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Rush Hour at Chikombedzi Hospital: Water scarcity implications at a Rural Hospital in Zimbabwe

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Abstract
For health institutions, the inadequacy of water compromises health care service delivery and affects social relations and lifestyle of care givers. This paper reports on the coping mechanisms employed by staff and care-takers at Chikombedzi Mission Hospital in rural Zimbabwe. Since 2008 the hospital runs on a one hour's water supply from a low yielding borehole. This ethnographic review draws on the authors' experience as participant observers during the 'rush hour' period (6-7am) when water becomes available at the hospital.
The observations revealed that water shortage has great impact on the quality of patient care delivery. Due to insufficient water availability the hospital has to carefully consider who to admit as inpatient, and the provision of adequate sanitation has been a challenge. Precious time is spent on collection and storage of water, and recruitment and retention of skilled staff such as doctors is difficult under such challenging conditions.
Lack of possibilities for significant investment to address these issues, result in piecemeal and inefficient interventions, and are a typical example of a 'resource gap' greatly hampering daily operations. Increased investment for well-planned infrastructural improvement can result in direct improvement of operations.
Further effort is therefore required to assist rural hospitals - who are currently primarily dependent on patient user fees - to increase their income so that patient care is not compromised.

Key words: water scarcity, institutions, water supply and sanitation

Introduction

Water is indeed life, and there is no community that can survive without it. Having it in the right quantities and quality supports good health, and with any of the two compromised, health is affected. Zimbabwe has gained some great strides [1] in ensuring that access to adequate water supply is improved for both rural and urban communities. However, there are still some communities whose access to water has been affected by their remote location, where government efforts and / or international partners have not been able to adequately support the necessary infrastructure. Chikombedzi area, located in Chiredzi district in the southern part of Masvingo Province, has for years faced serious water challenges. The region falls under the ecological region five, where rainfall is so severely erratic that virtually no crop survives without irrigation [2]. The area is remote, and has a rudimentary road network. Water tables are characteristically low such that drilling of boreholes is not only expensive but good siting are also rare to locate. Where water tables are located, the water is mostly hard and salty, making the use of untreated water unsuitable for clinical use.

Chikombedzi hospital is a referral hospital located in this remote part of Zimbabwe and has 14 rural health clinics that rely on it for referral services. The mission hospital, owned by the Free Methodist Church has a total of 160 beds, with 5 inpatient wards (male, female, paediatric, maternity and a TB ward). The hospital carries out surgical procedures and delivers around 1'200 babies per year. Annually, staff attends to close to 25'000 outpatients, of which around 8'400 are clinic visits by HIV patients and close to 1'500 women and children visiting the Family Health Clinic. The hospital serves a population of approximately 90'000 people. Such high patient numbers are attended to by only 2 doctors supported by 84 other staff [3].

SolidarMed Zimbabwe, a registered Private Voluntary Organization (PVO), works alongside Ministry of Health and Child Care in supporting and strengthening health systems in it's program areas. Recently SolidarMed moved into Chiredzi district, with a special focus on assisting health facilities to improve their basic infrastructure, among others. Site visits at the hospital revealed that it has been operating for years without sufficient running water. The fact that since 2008, the hospital has relied on a one-hour water supply per day motivated the organization to further look into the consequences of the water shortage for the hospital's operations, as well as its coping mechanisms.

Methodology

This ethnographic review draws on authors' experiences as participant observers while staff, patients and care givers carried out their duties during the 'rush hour' period. Additional information was supplied by hospital staff through unstructured interviews. Photographs that were captured within the 6am to 7am hour are used for visual representation to show the desperate situation that staff goes through on a daily basis to ensure that patients care is provided.

Results

The magnitude of the need for water to optimize service provision was displayed by the frantic efforts of staff during the rush-hour of water availability, in order to cope with the hospital's demand. During this 'rush hour' staff has to ensure that their families have filled up as many storage containers as possible. Queueing starts from as early as 4am and one can line up as many containers as they can on a first-come-first-served basis. There are three communal water taps within the hospital compound, which serve 86 hospital staff and their families. Interviews revealed that conflicts during water collection at the water taps have been witnessed. These can, if not resolved, tend to affect patient care, since the same staff members will at times need to work together during patient care.

