Identifying Patient Safety and The Healthcare Environment in Puntland, Somalia

MUNA ABDI YUSUF ISSE
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Kartläggning av Patientsäkerheten och Vårdmiljön i Puntland, Somalia

Muna Abdi Yusuf Isse

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Supervisor at KTH: Maksims Kornevs
Examiner: Sebastiaan Meijer
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School of Engineering Sciences in Chemistry, Biotechnology and Health
Department of Biomedical Engineering and Health System
KTH, CBH
SE-141 86 Flemingsberg, Sweden
http://www.kth.se/cbh
Independent on where in the world one is, patient safety is regarded as one of the most important aspects in the healthcare industry. On the contrary, depending on where you are, the patient safety will differ and is therefore location dependent. The patient safety in a developing country will therefore be evaluated in a different way compared to a developed country. This study, therefore aimed to identify the patient safety in Puntland, Somalia and with it, its healthcare environment in the hospitals. The goal was to identify the main factors that affected the patient safety.

To investigate this, a field study to the region of interest was made and subsequently interviews with staff at the site were conducted as well as observations in the concerned hospitals. The obtained results were analysed using the method of Qualitative Content Analysis. At a later stage, the results could be thematized into four categories; “Need”, “Device”, “Training” and “Knowledge”, which pinpointed the main issues.

The study show that there was a common transversal issue of a inherent lack of devices, training and knowledge which in turn could severely affect the patients and their safety in ways such as misdiagnosis, delayed treatment and in worst cases death. Furthermore, it was evident that rather than the lack of actual devices, the absence of knowledge was more prevalent.

ABSTRACT

Independent on where in the world one is, patient safety is regarded as one of the most important aspects in the healthcare industry. On the contrary, depending on where you are, the patient safety will differ and is therefore location dependent. The patient safety in a developing country will therefore be evaluated in a different way compared to a developed country. This study, therefore aimed to identify the patient safety in Puntland, Somalia and with it, its healthcare environment in the hospitals. The goal was to identify the main factors that affected the patient safety.

To investigate this, a field study to the region of interest was made and subsequently interviews with staff at the site were conducted as well as observations in the concerned hospitals. The obtained results were analysed using the method of Qualitative Content Analysis. At a later stage, the results could be thematized into four categories; “Need”, “Device”, “Training” and “Knowledge”, which pinpointed the main issues.

The study show that there was a common transversal issue of a inherent lack of devices, training and knowledge which in turn could severely affect the patients and their safety in ways such as misdiagnosis, delayed treatment and in worst cases death. Furthermore, it was evident that rather than the lack of actual devices, the absence of knowledge was more prevalent.
Oberoende på var än i världen man befinner sig, anses patientsäkerhet vara en av de viktigaste aspekterna i sjukvården. Å andra sidan, helt beroende på var man befinner sig kommer patientsäkerheten skilja sig och är därför lägesberoende. Patientsäkerheten i ett utvecklingsland kommer därför uppfattas på ett annat sätt i jämförelse med ett I-land. Denna studie syftar till att identifiera patientsäkerheten i Puntland, Somalia och med det dess vårdmiljö i sjukhusen. Målet var att identifiera huvudfaktorerna som påverkar patientsäkerheten.

För att undersöka detta utfördes en fältstudie i den valda regionen Puntland, därefter gjordes intervjuer med personal på plats i sjukhusen och dessutom utfördes observationer. De erhållna resultaten analyserades med hjälp av metoden “Qualitative Content Analysis”. Vid ett senare skede tematiseras resultaten till fyra kategorier; “Behov”, “Apparat”, “Utbildning” och “Kunskap”, vilka visade på de huvudsakliga problemen.

Studien visade slutligen på att det fanns ett gemensamt genomgående problem av brist på apparater, utbildning och kunskap, vilket i sin tur skulle kunna påverka patienter och deras säkerhet på sätt såsom feldiagnoser, försenad behandling och i värsta fall döden. Vidare fastställdes att snarare än bristen på apparater, var avsaknaden av kunskap mer påtaglig.
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Muna Abdi Yusuf Isse
KTH Stockholm, Sweden
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1. INTRODUCTION

In a war torn country the patient safety we know of in developed countries is nowhere to be found. Instead survival and doing the best of the situation in traumatized settings is more in question. Despite the decades long wars in Somalia, the country is functioning although much could be done to improve in almost every aspect.

Patient safety is regarded as one of the most important aspects in the healthcare industry (Schwappach, 2015), not only by the patients themselves but also by the technicians who design the medical devices used, by the staff handling them and in the society as well. Moreover, there are several different factors that play in when discussing patient safety in a hospital and one of them is the medical devices.

When an engineer is constructing or designing a medical device, he has an intended use in mind for the device. Often times these machines are very complex and require the user to be educated in how to use it. But sometimes there is no ability to get this kind of education or training depending on different circumstances, whether it be resources or just availability. Thus a lot of machines never get used or get stored in inventory. Furthermore, in a country with lacking infrastructure and limited resources, the availability and common knowledge is missing and thus complicates the whole issue even further.

Another important note is also the maintenance of the devices. Because of the complexity of the devices, they require very skilled personnel to regularly check them and make sure nothing is wrong with them. Furthermore they can also repair and configure them when needed. These types of work increase the patient and staff safety but it also minitates unnecessary and easily avoidable problems that could arise, additionally it enables a more effective work manner in the hospital.

This topic is not a well studied area when it comes to developing countries and there is little to no information available, therefore this thesis also has a goal of contributing to the area and in a way enlighten the field with further knowledge.

Objective

The aim of this thesis is to identify the patient and worker safety of hospitals in Puntland, Somalia. The definition of patient safety and the word safety in itself will be evaluated and compared to what we here in Sweden consider safety and what is considered safety there. The initial goal is to cover the general hospitals.

