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CHURCH ASSOCIATED HOSPITALS OF ZIMBABWE: MEDICALORGANIZATION PROBLEMS OF ACTIVITY AND THEIR POSSIBLE SOLUTIONS

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Abstract. Like any other group of hospitals, church associated hospitals continue to face medical organization problems. The main aim of this paper is to indicate the medical organization problems of church associated hospitals of Zimbabwe and their possible solutions. This research was achieved through a questionnaire survey, with church associated hospitals being participants. The results were then analysed and put in several categories which gives one a clear picture of the medical organization problems of church associated hospitals of Zimbabwe. As church associated hospitals continue to provide health services to the population of Zimbabwe, the problems these hospitals have need to be solved for better delivery of service. This research also reveals several possible solutions to the existing problems. This involves the government of Zimbabwe getting more involved in the management of church associated hospitals. In addition, struggling church associated hospitals should interact with other successful hospitals for guidance and ideas to improve their own service delivery.

Key words: Church associated hospitals, Population health, Medical organization problems, Zimbabwe.

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Introduction

Zimbabwe is a country in Southern Africa. It has an approximate population of 15 million people. This paper focuses on the medical organization problems of church associated hospitals of Zimbabwe and their possible solutions. As stated earlierchurch associated hospitals face challenges like every other healthcare institution. These problems will be categorized into internal factors and external factors which affect the delivery of service at church associated hospitals of Zimbabwe. Internal factors which affect the delivery of service at church associated hospitals of Zimbabwe include poor infrastructure, shortage of staff, and shortage of drugs. External factors which affect the delivery of service at church associated hospitals of Zimbabwe include issues such as electricity availability, water availability and the state of roads leading to the hospitals. From the past decades researchers such as Xiaoet. al. [1] , Dzimiri et. al. [2], Mukwirimbaet. al. [3] have mentioned church associated hospitals in their variouspublications. However, this paper specifically focuses on the problems faced by church associated hospitals in the year 2020 when the world was hit by the pandemic. Like many other nations, Zimbabwe was also hit by the COVID–19 pandemic. In this paper one will note that some areas in the church associated hospitals were affected by the pandemic. The various experiences of church associated hospitals during the delivery of service will be indicated.

Aim

To reveal the medical organization problems of church associated hospitals of Zimbabwe during the delivery of servce and outline possible solutions.

Tasks

- To outline the number of health workers available at church associated hospitals of Zimbabwe
- To reveal internal factors which affectthe delivery of service at church associated hospitals of Zimbabwe
- To analyse the external factors which affectthe delivery of service at church associated hospitals of Zimbabwe
- To indicate the general equipment availability and reveal a list of equipment shortages
- To highlight challenges faced by church associated hospitals of Zimbabwe

Methodology

The object of the study ischurch associated hospitals of Zimbabwe. **Inclusion and Exclusion criteria:** urban church associated hospitals and rural church associated hospitals of Zimbabwe were included, whileGovernment hospitals and Private hospitals of Zimbabwe were excluded. The total number of church associated hospitals is 62 [4]. The sample size is 50% of the total number of church associated hospitals – 31 participants. Due to COVID–19 regulations it was difficult to find more participants. All the major provinces of Zimbabwe are represented. Matabeleland represents combined results from Matabeleland North, South, East and West. Mashonaland represents combined results from Mashonaland North, South, East and West. Even the marginalized communities such as Binga have a participant. A Sampling Technique was used in the hospitals which were represented by hospital managers, sister in charge, and hospital administrators.

The study designis a **questionnaire survey**.

Before creating the questionnaire about church associated hospitals, an in–depth study about the topic was done. It was revealed, that more suitable questionnaire was elaborated by World Health Organization for investigation in Kenya, East Africa: *Kenya Service Availability and Readiness Assessment and Mapping (SARAM) [5]. SARAM consists of approximately* 400 questions, so it was remodelled according to thefocusof our investigation.Initially the task was to create a questionnaire specifically for church associated hospitals of Zimbabwe. The key word used to construct the questionnaire for this survey was 'evaluation' [6–8]. ln order to reveal the impact of church associated hospitals, the first step was to evaluate the kind of service offered by this group of hospitals. The questionnaire clearly stated that the respondent should participate voluntarily. The actual period of distribution of the questionnaire was 01.06.2020 -31.09.2020 (June 2020 – October 2020).

