Short Communication

Availability of essential medicines in public hospitals: A study of selected public hospitals in Nakuru County, Kenya

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The aim of this study was to confirm the level of availability of essential medicines in public hospitals in Kenya and the factors leading to this. A cross-section approach was adopted for the research which was conducted across several public hospitals in Nakuru County. Data was collected using questionnaires as the main tool. The findings revealed that majority of the essential medicines that include common antibiotics, common analgesics, antihypertensives, emergency drugs and pediatric formulations were found to be stocked out. Stock outs were caused by poor distribution (91.2%), issues of funding (58%), inappropriate selection (58%), and irrational use (56%) of essential medicines.

Key words: Health system, essential medicines, public health.

INTRODUCTION

The World Health Organisation (WHO) defines essential medicines as medicines that satisfy the needs of majority of the population and therefore should be available at all times, in adequate amounts, in appropriate dosage forms and at a price the individual and community can afford (WHO, 2003). Availability of medicines is commonly cited as the most important element of quality by health care consumers, and the absence of medicines is a key factor in assessing the quality of health services (Chuchu, 2006).

Although considerable progress has been made in the last 25 years, since the WHO introduced the concept of essential medicines in 1977; the benefits have been unequally distributed across the global population (Tettah, 2008). Nearly two-thirds of the world’s population is estimated to have access to full and effective treatments with the medicines they need, and majority of these populations are in Asia and Africa (WHO Report, 2009).

Furthermore, the problem may be worsening, as resistance is developing to key medicines for common diseases such as malaria, tuberculosis, and pneumonia. Even though new medicines are being developed to replace those that are no longer effective, frequently these new medicines are more expensive and may require more stringent supervision to ensure they are properly used (Department for International Development (DFID), 2004).

Kimani (2002) in a forum to address Kenya’s health system argues that improving access to essential medicines, and more broadly to health services, is the
key to tackling ill health and reducing mortality rates throughout the developing world.

CURRENT CHALLENGES IN AVAILABILITY OF ESSENTIAL MEDICINES IN KENYA

Supply system

Reliance on certain supply systems can prove severe for a country’s goal of improving access to essential medicines to its populations especially relying on foreign sources (Chaudhuri et al., 2010). Under Kenya’s drug supply system, health centers receive standard kits containing essential drugs from the Kenya Medical Supplies Agency (KEMSA) which sources from other agencies, but this system has been criticized as too rigid and unable to cope with health facilities' varied needs (Kimani, 2002). The government is therefore piloting a new “pull” system where drug supply is based on orders from health centers, with the hope that this will improve provision of essential drugs in the quantities required.

Frequent stock outs

A WHO (2009) study in Kenya published in the American Journal of Tropical Medicine and Hygiene found that two years after Artemisinin Combination Therapy (ACT) was introduced as the first-line treatment for malaria, one in four surveyed facilities had none of the four recommended weight-specific ACT treatment packs in stock, while three in four were out of stock of at least one of the packs. The shortages sometimes lasted for several weeks. According to Kimani (2002), the government has been working to improve the efficiency of the national drug supply system.

Funding gap

WHO (2012) reports that Kenya now spends 8.87% of the national health budget on medicines, down from 10% in 2009 to 2010 and 12% less than half the WHO's recommended 34%. Lu et al. (2011) indicate that in order to achieve the global commitment to ensuring access to essential affordable medicines by 2015, an increase in the spending on medicines in low and middle income countries is required.

Current availability of essential medicines

A study done by Health Action International Africa (HAI, 2010) in Kenya, revealed that essential medicines are available in only 50% of lower level health facilities (dispensaries and health centers) and in about 65% of hospitals in Kenya. Recent essential medicines surveys by the WHO in 39 countries mainly low and low- to middle-income countries, including Kenya, found that while there was wide variation, average availability was 20% in the public sector and 56% in the private sector (WHO, 2010).