The research questions that have been set up for this thesis are stated below:

1) What is the definition of patient safety?
2) What are the biggest issues in the general hospitals?
3) What is needed to improve the patient safety?
2. BACKGROUND

One might think that a term like patient safety is something that has a common definition all across the world. In order to feel safe and be able to get the same kind of healthcare independent of where you are, these kinds of definitions are assumed to have an universal meaning. Unfortunately this is not the case. One can ask oneself why these kinds of terms are location-dependent and to what degree they are similar. Is the patient safety regarded the same in Somalia as it is in Sweden?

Patient safety is one of the greatest concerns in the healthcare sector. Yet there is much information missing and there are not many studies made about this subject regarding developing countries.

2.1 Organizations & Definition of Patient Safety

There are several help organizations which has been in the country (Somalia) for different reasons and for different time periods. Medecins sans frontieres (MSF, Doctors without Borders) entered Somalia 1991 due to the ongoing war and the lack of healthcare (Medecins sans Frontieres, 2013). After 22 years of assisting and providing healthcare they left the country 2013 due to extreme attacks to both the staff but also the patients.

WHO, The World Health Organization, is one of many of the United Nations specialized agencies. As the name indicates their specialization is international public health and they work to achieve their goal of making a healthier future for people all over the world (World Health Organization, 2017a).

WHO:s shortened definition of patient safety is as follows: “Patient safety is the prevention of errors and adverse effects to patients associated with healthcare”. There are many other definitions defined by different important certified bodies but they are essentially stating the same information and defining the subject of matter using slightly different approaches and words (World Health Organization, 2017b).

2.2 General regulations

In developed countries there are regulations and frameworks that manufacturers and hospitals must abide by, this is to assure patient and worker safety and a way to get rid of unnecessary errors that could easily be dealt with, although all errors cannot be fully eliminated.

An example of these regulations are the ISO-standards (International Organization for Standardization). The ISO-standards could be adapted by each country who is a member of the organization. These standards have been formed to serve as regulations and guidelines for the member countries, moreover they also enable and form a common ground between
different countries and thus facilitating trade across the borders (International Organization for Standardization, 2017).

As medical devices are such complex devices to work with, they usually need someone who is specialized in how to handle and maintain them. Each hospital in Sweden has a Medical Technical Department, who are responsible for the maintenance of the devices but are also the overall connection between the users (the staff) and the actual devices. They are responsible for the education to the staff and also all the documentation regarding the device such as if it follows the regulations and its risk assessments (Capio S:T Görans Sjukhus, 2017; Västra Götalands Regionen, 2017).

All countries in the world aim to provide a better healthcare for its citizens, some have a better chance at reaching its goals than other and this in turn affects the treatment and the quality of the care that the patients receive. A study made 2014 shows that the health sector in Somalia faces great challenges due to the extended civil war which has also led to diminished rules and no governmental guidance or leadership (Elkheir et al, 2014). This has had its toll on the country which can be seen by the statistics which are mentioned in the next section below.

2.2.1 Somalia

Somalia is a country situated northeast of Africa and is known as the Horn of Africa. With a population of nearly 15 million people, it is the 74th biggest country population wise in the world (Worldometer, 2017). The country is divided into six regions, Puntland, Jubaland, Galmudug, Somaliland, Hirshabeele and South-West State. The region of Puntland alone has a population of approximately 4 million people, which counts for at least 26 % of the whole country (Nationalencyklopedin, 2017) and is therefore the biggest region. Additionally, there are four government/public hospitals in this region, Bosaso General Hospital, Garowe General Hospital, Galkacyo General Hospital and Qardho General Hospital, in which the hospital in Bosaso is the biggest (Puntland Ministry of Health, 2017) while Garowe is the capital city of the region but Bosaso is the largest city. In the country there are several different kinds of hospitals, public as well as specialized private. In this study we will focus on the general public hospitals.

The latest data available, from 2006, shows that Somalia has a physician density of 0.035 physicians per 1000 inhabitants. Furthermore, the statistics for nurses and midwives are slightly higher with a density of 0.114 per 1000. The latest data for Sweden, from 2011, show 3.926 and 0.742 per 1000 inhabitants respectively (World Health Organization, 2017c; World Health Organization, 2017d). According to the Sustainable Development Goals set by WHO, the minimum density of physicians, nurses and midwives should be 4.45 per 1000 population (World Health Organization, 2016e).
2.2.1.1 Governmental support

As previously stated, due to the pervading lack of stability in the country, many of the industries that the economy of the country is dependent on are impeded. This not only applies to the healthcare sector but also other sectors such as agriculture, farming, fishery and alike. During the 1970s, several development plans were established by the government in order to improve the economic system. Prior to this, the government had no involvement in, for instance, the agricultural sector and there was thus no coherence of operation on a national level. This led to an unbalanced supply of the cultivated goods and also a small contribution to the benefit of the country and its inhabitants. By these development plans, the country was able to improve its economy and exploit its resources, although soon the programs showed to be unproductive due to different factors such as drought, furthermore resulting in a big country debt. However, the development programs still showed the significant importance of governmental involvement and support for progress on a macro-level (Metz, 1993).

2.2.2 Sweden

On the contrary, Sweden is ranked among the top in a study comparing the healthcare of different countries in Europe but also including USA (Sveriges Kommuner och Landsting, 2015). Sweden consists of 20 county councils which are each responsible for the healthcare and wellbeing of the inhabitants in that county (Sweden, 2017; Stockholms läns landsting, 2017). The total population is approximately 10 million people and the largest county, Stockholm County, has a population of a little over 2 million people, which amounts to approximately a fifth of the whole nation (SCB, 2017).

In Stockholm alone there are seven general hospitals with emergency rooms, furthermore there are eight local smaller hospitals. Additionally, there are many healthcare centers owned by the county spread throughout the different municipalities and also other specialized hospitals such as hospitals specialized in eyes and such (1177 Vårdguiden, 2017).

In Sweden, there are laws regarding medical devices and their safety. These laws are set by the government and are adapted and reconstructed from the European Directives (Naturvårdsverket, 2017). Moreover, they do not only apply to Sweden but all the countries that are members of the European Economic Area (EEA), which includes more countries than the member countries of the European Union (EU), thus in the same manner as the ISO-standards, allowing free flow of the devices within this area (UK Government, 2017).