Data Analysis

All the answers from this survey were typed in English and transcripts were formatted in MS Word for export to qualitative data analysis software. Then on Excel a corresponding/matching code number was assigned to represent the questions. Responses were now added systematically and a concrete spreadsheet was made. Responses were also analysed in terms of how frequently they appeared as well as took account of the context in which it was used. Most importantly, the development of themes and categories were guided by the study objectives, and emergent patterns growing out of the data or standing out were developed in this report. After calculations, graphs, pie charts, line graphs were created. The software used to clean and analyse the data include Microsoft Excel 13.0

Ethical considerations

Permission was sought from the church associated hospitals which participated in this survey. Permission was also sought from the Grodno State Medical University Ethical Committee.The implementation of the work is planned as part of the research work of the Department of Public Health and Health Services on the topic: "Impact of church associated hospitals and religion on health of Zimbabwe's population." The topic was approved at a meeting of the Department of Public Health and Health Services (02.09.2020 *N*º1) the order of rector of GrSMU *N*º23 LD from 07.09.2020.

Results

Health workers available at church associated hospitals

The level (Mean ± standard error) of general practitioners of sample size is (1.94 ± 0.22) GP. About 16.13% of hospitals operate without a doctor. They have visiting doctors such as the district medical officer. The level (Mean ± standard error) of midwives is (11.77 ± 1.40) persons per hospital. The level of nurses is 27.77 ± 2.64 nurses. A midwife is a health professional who cares for mothers and new–borns around childbirth, a specialization known as midwifery. The education and training for a midwife is similar to that of a nurse, in contrast to obstetricians and primatologists who are physicians.

Internal factors which affect service delivery at church associated hospitals

Bed capacity and maternity beds.

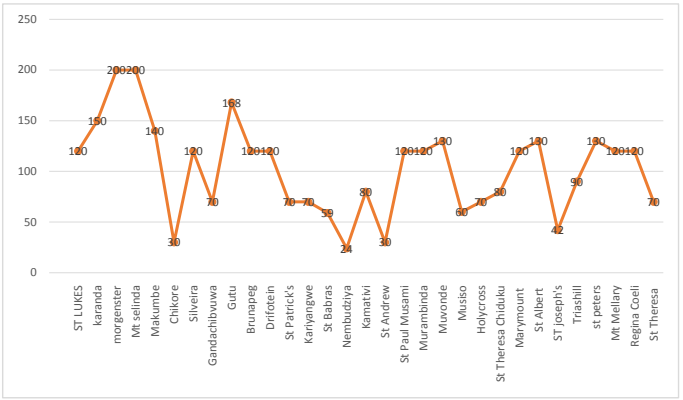

Fig. 1: Illustrating bed capacity of church associated hospitals

All 31 participants confirmed that their hospitals had inpatient care. Inpatient care is medical treatment administered to a patient whose condition requires treatment in a

hospital or other health care facility. The average bed capacity of the sample (Mean ± standard error) is (102.35 ± 8.20) hospital beds. The capacity (Mean ± standard error) of maternity beds is 18.42 ± 1.94 beds.

Accommodation/houses for the staff members

All 31 participants have accommodation for staff. However, some respondents revealed that there is not enough accommodation for all the healthcare workers. Some respondents complimented the accommodation at their hospital. The Silveira respondent said: "The accommodation is good for someone with a family".

Landline telephone, cellular telephone and shortwave radio for radio calls availability

In Zimbabwe landlines are no longer popular these days; institutes prefer to use cellphones for more reliable communication. According to the analysis of the questionnaire, 74.19% of the participants do not havea functional landline telephone. Only 25.81% of the participants hada functional landline telephone. All the participants owned a cellphone which is maintainedby the hospital. Full 100% availability of cellular telephone was registered in this research. None (0%) of the hospitals had shortwave radio for radio calls.

Emergency Services

All 31 participants confirmed that they have 24–hour operational services. There is 100% availability of emergency services for population.