After filling up containers for private use, the same staff members have to ensure that their work stations have an adequate water supply to take them through the day. With a bed capacity of 160, and waiting mothers' shelter that takes up to 60 pregnant women excluding their care givers, the water needs are quite intense. Staff therefore has to ensure that critical areas such as kitchen, laundry, and sanitary blocks have stored enough quantities, which rarely happens. Though water for basic needs was accessed within 500 meters for staff and patients, several coping mechanisms had to be employed. The objective being to provide at least 15 litres of water per individual patient to cover total basic water needs [4].
It was observed that the vast majority of those collecting water were women. Men were either collecting in small bottles for personal use or were using wheelbarrows to deliver from a water point to different stations. Also, where ladies were communally queueing, at least half of the group would spend over thirty minutes for all their containers to be filled up with an inevitable result that some would go home with empty containers. Such long queueing time has a potential negative result of reducing time for other essential tasks within the home and/or the hospital.

The limited water had a serious impact on adequacy and appropriateness of sanitary facilities. In general sanitary blocks and bathrooms were in an unsanitary state with some patients opting to use the outside space. Some toilets had evidence of not having been flushed for days and the majority were out of order. Only 12 out of the 42 available flush toilets and 4 of the Blair latrines were functional, giving a total of 16 working toilets for the whole hospital. It was therefore clear that water shortage has great impact on quality of patient care delivery and interviews with patients and health care providers revealed that inpatient admission was limited by the lack of sufficient water supply.

Besides inadequate water, the hospital also faces challenges in providing adequate and suitable accommodation. The limited financial resources have not, for time, been directed towards staff housing. Therefore, under such conditions, it is very difficult to recruit and retain critical skilled staff such as doctors. The hospital had gone for many years without a substantive doctor until 2015 when the current two doctors were posted there.

Discussion

The major challenge for Chikombedzi Mission Hospital is the inability to ensure the continuous supply of essential and basic utilities, such as water. The area falls under the jurisdiction of the national supplier, in terms of water provision, the Zimbabwe National Water Authority (ZINWA) [1]. ZINWA has put up infrastructure in the area to supply the hospital, the business centre and the surrounding community. However, the system has never managed to deliver the much needed water. The water station that ZINWA set up was reportedly damaged by floods and was never repaired. Therefore, the community and business centre relies on boreholes. As for the hospital, it relies on a separate borehole which has an hour's supply due to its low yield. This inevitably affects all kinds of services the hospital provides to patients.

Although the hospital is fully committed to providing accessible and quality health services, it does so for a rural population and clientele living in dire poverty. Finding consistent means of financial income to cover the institution's expenses and ensure financial survival is a major challenge for the hospital. The primary hospital income comes from 'out-of-pocket' patient fees and these are deliberately kept low so as to minimise their effects as a barrier to care. Therefore, user fees cannot cover the expenses of new investments and major hospital maintenance, or investing in a new borehole.

Water shortage has created a significant problem with sanitation at the hospital as many of the toilets are non-functional. According to SPHERE minimum standards [4] a hospital of 160 beds, with a Mothers Waiting House of 60 beds, 25'000 outpatient consultations per year and a staff of 84 needs at least 32 toilets. With currently only 16 functional toilets, the hospital is in dire need of additional suitable sanitation facilities.

In addition to the impact that the water shortage has on patient care, the hospital struggles with the lack of professional staff, including the recruitment and retention of doctors. The hard living and working conditions prove a challenge to medical staff to settle and work in this area. Professional staff would rather opt for hospitals in districts that have better road networks and adequate water supply.

Conclusion

From the Chikombedzi experience, one can draw a number of conclusions. Hospital income primarily depends on user fees and to a lesser extent on government funding. With diminishing funding, the hospital has a challenge to cover the day-to-day running costs. Maintenance or replacement of failing and outdated infrastructure is often delayed and critical hazardous situations can eventually lead to the shut down of an institution, further challenging the lives of the already marginalised communities.

The generally weakened health system requires significant financial investments to address the challenges caused by long term underfinancing, and currently external funding is often

needed for this. A paradigm shift is also required at policy level to ensure that some of the health institutions that are considered private (mission) can get government assistance instead of being overlooked on the basis of 'private ownership'.

Although underfunding does have a negative impact on service delivery at hospitals, there is also need for improvement of capacity especially in the area of infrastructure management as this can impact quality of health service delivery, and patient and staff satisfaction. Continued staff improvement is critical to ensure that necessary skills are available within the ones entrusted with the administration and management of health centres.

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