An example of such a law in Sweden is the law regarding medical devices (Lag 1993:584). This law defines which devices that could be called medical devices and what requirements they should fulfill. The law also lists the directives regarding clinical trials and also appoints a certified body as responsible for assuring that the directives are met before the product is released on the market. Furthermore, the law also put demands on the authority which is to be chosen as the certified body and there is a certain process that is followed when reviewing an
authority in this sense, which is also stated by the law. All this is to ensure the safety of the usage of the devices and that they do not cause any harm to the user or the patient (Regeringskansliet, 1993). Moreover, there is also a law specifically regarding product safety (Produktsäkerhetslagen) which not only applies to the medical devices but all products in general.

2.3 Previous studies

According to WHO, it is estimated that 1 out of 10 patients is harmed when receiving hospital care in developing countries (World Health Organization, 2017f). There could be many different reasons to this but one important part of patient and worker safety is communication. The lack of communication leaves room for misinterpretation and errors to occur. Communication in a hospital can be the interaction between doctors, doctors to nurses, between staff but also the information given by the staff to the patients. According to studies made, good communication could increase the quality of the care given and also make the work more efficient. This also contributes to better patient safety. On the other hand, poor communication in a healthcare sector could have irreversible consequences, such as a deadly outcome (Smith, 2005).

Studies have shown that healthcare associated infections (HCAI) is the most frequent problem hospitalized patients face and this, not only in developing countries but also developed countries such as in the United States and the United Kingdom (Vincent, 2006). Additionally, the main death cause of patients in developing countries is due to infections. As a result of the circumstances of poor and insufficient tools, bad infrastructure, quality of drugs and medical equipment, furthermore in some cases even outdated or faulty equipment and the overall available resources and conditions, developing countries are more susceptible and prone to infections and harm. This not only affects the patients but also the physicians and the workers (Vincent, 2006).
3. METHODOLOGY

To reach the set goals, different methods must be used to acquire the information and data that is needed. Therefore the chosen methods will result in both qualitative and quantitative data.

3.1 Literature study

Firstly a literature study needs to be done where all the relevant aspects are mapped out in order to pinpoint the most vital parts for the field study. The literature study will give an insight of what to expect and what to focus on. What have been seen is that there is not that much written information available of studies made in Somalia regarding the topic of this report. However, relevant and interesting articles about other developing countries should also suffice or give a slightly better picture although most developing countries do not have the same circumstances and conditions, one can not be equalized to another but we could gain useful information.

The literature study will also facilitate for the preparation of interview questions. Thus interviews will be held with voluntary patients/staff to get qualitative data about how they perceive the safety and quality of the treatment/care. The interview could also be used to see what kinds of problems the physicians encounter and alike.

3.2 Data Acquisition

Furthermore, for the actual data acquisition, auscultations will be made along with observational studies where the hospital environment will be observed without interfering or changing any factors. During the observational studies we will be able to look at the report systems used in the hospitals, such as journals, notes and schedules. Additionally, we will be able to see how the communication is between the staff and how they convey important information but also what kind of devices that are available there and their usage. Moreover, the consent of the people involved will be sought to ensure that they agree and are informed of our study.

As the data collection will be performed abroad contact with important actors is to be made in prior to the actual visit. With the help of the authors father, initial contact was established with Dr. Bile, a former WHO country representative and a much influential researcher in the medical field in developing countries. With his broad network of stakeholders in the area of interest, further contacts were established with key actors.

The most significant stakeholder that facilitated connection with the hospitals was the Ministry of Health (MoH) in Somalia. Abdirizak Hersi Hassan, the director of the MoH, initiated the contact with the concerned hospitals and informed each hospital director of the
study. Through each hospital, the available and willing staff were then asked to participate in
the study and were interviewed.

The interview questions will be made out of general questions that are relevant to the topic.
The questions are connected and constructed with the information obtained from the literature
study and from previous experience. Depending on the profession of the interviewee,
different questions will be asked although some might be the same for the different
occupations as they share the common workplace but could encounter a range of diverse
issues. The interview questions could be found in Appendix A.

3.3 Data Analysing

In a later stage of the project, the acquired data will be collected and analyzed in order to list
the deficiencies in the patient and worker safety, draw conclusions and suggest further studies
or improvements that can be made.

For the data analysis, the method of qualitative content analysis will be used. There are two
different ways of using content analysis, in an inductive or deductive way. While both
methods use the same basic stages, which can be categorized as preparation, organizing and
reporting, they differ in application as to the available data and the purpose of the study (Elo
and Kyngäs, 2008). Depending on the study, the stages mentioned above can be iterated but
also divided into several substages as well.

The deductive content analysis is mostly used for studies where what is to be categorized is
already known beforehand. Meanwhile, the inductive method is used when there is rather
unknown or lack of sufficient information (Sandström et al., 2015).

The usual steps in this method can therefore be explained in the following manner:

1. **Preparation**: Where the interview transcripts are prepared and all the collected data is
   read through.

2. **Organization**: Where the collected data is analyzed and common traits and frequent
   themes are grouped together in order for us to be able to draw conclusions.

3. **Reporting**: Where the findings from Step 2 are compiled and conclusions are drawn.
   Step 1 and 2 can be iterated until it fits the data.

Generally when analyzing texts, and in this case interviews, there are different types of
content one can look at. The content in the interview is divided into manifest content and
latent content. What differentiates the two types are the degree of interpretation and
analyzation they need. The manifest content is the kind of content that is obvious and easily
read from the text. Whilst latent content is the kind of content which is hidden and needs
interpretation from the reader, it refers to the underlying meaning of what is written
(Graneheim and Lundman, 2004)
The findings will be presented in chapter 4 ‘Results’ and also be visualized in forms of graphs and tables.
4. RESULTS

The following are the obtained results of the study. The results consists of the interview answers and the observations made from the hospital visits. The results from the interviews will be presented but also visualized in plots to facilitate for the reader but also to enhance the most important aspects.