Computers and internet availability

The results of this research revealed that computer availability doesnot mean that there is internet availability. Departments can have computers which are used to capture data but without internet access. Most of the hospitals are located in rural areas and access to internet is through mobile phones. Internet bundles are also expensive. Some hospitals do not have even one functional laptop. Some only have the one computer at the administration block. Of the 31 participants, 12 hospitals (38.71%) do not have any computer. As for internet availability 54.84% church associated hospitals do not have internet connection.

Ambulance services

Figure 2 indicatesthe availability of ambulance services at church associated hospitals.

About 29% of participants indicate other alternatives for ambulance services for population. Chikore Mission Hospital respondent said "We use local people cars as an alternative". Triashill Mission Hospital said "When our ambulance is not functional, we hire from local people's cars". Gutu Mission Hospital said "We have a truck with a canopy which serves as an ambulance".

Toilets availability

Another important question was to check if there is a toilet (latrine) in a functioning condition that it is available

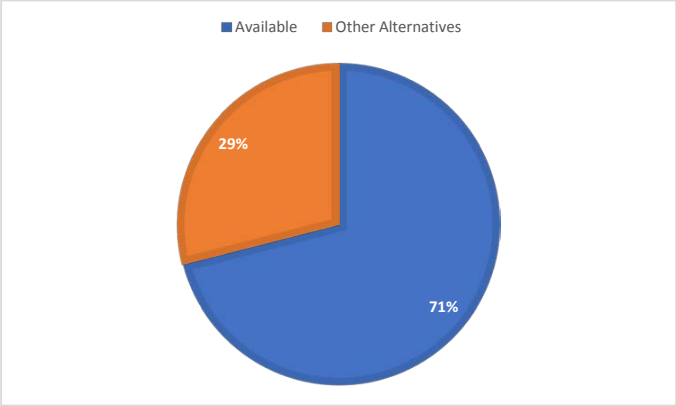

Fig. 2: Indicatesthe availability of ambulance services at church associated hospitals

for general outpatient client use. All 31 participants have a functioning toilet that is available for outpatient client use. Only St Joseph's which is in the city of Mutarethe hospital has cistern flush toilets for outpatient client use. The other 30 participants from the rural areas had a wide range of toilets for outpatient use such as blair, cistern flush, pit latrine and ventilated pit latrine.

Healthcare waste management

From the results of this research it was determined that medical waste was disposed of by using sharp boxes, incinerator and Otway pit for disposal of placenta and open pit for papers. There is 100% availability of incinerators among the participants. When processing equipment for re–use 96.78% use electric autoclave, and 3.22% use non electric autoclave. No other method for processing equipment for re–use was highlighted.

External factors which affect service delivery at church associated hospitals

Fuel availability *(refers to petrol or diesel)*

One of the questions in the questionnaire was about fuel availability. The question was as follows: "How do you rate the availability of fuel for the ambulance on a scale of 1 to 5 .5 being the highest?" The average level (Mean /*pm* standard error) of fuel availability of sample size is estimated as 3.29 /*pm* 0.12. One respondent added a comment to the rating. St Barbra's respondent said: "Ambulances get first preference at fuel service stations".

State of roads leading to the church hospitals

The majority of hospitals in this research are located in the rural, remote areas of Zimbabwe, and one participant is in the city. Figure 3 illustrating the ratings on state of roads.

The most common types of roads are dusty roads, gravel roads and tarred roads. The chart above indicated the ranking of the quality of roads from a scale of 1 to 5. The

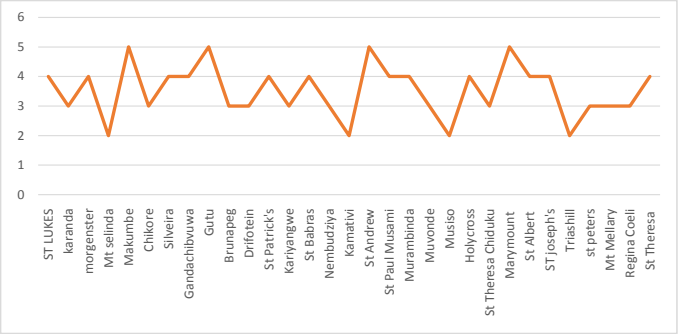

Fig. 3: Quality of state of roads leading to church associated hospitals

average level (Mean ± standard error) of rating of quality of roads is indicated as 3.52 ± 0.16.