Orenge (2012) reports that public health facilities were experiencing an acute shortage of drugs thereby forcing hospitals to use funds meant for development to buy emergency medicine from local pharmacies. In Nakuru County, data obtained from the pharmaceutical agency indicated that in 2010, provincial, district, and sub-district hospitals in the county registered an average availability of 50% for common classes of medicines, while the lower-level facilities had an average of 60% of essential medicines in stock (MOH, 2010). In 2011, the stocks averaged 53% in hospitals and 60% in lower-level facilities (MOH, 2011). In all instances, two to three essential drugs were out of stock in each of the major classes identified by the researcher. According to county data, the stock outs were widespread throughout the county with minimal differences.

It is against this background that this study [Using a cross-sectional approach to describe the availability of essential medicines in public hospitals (Kothari, 2009)] was conducted, with the purpose of ascertaining the unavailability of essential medicines and the factors that contribute to the availability of essential medicines in Kenya’s public hospitals. The goal of this study was to provide reasonable recommendations for policy makers on how to improve this issue throughout the country.

METHODOLOGY

Data were collected through self administered semi structured questionnaires on sample of 44 facilities selected using sample tables (Robert and Darley, 2004). The sampled hospitals in Nakuru County are as follows:

1. Rift Valley PGH
2. Rongai HC
3. Naivasha DH
4. Molo DH
5. Bahati DH
6. Gilgil SDH
7. Njoro HC
8. Subukia HC
9. Elburgon SDH
10. Langa Langa HC
11. Olenguruone SDH
12. Maela HC
13. Kuresoi HC
14. Mbogo-Ini HC
15. Upper Solai HC
16. Kamara HC
17. Engashura HC
18. Mauche HC
19. Keringet HC
20. Mau Narok HC
21. Kabazi Health Centre
22. Mbogo-Ini HC
23. Ndundori HC
24. Kabatini Health Centre
25. Kapkures Health Centre
26. Lanet Health Centre
Figure 1. Number of common antibiotic, common analgesic and antidiabetic drugs O/S. O/S: Out of stock.

DISCUSSION

The most out of stock drugs was indicated to be analgesics (91% of the respondents indicate that 1 to 3 classes were out of stock) (Figure 1). 56% of the respondents indicate that out of stock have been experienced in 1 to 3 classes of antidiabetic drugs in the last 6 months, and 33% of the respondents indicate that they have experienced out of stock in more than 5 classes of the antidiabetic drugs. Figure 1 also shows that 75% of the respondents indicated that they have experienced out of stock in 1 to 3 classes of common antibiotics in the last 6 months with 21% saying that they have also been out of stock in 3 to 5 classes of drugs.

Antiretroviral (ARV) and antimalarial drugs have experienced low stocking, whereby 68% of the respondents indicated that none of the classes of ARVs has been out of stock in the last 6 months and 21% saying that they have experienced out of stock in 1 to 3 classes. 60% of the respondents indicated that none of the classes of antimalarial drugs has been out of stock, while 39% indicated that they have experienced out of stock in 1 to 3 classes of the drugs.

Out of stock have also been experienced in the last 6 months in antihypertensive drugs, emergency drugs and pediatric formulations by 48, 84 and 88% respondents, respectively. The data (Figure 3) also shows that 16% of the respondents indicated that out of stock have not been experienced in any of the classes of emergency drugs in the last 6 months.

This study found that majority of the essential medicines that include common antibiotics, common analgesics, antihypertensives, emergency drugs and pediatric formulations are stocked out up to a period of a month on an average of 3 classes of the drugs.

Antimalarial and ARV drugs are some of the essential drugs that are less stocked out; however, they too have between 1 and 2 months stock out periods (Figure 2). 63% of the respondents indicated that poor distribution is a factor that causes stock out of essential medicines in public hospitals.