4.1 Results from Interviews

For the interviews we tried to interview as many as possible, with so much variety we could get. There was no special profession we were aiming at but we tried to at least find a variety but also speak to someone in charge, for example a hospital director/chief.

![Figure 1. Gender Dispersion of interviewees.](image)

In Figure 1, it is presented that there was a total of 35 interviewees where 51 % were men and 49 % women of different professions and ages in three different hospitals. The hospitals we were able to visit were Bosaso General Hospital, Garowe General Hospital and Galkacyo General Hospital.

The interviewees were chosen randomly due to the circumstances as the majority was not pre-scheduled which in turn led to the variety of their professions.

By using the method mentioned above in chapter 3.3 ‘Data Analysing’, a word cloud and a list (see Figure 2) were compiled of the most frequently mentioned words relating to patient/worker safety from all of the interviews, see Appendix B. As seen, the most commonly occurring word with a great margin is the word “Need” with 147 mentionings. Second is the word “Use” but we will disregard that word as it was used with several different meanings and an analysis of it would not benefit the main point of this report. This is followed by the word “Device” which was mentioned 88 times, the word “Training” 48
times and the word “Knowledge” 20 times. The word “People” was disregarded with the same logics as for the word “Use”.

Throughout the interviews we could see that the word “Need” was the most used. It was mentioned nearly twice as much as the second most frequent word. The interviews show that the word was used when explaining what was missing from the hospitals as it most often referred to “the need of knowledge/training” but also “the need of devices” and sometimes also as “the need of more knowledge of the devices”. It should also be known that the word “Need” was used interchangeably with “lack of” during the interviews but still referred to the same meaning. This shows that the words from the table in Figure 2 all are related but still intertwine. Below in chapter 5 ‘Discussion’ we will discuss each of the combinations and how they were portrayed by the interviewees.

Down below we will present the findings of each hospital in more detail and will discuss it further in chapter 5 ‘Discussion’ as well. The most frequently used words will serve as a base for thematization of the empirical results from the interviews. As these themes are very closed linked in the interviews, the empirical results could overlap or also fit under another theme.

4.1.1 Bosaso General Hospital

Bosaso General Hospital was located in the heart of the city and was easily accessible for the people. In this hospital we interviewed a total of nine individuals. As seen in Figure 3 below, there were five different professions. Apart from the general professions, there were also

![Figure 2. Word cloud of the words used in all the interviews.](image-url)
some of the interviewees that were specialized in a certain area. The specialization differed as of the profession. The specialized nurses consisted of an anesthesia nurse and two midwives. Furthermore, there was also a doctor that specialized in surgery.

**Need**
Consistently throughout the interviews, the personnel expressed the need for improvement of the hospital, the available devices and certain training, whether it be for specialized care or for how to handle the devices. Moreover, the interviewees enlighten the connection between the need for certain facilities and the absence of the respective required competence: “There are many things that you know but you don't have the facilities for. For example, the need of tools to do fistula procedures but then specialists are needed to do this as well”.

When asked about the general thoughts and possible improvements that could be made, the majority of the interviewees had coherent answers, all reflecting the general need of knowledge, not only for the staff but the need of general knowledge for the society. As for the biggest issue, one interviewee stated: “...the staff that needs training in almost every aspect and the knowledge that the society have” and implied that the need for knowledge was the biggest problem. This was a common topic among the interviewees and is further seen as it was reflected on their answers.

**Device**
On the topic of devices, the interviewees discussed the available devices, their usage and their care along with the lack of required knowledge in how to handle them. Concerning the available devices and the overall availability of receiving/obtaining devices, an interviewee said: “We could get the most devices that are needed. The problem is with the repair and maintenance of the devices”, while another stated: “But in OP theater, there is an increased need of maintenance because of the already used* products. (Note* meaning old devices)”

It was evident that it was a question of maintenance and quality rather than the need for more devices, although some of the essential and vital equipment required for a hospital were
missing. Nevertheless, it also concerned the interviewees as it was apparent in the interviews. One interviewee said: “There is also a deficiency in the tools we have, most of the machines we have are outdated and old. If the machines would stop working we would have issues.”, yet another one commented: “There is no routine of maintenance or calibration, they use it until it doesn’t work anymore.”

Furthermore, the lack of vital equipment was also discussed and it became apparent that other tools were used as substitutes when something was missing. A rather recurrent matter which was brought up by a majority of the interviewees was the lack of oxygen gas tanks in the hospital. One interviewee also stated that the lack of oxygen tanks actually was the biggest issue, another said: “Oxygen is only available in the surgery theater, here we use an arm-bag instead.”. Likewise, another example was the use of the Ultrasound machine instead of a CT-scan.

Training
As for the training mentioned by the interviewees, it most often referred to training regarding the utilization of the medical devices. Many of the aspects discussed revolved around the need for practical knowledge, as one of the interviewees expressed it: “Training is needed the most for the medical devices, there are some devices but they need education in how to use them. An example is the anaesthesia devices.”

Moreover, the interviews show that the actual learning of how to use the devices most often is through each other: “All other staff get training from doctors/.../If the doctors cannot do it, the hospital hire people to teach them.”. Many times there was a lack of resources to hire an instructor that knows how to utilize the device and therefore the device is put in storage.

Knowledge
The topics of Training and Knowledge were much often linked and used by the interviewees as if they complemented each other. In some aspects, it was referred to as the lack of knowledge of the patients, other times it is referred to the general knowledge and education of the staff. When asked the question of if the staff had the required education for their profession, the hospital director answered that the most of them had a formal degree from an institution/university but not all of them. He further explained that the rest, more or less, has had sufficient previous experience or were trained in-house. In addition, he concludes: “Often times the ones with experience rather than school degree is better.”