Electricity availability and backup plans

All 31 participants are connected to the central electricity grid and confirmed that they have been experiencing load shedding. To counter the problem of load shedding, church associated hospitals have resorted to the following alternatives: 67.8% of the participants confirmed that they either had a fuel operated generator, battery operated generator, or solar power.

Water availability

There is 100% availability of water. The most commonly used water source is tap water. The following sources were highlighted as water back up plans: reservoir, borehole, dam water and water pump. Gutu mission respondent revealed that "Usually this region we experience drought, shortage of electricity, and fuel; Despite their adversity, the staff at Gutu Mission Hospital are hardworking, dedicated and have adapted to serving remarkably well within the limitations and shortages imposed by conditions beyond their control. Water shortage due to power rationing have led to the use of water conserving approaches during procedures."

Availability of general equipment

30 out of 31 participants havean adult weighing scale. Chikore Mission Hospital does not have a functional adult weighing scale. As for oxygen concentrators and oxygen cylinders, before COVID–19 there was enough to go carry out required procedures, but now every participant highlighted that it was no longer adequate. About 53% of the participants had oxygen concentrators and oxygen cylinders, and 47% of the participants do not have oxygen concentrators and oxygen cylinders. Moreover,in the majority, glucose level testing kits are very expensive, there is never enough. The result of this survey indicated that 32% participants had enough glucose level testing kits, and 68% do not have enough glucose level testing kits. Lastly,there was a question about the availability of protective clothing (PPE) for the healthcare workers at each church associated hospital. The results were as follows: 48.39% revealed that they had enough PPE, and 51.61% donot have enough PPE. St Paul Musami respondent said "Before COVID–19 pandemic we had enough protective clothing for the healthcare workers, but now – not".

List of equipment which is in shortages

The majority of the participants have their challenges and the equipment they fail to procure. However, some respondents declined to answer this question because of unknown reasons. The following equipment was indicated by the participants: Ultrasound machine for maternity cases, Anaesthetic machines, Autoclave, Laundry machines and Ironing Machines, Adult weighing scale, Oxygen concentrators and oxygen cylinder, Glucose kits, Theatre equipment, Generator, Computers and internet and Infant incubators.

Challenges faced by church associated hospitals

Not all the hospitals respondents were willing to disclose the challenges they faced. However, the majority of the participants revealed some problems.

The most common problem is patient overload: Musiso Mission Hospital respondent said, "Thousands of villagers are still having to travel for long distances to seek health care services at Musiso Hospital. Several wards lack clinics and few facilities established are poor and have limited accommodation for the staff. The head of Karanda Mission Hospital, said its patient numbers had more than doubled in the past months. That quite stresses on our resources – our doctors, nurses, medicines, our surgical supplies," He continued, "Karanda is probably seen as the port of last hope for some people who have failed to access services elsewhere in the country. You can see by the queues that some people may wait for three days to get seen by a doctor".

Shortage of staff accommodation was highlighted by many hospitals. Church hospitals are situated in a mission station which has a school, church, hospital and residential quarters. Sometimes accommodation is not enough to cater for staff from the school, church and hospital.

Respondents highlighted bad roads which lead to the hospital.

A shortage of useable resources at the hospital leads some of the hospitals to compromise which was another problem: shortage of fuel for the cars and fuel operated generators, revenue shortage to pay incentives for doctors and other staff members (said Mt Selinda respondent), shortages of medicines and food for patients was mentioned by Chikore mission hospital, shortages of protective clothing because of the COVID–19 pandemic, shortages of glucose kits because they are expensive, lack of internet and computers, lack of modern–day diagnosing equipment, and lack of refrigerators for storing medication. One more problem is the need for doctors at the hospitals; some of the mission hospitals only have visiting doctors. "Hiring specialist is also a very big challenge, only a few hospitals have a specialist. It is a very big challenge to hire specialized doctors

such gynaecologists, ophthalmologists", - said Morgenstern respondent.