The causal factor that respondents felt most strongly about was inadequate funding (Table 1). Funding of public hospitals comes from the government; therefore, it is clear that the government allocations are not adequate for sustaining quality healthcare through the continuous provision of medicine. Chuchu (2006) asserts that low budgetary allocation to support the Medium Term Procurement Plan (MTPP) was found to be a significant contributor to drug shortages at public health facilities.

Inappropriate selection of medicines is another factor leading to stock outs of essential medicines in public hospitals. The selection of the medicines usually takes place in the procurement stage of the supply chain involving the pharmacists and hospital management team. The responsibility of the pharmaceuticals is often held by the pharmacists, clinical officers, or nurses. In most of the hospitals in this study, a Medicines and Therapeutic Committee did not exist and this hindered the use of best practices in medicine management. According to the WHO Essential Medicine List (EML, 2010), rational medicines selection processes should be in use, based
Table 1. Respondents' opinions on causes of stock outs.

<table>
<thead>
<tr>
<th>Opinion</th>
<th>Funding</th>
<th>Inappropriate selection</th>
<th>Poor distribution</th>
<th>Irrational use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>57.9</td>
<td>21.1</td>
<td>21.1</td>
<td>19.3</td>
</tr>
<tr>
<td>Agree</td>
<td>33.3</td>
<td>63.2</td>
<td>42.1</td>
<td>56.1</td>
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<tr>
<td>Not sure</td>
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<td>5.3</td>
<td>33.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>8.8</td>
<td>10.5</td>
<td>3.5</td>
<td>19.3</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Multiple responses were allowed on questionnaire.

Figure 2. Number of anti-malarial and ARV drugs O/S. O/S: Out of stock.

Figure 3. Number of antihypertensive, emergency and paediatric formulations drugs O/S. O/S: Out of stock.
on national or local essential drug lists and treatment guidelines. The last factor identified was the irrational use of medicines, which greatly hinders the hospitals’ goal of continuous availability of essential medicines. According to Management Sciences for Health (2011), mechanisms at the national and health-facility levels for promoting appropriate use of medicines are weak. Although, the third edition of the National Standard Clinical Guidelines has recently been published and Standard Clinical Guidelines (SCGs) for vertical programs exist, the mechanisms which are responsible for ensuring compliance to these SCGs, such as Medicines and Therapeutic Committees (MTCs), are either weak or not functional in most facilities and must be strengthened and empowered to perform their duties.

The findings of this study confirm that the four factors affecting the availability of essential medicines in public hospitals in Kenya are inappropriate selection, poor distribution, inadequate funding, and irrational use. The following are the author’s recommendations for policymakers.

**Inappropriate selection**

Officers in charge of procurement in public hospitals are sometimes doing a poor job of selecting medicines and are not necessarily following the WHO EML (2010) rational medicines selection processes.

Strict use of WHO EML and involvement of users in selection processes is therefore recommended. Also, Medicines and Therapeutic committees should be empowered and involved in medicine selection.

**Poor distribution**

The drug supplier KEMSA is not doing an adequate job of supplying medications, resulting in extended lead times and poor communication between KEMSA and the hospitals, which also complicates the planning process.

Establishment of an elaborate information management system to enhance communication and operations is thus recommended.

**Inadequate funding**

Government allocation for the purchase of medicine and further budgetary allocations by the hospitals are inadequate to ensure continuous availability of essential medicines.

The government should commit itself to providing adequate funds to health services, which in turn will increase allocation for the purchase of essential medicines.

**Irrational use**

This is exacerbated by the lack of sufficient training of prescribers in the hospitals and the absence of Medicines and Therapeutic Committees in most hospitals, coupled with limited use of standard treatment guidelines.

Strict adherence to essential medicines lists and standard treatment guidelines is needed to improve selection and appropriate medicine usage.

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**Competing Interests**

The authors hereby declare that there were no competing interests.

**REFERENCES**


Ministry of Health in collaboration with the World Health Organization and Health Action International-Africa 2013, Nairobi, Kenya.