Throughout the interviews, the hunger for knowledge among the staff was noticeable. Many of the staff mentioned the importance of the care and their eagerness to learn: “We always want to learn more and gain more to give better care.”.
4.1.2 Garowe General Hospital

Garowe General Hospital was located in Garowe and was positioned on a offset hill slightly off the city center. There was no communication to the hospital and the only way to get there was to either walk up the slope or get there by car. As seen below in Figure 4, we interview a total of 17 staff members. The main professions were the Deputy Hospital Director, a total of six doctors which of one was a gynecologist. Furthermore, two pharmacists, an auxiliary midwife, a hospital cook and nurses of different specializations (Head nurse, four midwives and an anesthesia nurse).

Need

From the interviews in this hospital we can see that the need presented concerned the lack of devices and resources but also the need for more knowledge of the staff. Most of the interviewees emphasized the lack of a sufficient supply, tools or medication for the treatments and expresses it as: “Most of the people that come need oxygen, we only have one tank. If there is a surgery and it comes a emergency patient, it becomes a difficult situation.” while another interviewee states “The supply is not sufficient and it sometimes happens that they fall short and that it's not enough for all the patients.”.

Concerning the needed resources, an interviewee answers the question of if the hospital can fit the needs of the people as : “The hunger for help is bigger than what we can offer. There are lot of people here. The supply is very small, the population is big and the hospital cannot fit their needs.”. Furthermore, it appears that the resources not only concerns the devices but also the other utilities of the hospital and the hospital itself as well, an interviewee stated : “The hospital needs more resources. The beds are old, so are the rooms and the facilities. The whole building as it is needs fixing.”

Device

On the subject of devices most of the interviewees expressed their need for more and better devices. When asked the question of if there was any missing devices or tools, interviewees
answered: “Absolutely. What we have is actually little.”, they also express the difficulty to handle such patients and also that they have to resort to send the patient to another hospital in a different city due to the lack of necessary equipment. They further explain: “we have no MRI scan here and we have to send people to Hargaisa (another city in another region) for many procedures because of this.”.

Another common topic when discussing the devices was the teaching processes that follows from gaining new devices or when teaching new staff. Usually the company or help organisation which assist the hospital with the appliances also provide for the training of the device. Other times its peer-to-peer learning and the seniors help the new staff: “Mostly the training is done by the ones bringing the devices or by the seniors in the hospital.”. At times when there is a brand new device and there is no external assistance, they try to learn as they go, in a kind of trial and error setting.

Furthermore, they also bring up the problem arising from malfunctioning or faulty devices, but also the issue of putting devices in storage if they have a problem that cannot be fixed, whether it be small or big. Additionally, paired with the problem above of new devices, when there is no possibility to learn how to use them, they often store the device as well. An interviewee explains it as: “The one who is most confident tries to use the devices that are new to them. If there is no one who can teach them, they store and try looking for someone outside to teach them. There are some devices that have a small problem, and it is put in inventory because there is no one who can fix it. Needs people to fix the devices.”

**Training**

The main mentions of training in the interviews regarded the lack of actual, hands-on, practical training that the staff has: “The personnel always need training even though they have the formal education”. A great number of the interviewees shared their desire for more training but also expressed their need for training: “The staff needs training, there are some seminars and training sessions but it needs to be more.”. Additionally, the interviewees emphasize the importance of training: “The training is important and that it is done continuously” but also as: “The staff needs continuous training to grow and to become more qualified. They need constant update”.

**Knowledge**

As for the occurrences of the word Knowledge in the interviews, it was discussed with different meanings and context. In some of the answers it was mentioned as the lacking knowledge of the staff: “The staff needs more knowledge. We know how to use the most devices that we have but still there is a lot of knowledge missing.”, other times it was in the context of knowledge versus society and patients: “We also need more knowledge spread to the people”. Additionally, an interviewee expressed that knowledge was not the issue but instead something else: “The knowledge is not lacking but the economy and the administration is lacking in many aspects.”.
4.1.3 Galkacyo General Hospital

Galkacyo General Hospital was located in the center of the city Galkacyo. It was easily accessible. The interviews of this hospital consisted of three different professions with specializations. In total there were five doctors, presented in Figure 5 above, which of three were general practitioners, one gynecologist and one neurologist, which also was the Hospital director. Moreover, there was an Assistant of internal medicine and three nurses, which of two were specialized as a pediatric nurse and a midwife.

Need

Out of the many instances the word Need was mentioned, the majority were referring to the need of devices. When asked if there was any missing devices in the hospital, the director answered: “There is nothing here worth mentioning. For instance, we need CT, MRI and anaesthesia machines.”. He further explained that they use local anaesthesia instead of general and how it affects the patient: “As it is now we can not do general anaesthesia. We use local anaesthesia so the patient is not relaxed during surgery and the organs are moving under tension.”. Furthermore, the staff also express the deficiency of the hospital: “We need a lot of devices that are missing. Sometimes the drugs are not sufficient but mostly it is ok.” and yet another: “We need tools for the children's department, we need oxygen tanks. We also need offices with required equipment and the staff needs training as well.”.

Moreover, the interviewees also discussed the lack of resources of the hospital. They explain that as a result of events in the city there was bombnings that affected the hospital and its facilities: “The hospital was under bombing, the surgery area was bombed and the capacity was destroyed.”. The staff express the need of funding of the hospital as it is a non-profit making institution: “There is a lack of funding and support and we do not get much money as staff here.” and in ways of: “We welcome any type of help, whether it is through devices or funding.”.
Another common topic of this theme was the need for specialized personnel which was missing in certain departments. An interviewee stated: “We need qualified staff, need specialists (there are none). There are some departments that do not have specialists” while another manifests the general thoughts of the hospital as: “I would like a hospital that is a referral, that could cover the needs and have all the missing specialists and strengthen the ones that are missing.”.

Device
Generally, the theme of Devices was mentioned mostly in the context of the need for devices, both regarding quality and quantity. Many interviewees stated that there was a lack of devices due to the aforementioned bombings and the Hospital Director further answered the question of the available devices with: “Most of them were destroyed” as he then continues to list the available ones. One of the staff further mentions the deficiency of the devices as the biggest issue and expresses it as: “Device wise, we need improvement. The vacuum has gone bad, one sterilization machine has gone bad, drugs are also poor”.