Discussions

Internal factors which affect service delivery at church associated hospitals

Bed capacity

Figure 1 in the results section illustrates the bed capacity of church associated hospitals. One could expect the figures of bed capacity to be the same, But the chart shows that one hospital for example Karanda Mission Hospital has 200 beds, meanwhile St Joseph's has 42 beds. The reasons why all the hospitals vary in size are as follows: Looking at the history of church associated hospitals we see that they were established by different missionaries from all over the world; hence, they wouldnot be the same size. Some researchers who have covered the history of church associated hospitals include Matikiti [9], Dube [10] and Manyonganise [11]. Church associated hospitals from the past were established in mission stations. These stations included a school, church and hospital. These three things vary in size for example some mission stations have a very large school and a small hospital /clinic and church. Lastly, the financial status of the missionaries who established should be considered.

Shortage of doctors

According to the World Health Organization portal, there are 1.6 physicians and 7.2 nurses for every 10,000 people in Zimbabwe *(Zimbabwe Ministry of Health and Child Welfare, Human Resources for Health information sheet, 2010)* [12]. The lack of staff for medical education training and high drop-out rates in public sector health care posts have resulted in vacancy rates of over 50% for doctors, midwives, laboratory technicians, and environmental health staff (National Health Strategy for Zimbabwe 2009–2013) [13]. From the results of this research, there is shortage of doctors because some hospitals are operating without them, and this is a problem.

Computers and internet unavailability

Computers are being increasingly used in medical professions. There are different levels of interface of medicine and computer technology. In clinical settings, the Internet enables care providers to gain rapid access to information that can aid in the diagnosis of health conditions or the development of suitable treatment plans. It can make patient records, test results, and practice guidelines accessible from the examination room. However, it is evident from this research that church associated hospitals are still lacking in this area. Some of the church associated hospitals do not have computers and internet access.

External factors which affect service delivery at church associated hospitals

Water availability

Zimbabwe National Water Authority (ZINWA) chiefly deals with water supply in Zimbabwe. According to the UNICEF portal, access to safe water and sanitation remains a major issue foe Zimbabwe, particularly in rural areas. Access to adequate sanitation lags significantly behind at 35 percent. Also, during 2018, UNICEF continued to increase access to water by drilling new boreholes and rebuilding defunct pipe water schemes and boreholes in rural districts with a strong focus on solar power. The urban WASH programme also saw a two–fold increase in water production across 14 small towns alongside the rebuilding of sewer system. *Afrobarometer Dispatch 2020* [14] highlighted that 6 out of 10 Zimbabweans (60%) reported that they had gone without enough clean water for home use at least once during the 12 months preceding the survey. Almost half (45%) suffered water shortages "several times," "many times," or "always". From the results of this research our participants are affected by water shortages. They have back up plans such as boreholes in place to counter the problem.

Electricity availability and backup plans

All the church associated hospitals are connected to the central electricity grid. Zimbabwe Electricity Supply Authority Holdings (ZESA) controls the electricity market in the country. Through its subsidiaries Zimbabwe Power Company (ZPC) and the Zimbabwe Electricity Transmission and Distribution Company (ZETDC) generate, import and distribute all electrical energy in the country [15]. Load shedding is a major problem in Zimbabwe. According to the *Zimbabwe's E–Health Strategy 2012–2017 Ministry of Health and Child Welfare* [16], Zimbabwe was now experiencing load shedding at more frequent rates and for prolonged periods. In some cases, for as long as 8 hours per day, every day. All the participants are constantly experiencing power cuts. To counter this problem, church associated hospitals used either a fuel operated generator, battery operated generator or solar power.

State of roads leading to the church associated hospitals

The state of roads is very important because it is an external factor which strongly affects accessibility of the delivery of service to patients.The ambulance cannot transport patients normally in case of an emergency. The ranking of the roads varied from very poor roads to good roads. Respondents from the rural church associated hospital mentioned that during the rainy seasons the dusty roads become muddy. Potholed roads in Zimbabwe's urban and rural areas are normal. Potholes pose a hazard for drivers. They are especially dangerous following heavy rains, as standing water hides some of the potholes. Secondly, the

state of roads is being affected by the rainy season. In the rural areas, they have dusty roads which become muddy and slippery during rainy seasons. Also, in rural areas some rivers do not have bridges which makes it very dangerous to cross during rainy season. Thirdly, Zimbabwe has been experiencing flash floods. Flash Floods are a sudden local flood, typically due to heavy rain. Lastly, cyclones are another major issue.They come with massive destruction of roads and infrastructure. In 2019 Zimbabwe was hit by Cyclone Idai which swept away a large percent of Chimanimani and killed many people. In 2020 Zimbabwe was hit by Cyclone Charlene, and currently in 2021 Zimbabwe has encountered Cyclone Eloise.

