare facilities may be patchy – as they are in public sector clinics.

To study the demand and supply of essential medicines in private healthcare facilities, we and our co-authors* systematically surveyed a small sample of managers in Nairobi County, Kenya. To fully understand the underlying context and tease out the nuances of the data collected, we collaborated with colleagues at the University of Nairobi and the [PharmAccess](#)

Foundation.

Disregarding well-worn assumptions around both retail management and public health, we structured conversations with private managers regarding medicine inventory to find out the real issues related to medicine availability that prevent the achievement of SDG #3. Our results were published in [***Production and Operations Management***](#). Our findings regarding both under- and overstock challenge the common notions around supply chain management in this setting.

The World Health Organization recommends 416 essential medicines for [**Kenya**](#). In Nairobi County, we found that rather than every single clinic stocking the same large range of drugs, they routinely have access to what is necessary at the aggregate level, through their own networks.

Our on-site interviews with 39 facility managers in 2018 revealed not necessarily a lack of supply of vital medicines, but a combination of inventory management problems and unorthodox – to outside eyes – means of laying hands on the right medicines at the right time.

Inventory management issues

Our interviewees were usually the sole person running the private health facility, so inventory management was one of many hats the manager had to wear. In the interviews, we found several hurdles that influenced the demand and supply mismatch of medicines.

Managerial resource constraints: Time and human resources are in limited supply. A facility might start as a small venture but as it rapidly grows to fit the needs of the community, the staff does not increase, making inventory management a lower priority.

Inventory control systems: Although facility managers understand aspects of inventory control, little consideration is given to the system itself. Decisions are largely based on intuition and experience, making little use of historical data. In our sample, 44 percent had no formal inventory control system.

Inventory control skills: A lack of awareness of essential factors such as lead time – how long in advance a medicine must be ordered – marked our interviews. In fact, most managers order when they are “almost out of stock” instead of in a forward, planned way.

Cashflow constraints: Cashflow is a huge problem. All 39 facilities believe working capital flow is a constraint on inventory management. Although credit is available from suppliers, the managers do not want to feel “indebted” to suppliers.

Inventory control motivations: Amongst our interviewees, two key motivators are minimising costs and providing the best possible service to clients. They rely on other local pharmacies for out-of-stock medicines.

Suppliers: Private facilities have access to several wholesale suppliers. Through bulk purchase promotions, some suppliers encourage overstocking of certain medicines. When a private healthcare facility has an overstock of medicine, patients are more likely to be prescribed that drug, even as off-label use. This is a practice sometimes known as “demand shaping” in operations management literature.

Retail management or public health?

Our study is a balance between operations management and public health. Business scholars and practitioners in supply chain management often assume that with sufficient data, we can distil what works on a universal level; what we learned works in Mumbai should also apply in Mombasa. Of course, this isn't true, as we found in [earlier research](#).

On the other hand, the public health community may doubt that the discipline of business operations management can meaningfully contribute to equitable healthcare delivery for the poorest of the poor. Although operations management does not work with universal laws like physics, there are tenets of theory and analytical tools which apply to all contexts. Our work is the fine balance between the constructs and tools of operations management, wedded with the lenses of equity, and community context understanding in which the public health community excels.

To capture the right data, context is vital and cultural anthropology plays a role. The user experience expert in Ohio is not necessarily the best person to create an interface for users in Nairobi. Knowing what is user-friendly for a manager in Nairobi requires a localised focus group. Designing a technological tool to capture data demands a bottom-up context. Only through watching shopkeepers at work can an interface designer understand the context they're operating in, and importantly, create an adapted tool that may require less training and achieve faster uptake because it is closer

to the local style of working.

Streamlining supply chains

To achieve SDG #3 targets, drug supply chains in the public and private sector must be streamlined. In this study, amongst the private healthcare facilities in Nairobi County, supply shortage is not an issue. The assumption that overstock of medicines is acceptable is clearly incorrect. Changing prescriptions based on stock can harm patients.

Our study also debunked the assumption that there isn't enough stock flowing in the private system. Constraints on credit availability, blind spots about overstocking (and associated costs) and managerial capacity constraints may better explain stock availability issues. When working capital credit is constrained, overstock of one item leads to less-than-optimal stocking of other medicines. This may reduce the business sustainability of the healthcare facility.

The overstock of medicines was assumed to be benign in previous research. What we found is that not only does overstock lead to substantial holding costs and capital tied up in a single solution, worryingly, the healthcare managers admit to changing their prescription behaviour based on what they have in stock.

Rather than looking at individual drug availability metrics or service levels, focus in this case should be at a slightly more aggregate level. If every private clinic and every pharmacy in Nairobi County stocks the entire assortment of products, this may not be optimal for society or for the health of the community. Our limited way of thinking about competition in retail is coarse: If I have a clinic here, then the clinic next door is my direct competitor. Measuring demand, supply and retail competition and collaboration in the right way is what will foster collaboration amongst private healthcare facilities.

In reality, we understand from the context that this is not the nature of competition on the ground. Managers and policy makers should attempt to understand where such collaboration happens and then make sure that the performance measurement or incentivisation metrics do not impose a Western-centric model of retail competition.

Solution sets are evolving dynamically in the area of supply chains in public health. Our work highlights where the challenges lie. More research will continue to play a role, as others try to design new vibrant solutions instead of relying on old assumptions.

* [Varun Karamshetty](#), [Harwin De Vries](#), [Sarah Dewilde](#), [Warnyta Minnaard](#), [Dennis Ongarora](#) and [Kennedy Abuga](#)

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About the research

["Inventory Management Practices in Private Healthcare Facilities in Nairobi County"](#) is published in *Production and Operations Management*.