Secondly, interviewees also discuss the maintenance of the devices. Some claim that there is someone responsible for the maintenance: “Yes, there is someone responsible for the devices. We call him when they are broken.” while other, among the Hospital Director, state that there is none appointed for that: “No one is assigned to maintain them. Local practitioners with no knowledge try to fix them, usually they can not fix it.”.

For the question of how they learn how to use the devices, many of the interviewees stated that it is either through the donating organisations or internally within the hospital staff. Sometimes they try to learn from the manuals: “The ones who gives us the devices give us the training. If they do not give us training, we try to use the manuals.”

Training
As for the theme of Training, it was most often used in combination with the theme of devices. The interviewees seem to link these two together and it often concerned the practical training on the devices: “If there is something new, we will need training for it. The most important aspect is that you get the training to use it properly or else you will just practice on it.”. Moreover, another interviewee stated: “By training. We learn from the books. If we are lucky we get help from abroad. If there is any issues with the device, we do not use it.”.

Knowledge
The theme Knowledge was not mentioned so frequently in the interviews of this hospital. The few times it was mentioned, it concerned the need for more knowledge of the staff but also in conjunction with the devices: “There are a lot of missing tools for example oxygen therapy and they need more knowledge.” but also as: “Mainly we would like that our staff gets more knowledge and that we have the appropriate and desired devices”.

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4.1.4 Overall in common for the three hospitals

To give an overall overview of the above results and highlight what the different hospitals have in common, the following will have the same structure as above but will be compressed.

**Need**
The most common need for all three hospitals were the lack of devices, resources and knowledge. As earlier explained, the knowledge would concern both the theoretical knowledge but also the practical knowledge in how to handle the devices.

**Device**
As can be seen from the individual parts for each hospital, the main concern regarding the devices was the lack of the actual devices, the teaching process of learning how to handle the devices and the maintenance of the devices, although the importance of the different concerns varied as of the hospitals.

**Training**
The aspect of training regarding all the hospitals were almost identical and referred the mentioned training to actual practical training in the available devices. It appeared that the appropriate training was missing and further that the staff needed more practice.

**Knowledge**
Throughout the hospitals, the mentioned knowledge referred to the knowledge possessed by the staff, but also of the society. Most often, the knowledge was discussed in conjunction to training and discussed the lack of knowledge regarding how to handle the devices.

4.2 Results from Observations

The following is the information obtained from the observations made at the hospitals.

**Need and Device**
What was most evident was the available beds versus the actual patients that needed treatment. This could also be read from the interviews. Additionally, we could see that there were rarely any single rooms or rooms for two-three patients. Instead each patient room had multiple beds and there was no curtain or cover between the beds. Moreover, as we can read from the interviews as well, we could see that most of the beds were old and some of them even rusty.

Furthermore, many of the devices that we saw seemed to be old and outdated. When we asked the interviewees they confirmed it and said that most of the devices were old. They still used them as they were functioning and there was nothing else available.
Another observation that was made was in one of the surgery and ICU facilities. Regarding the surgery facility, which was locked from the outside, there was no sterilization area for the surgery personnel or anywhere where they could “scrub in” and prepare for the following procedures. The only thing that had some kind of contamination prevention was the change of slippers once you enter the actual department. Additionally, in the operation theater there were two operating tables adjacent to each other with no protection in between and not all the necessary tools for a operating room were available.

Moreover, for the sterilization of the tools in the hospital, most of the staff used chlorine or other liquids to clean and later put it in a hot oven for sterilization as this was explained to be the most convenient way for them due to time restrictions.

**Training**
This was not easily observed as it takes a experienced observer with the corresponding knowledge to know what they need training in when handling the devices. Furthermore, there were no training sessions that could be observed at the time of this study.

**Knowledge**
During a interview in a maternity ward next to a treatment room, a pregnant lady was brought in. She was complaining about stomach ache and it later turned out that she had a miscarriage. Both the pregnancy and the miscarriage was unknown to this lady. The interviewed nurse informed us about the often occurrences of this type of case and stated that it is caused by the lack of knowledge that the civilians have. The nurse stated that there is no information given and thus they do not seek help or hospital care until they feel severe pain and most often by then it is too late.
5. DISCUSSION

The aftermaths of the war is still very noticeable in Puntland. The general infrastructure has almost diminished and it doesn't seem as there are any rules or regulations regarding anything. Evenso the inhabitants seem to live in peace despite the lack of order as they have established their own way of living although the presence of armed military men still guard hotel buildings, banks and alike.

5.1 What is regarded as patient safety?

Patient safety is as stated previously, a term defined by many different instances, including the aforementioned WHO. This means that the meaning is general and has a set level where one can say an institution or hospital has a good patient safety or not. Depending on the geographical context, this good to bad scale can shift and it then becomes location dependent as the scale becomes relative to its surroundings. It is extremely difficult to say that a hospital has a bad patient safety because there are many factors that play in and affect the viewer. These aspects are those such as the viewer's own previous experiences, biases and perspectives. There are many different aspects that play in when reviewing the patient/worker safety and we will be discussing the following findings of our study below.

5.2 Main findings of the study

As we can see from the results the main issues revolved around the themes Need, Device, Training and Knowledge. The discussion will consequently follow the same pattern as we discuss the major findings of our results and will take a general perspective where the discussion will revolve around the common traits and issues of all the hospitals. Therefore, when referring to “they” in the following sections it should be understood as referring to all the concerned hospitals.

5.2.1 Devices

As presented in chapter 4 ‘Results’ the main issue regarding devices was not the lack of devices for the majority of the hospitals, but rather the lack of maintenance, which will be discussed in the next section 5.2.2 below, and outdated devices. Although a lack of devices was not the main issue, it nonetheless affected the hospitals concerned. During the interviews it appeared that there were many vital and important devices that were missing or not functioning. This affected the care that the hospital could offer and thus also the patients. Due to this reason, there were several instances where hospitals were forced to move patients to other hospitals in other cities and regions. This would have affected the overall safety of the patients and as a result there have has been instances where patients have died.