Possible solutions to the problems faced by church associated hospitals

Like any other institution, church associated hospitals are not an exception, they also face challenges. In this research a lot of challenges were outlined. Challenges decrease the quality of services offered by these hospitals. Church associated hospitals are usually affected by external factors beyond their control. One external factor is fuel shortages such as petrol and diesel for the ambulances to function. Generally, Zimbabwe has moments of shortages of fuel and expensive fuel. It is common in Zimbabwe to see long winding queues at most fuel stations. Frustrated and desperate motorists sometimes spend long hours parked at fuel stations. Another problem is that church associated hospitals have moments of patient overload. From this research quite a number of hospitals such as Karanda highlighted that they were overwhelmed by an excessive number of patients. Researchers such as Machinguraet. al. [17] and Mufukaet. al. [18] respectively highlight some challenges similar to what have been found in this research.

The above problems could be solved in the following ways:

- The situation of some church associated hospitals could be improved if these hospitals got more financial assistance.
- In the future more cooperation between government and church associated hospitals would help solve some of these challenges.
- To improve the delivery of service of church associated hospitals the government should control the quality of services offered by these hospitals. More advanced management skills should be applied by the hospital administration.
- Government provides human resources for church associated hospitals. However, the problem of a shortage of doctors still exists. In the future church associated hospitals should hire extra doctors on contract.
- Situations such as shortages of food for patients can be improved by connecting and collaborating with other organizations which major in food production. These organizations can provide food on credit and on an advance.
- Policies should be put in place which makes it a must for hospitals to have computers for the collection of data and recordkeeping.
- The situation of being overwhelmed by patients can be improved by creating a future solid plan which ensures that church associated hospitals are in a better position to cope with the expected rise in demand from a growing population and the financial pressures.
- Finally, church associated hospitals that truly want to improve their quality of care should regularly research and learn from other hospitals–both in their own region and across the country. Some hospitals are doing exceptionally well such as Karanda mission hospitals. Inter hospital conferences is a good opportunity for sharing ideas and management skills. Nkosinathiet. al. [19] have indicated a church associated hospital which is doing well in the area of HIV and AIDS services. Musoni et. al. [20] revealed that Mbuya Dorcas Hospital a church associated has state of the art equipment.

Conclusion

The internal factors which affect the delivery of service at church associated hospitals of Zimbabwe continue to exist. Some church associated hospitals continue to operate without doctors. Some improvise because of shortages of equipment. However, on the positive side church associated hospitals provide accommodation for their staff members. There are problems which are caused by factors beyond the church associated hospitals' control. These include the quality of roads leading to the hospitals, fuel for ambulances, water availability and electricity availability. In such cases church associated hospitals have to come up with back up plans to counter the problem. Another objective was to outline the general equipment availability and items which can be challenging to procure for the church associated hospitals of Zimbabwe. Most hospitals do not have adequate protective clothing for healthcare workers because of the COVID–19 pandemic. Other equipment such as glucose level testing kits are not readily available because they are expensive. Each hospital also highlighted what was lacking in terms of general equipment. Some of the lacking equipment included ultrasound machines, laundry machines and modern diagnostic equipment. Another objective was to outline the exact challenges faced by church associated hospitals in this period. It was noted that this group of hospitals continue to be overwhelmed by large numbers of patients. Some hospitals such as Chikore Mission Hospital

needed a functional refrigerator to store vaccines and blood for transfusion. Some complained about the lack of revenue to pay staff workers incentives. Nevertheless, church associated hospitals provide healthcare services to the people of Zimbabwe. The situation has really improved over the past decades. There is more cooperation between church associated hospitals and the government of Zimbabwe. Despite these daunting challenges that many churche associated hospitals face, their commitment to provide health services remains unshakable.

So, the variety of problems are financially conditioned. But the deep analysis revealed that a lot of challenges could be solved by organizational, management and intersectoral co–ordinational measures.

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