Although the outdated devices fulfilled their duties to a certain extent, their quality cannot be guaranteed as they were old and their functionality might have deteriorated over the years. If the device has a small technical error which causes a slight change in the obtained results, it
could affect the diagnosis of the patient. This could lead to either incorrect diagnosis, which further leads to that the patient does not get the appropriate treatment and care but could also in fact lead to death as the real cause of illness is still unknown.

Moreover, as there was a deficiency of available devices in the hospital, workers seemed to have tried to overcome it in some sense. We can see this as they try to use other devices with another original intended area of use as substitutes for the missing devices. Sometimes they used a combination of different devices in order to fulfill the main purpose and function of the missing device. Although this might seem as a clever idea, it could have consequences if they intend to use it as a long-term sustainable solution. As the device might have been designed to work optimally in a certain setting for a specific purpose, it might not therefore be utilized to its full potential in this setting. Thus could also therefore behave in an unpredictable manner and impose a risk to the ones involved.

The hunger for more devices was also expressed which naturally followed from the lack of the necessary devices and the insufficient maintenance of them therein.

5.2.2 The lack of training

The biggest concern have not been the technologies that are used, but the lack of knowledge and training in the devices. Many of the devices that are stored are put there because of the lack of knowledge in handling them or the lack of maintaining them. The latter occurs as a result of that the staff do not have the skills or personnel to fix/repair the malfunctioning devices. They use the devices that they know how to utilize until it breaks down. If there is a new machine available, they try to understand it and use it. Sometimes they also use its manual, however without the proper practical competence they cannot reap benefit from its use and as an interviewee stated: "The manual can not replace the practical knowledge.". Furthermore, if there is no training given and they do not know how to use it, they either store it or if they have enough resources, the hospital management would hire someone from another country who has the knowledge and skill to teach them how it works, as there is no one there who could do it.

Furthermore, we mentioned earlier in chapter 2 ‘Background’ that every hospital in Sweden has a Medical Technical Department (MTA). One of the issues with the maintenance of the devices could be solved if there was a MTA department in these hospitals. As they do not have someone responsible for this, the negligence of the devices is evident and almost expected. This could therefore solve the most of the problems regarding the devices as nearly all of the issues are related to a lack of maintenance.

When asked the question “How are the devices maintained/Who is responsible for the maintenance of the devices?” we got a broad spectrum of several different answers such as: “There is a whole team dedicated for this task” and “We have no responsible, but the OTP department looks at the tools” while the Hospital Director, as shown in 4.1.3 Garowe General
Hospital, declared that there is no one assigned to the task. This is contradicting information and it could be a case of different scenarios that led to the answers, however the end result comes down to communication issues amongst the staff. This shows that there is a lack of communication between the staff and it causes deficiencies in the healthcare, therefore also affecting the patients and their safety. Furthermore, the uncertainty could affect the staff as well, as they do not know where to head if they have a faulty device but also as they do not know when the issue will be resolved.

When there is no one who can regularly check the devices, both the staff and the patients are in an unknown danger. As seen in the results, most of the interviewees stated that they learn from each other or if the majority doesn't know how to use it, it's put in storage. Some of these devices could be of great importance to the hospital and a life determining opportunity for the patients if used correctly. Moreover, due to the lack of resources the hospitals are not able to hire and get education from elsewhere. This not only hinders the patient to get the help they need but also it stagnates the development of the hospital and in the long run it will affect the wellbeing in the society.

5.2.3 The need of knowledge

This can be seen as a concern regarding both the lack of general knowledge regarding the devices but also the lack of knowledge in how to maintain them, which was discussed in the section above, 5.2.2 The lack of training.

In many of the interviews the interviewees mentioned that there were certain devices that they were prohibited to use. For instance, some nurses were not allowed to use the Ultrasound machines as they did not have the training for it. The device could only be used by the doctors even though they expressed the importance of experience in comparison to a formal education: “Value experience more than an actual degree”. We can further see that there was a demand for specialized personnel and that the currently available amount was insufficient. With this in mind, the healthcare environment is obstructed as many uncomplicated procedures are halted and must wait until there is an unoccupied doctor or a staff that has the required skill. This not only affects the flow of the hospital, which affect all the patients and the workers, but also the patient who is waiting for treatment. If this kind of knowledge was spread within the closely related professions, the working environment of the hospital would be better as they could help patients within a reasonable time limit but also minimize the risk of further complications regarding the patient's state.

As for the workers, it could result in an increased level of stress and burden as the tasks are accumulated, waiting to be dealt with. Consequently, this creates a vicious cycle of stressed staff with an excessive workload and patients in a critical state in need of help.

Additionally, from the observations it showed that most of the patient rooms had several beds with no cover or curtains in between to separate the patient beds. This could have a definite
impact on the patient recovery and ongoing treatment as we earlier presented the risks of healthcare associated infections (HCAI). It could be reflected on if this matter is a case of insufficient knowledge or awareness. As HCAI is the most frequent issue hospitalized patients encounter, a setting like this not only encourages the spread of infections but it also increases the risk of aggravating diseases and thus creating a clear threat to patient and worker safety.

5.3 Development plans
For a change to be realised there are many aspects that have to be addressed and it requires the engagement of several important actors. In section 2.2.1.1 Governmental support, the achieved effect of the governmental involvement in the agriculture sector was presented. According to many of the interviews we saw that it seemed as if the government had no contribution or offered no support to the healthcare sector of the country and its the hospitals. A majority of the interviewees suggested that the involvement of the government could improve the care given and thus also improve the whole healthcare sector. The development plans could be used to educate the staff in more specialized areas, take in more essential devices that are missing and also establish a more general and national system of, for instance, patient data handling and so on. It is possible to think that such an approach would improve the healthcare sector immensely and that development plans, if implemented properly, would work to establish standards and structure in these types of volatile environment.

5.4 Method choice
This method is widely used when analysing qualitative data in forms of interviews. Depending on the researcher the steps of the method can be further iterated or split up into more sub steps. By doing this it ensures the fitting of the results to the thematizations or group of topics. Many of the methods used when analysing interviews or qualitative data, intertwine and ultimately use the same logics.

Choosing another qualitative data analysis method would not have benefitted the work in a noticeable way as they derive the same information. One can argue about the efficiency of the different methods where some use coding to extract the most important aspects or do it manually as it was in this case. If the coding approach was chosen one could question its impact on the case sensitivity as it requires understanding of context. Therefore one can say that the manual method is more suitable in this sense as it captures details and ensures contextual validity. Furthermore, with the human understanding the results could be perceived in a different way due to the contextual setting.

5.5 Future work
Future work relating to the study could be done in different ways to both improve the patient safety in the aspects of the finding of our report but also try to pinpoint further aspects that
could be lacking. Further research that could be of interest to conduct is the correlation between patient safety and worker safety in this kind of setting. Furthermore, solutions to the mentioned issues could be suggested and tried out as an attempt to increase the patient safety.

In the likes of a study similar to this, surveys could be sent out and collected after a certain amount of time, this allows the participants to think through their answers and lessen the pressure compared to the one that comes with having an interview. It could also allow for more elaborate answers as it could be answered in a more relaxed setting. Furthermore, the obtained results could be compared to private hospitals. Additionally, this study could be complemented with the perspective of the actual patients, this as they are the recipients of the care and thus directly affected of the circumstances.
6. CONCLUSION

This study contributes to identifying aspects affecting patient safety in the three biggest hospitals of Puntland, Somalia. By interviews we could map and thematize the main issues to four categories, namely, “Need”, “Device”, “Training” and “Knowledge”. The study showed that the hospitals shared common concerns but to different degrees. However, the transversal issue related to all of these categories and showed to be of greatest significance was the lack therein and thus also the need for; Devices, Training and Knowledge. This showed to implicate that the current hospital environment could jeopardize the safety of the patients, in ways that could lead to misdiagnosis, delayed treatment and in worst cases death.

Consequently, the biggest threat to patient safety was identified as the lack of knowledge of the devices, insufficiency in how to properly use and maintain them along with the problem of outdated, absent and dysfunctioning devices.

With further research or initiatives to change the situation, even minor modifications could be done to improve the patient safety immensely. These modifications does not only concern the need for resources but rather also to increase the awareness of the current status.
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APPENDIX A - Interview Questions

Questions:

Responsible at hospital -

1) How many people are working here?
   a) Different kinds of professions
   b) Regulations about shifts, working hours
2) Does all the staff have the required education to do what they do? (Doctors, nurses, specialists, ER personnel etc)
3) What kind of departments do you have?
   a) ICU - Capabilities, resources (devices, #beds, staff per shift)
   b) Operation facilities?
4) What kinds of devices do you have?
   a) What brands do you choose and is there any choice?
   b) Are these machines bought or gotten from other hospitals? (Worldwide)
   c) Are there any devices you are missing?
5) How are the devices maintained?
   a) Any daily/monthly routines?
   b) Calibration? Who decides when and if its done?
6) How do the staff learn how to use the devices?
   a) Does the devices come with manuals? In what language
   b) Do they teach each other?
7) Repair and spare parts?
8) Power supply? Backup?
   a) Routines regarding what to do in case of power shortage or unexpected events during OP?
9) Regulations about very sick patients with airborne transmitting diseases?

Working Staff -

1) Name, age, profession.
2) How long have you worked here?
3) Which department do you work in?
4) How do you work, working hours, change with other staff, breaks etc?
5) How long shifts do you usually work?
6) What kind of report system do you use?
   a) Journals, communication?
7) Contact with medical devices?
   a) Who is responsible for the maintenance or do you also take part of that?
b) Cleaning and reusing?
c) Re-usage of one-time-usage products?
d) What could be better in order to increase the quality of care?

8) Biggest issue, that reduces the care, regarding the care given?
9) Waiting hours for the ER and to get help?
APPENDIX B - Interview Answers

The following interview answers are from all the hospitals and it can be seen from each interview at which hospital the interview was held at.
Interview #1

When: 16/2 07:00 ca 30 min
Who: -, Hospital director
Where: We meet at his office in Bosaso Hospital

1) How many people are working here?
   In the whole hospital approx. 120-130 persons
   a) What are the different kinds of professions?
      Doctor, nurses, midwives, auxiliary nurses, general nurses, nutricians,
      anesthesiologists, x-ray technicians, lab people, HIV/AIDS specialists,
      consolation staff.
   b) Regulations about shifts, working hours?
      The set rules are six days, and approximately 6 h/day, most of it talk because
      there are not that many patients

2) Does all the staff have the required education to do what they do? (Doctors,
   nurses, specialists, ER personnel etc)
   No. Most of the pharmacy staff, doctors and the nurses have the required education
   from school but not all the personnel have a degree from school. The rest of the
   personnel have more or less the required knowledge from elsewhere, such as a
   previous job in an hospital and then trained in-house to do other duties.
   Often times the ones with experience rather than school degree is better.

3) What kind of departments do you have?
   Surgery, operation theater, maternity ward, pediatrics, (Stora) ot, hemodialysis ward,
   VST, Laboratory, blood bank, xray department, Ultrasound department, mental unit
   and an OPD (Outpatient department)
   a) ICU - Capabilities, resources (devices, #beds, staff per shift)
      One small ICU unit with two beds.
   b) Operation facilities?
      Yes, there is a operation theater with 2-3 rooms for surgery.

4) What kinds of devices do you have?
   We have devices from many different places and of different brands. The hospital is
   the second best in Somalia. There is anesthesia machines, dialysis machines, blood
   banks, laboratory and so on.
   a) What brands do you choose and is there any choice?
      -
   b) Are these machines bought or gotten from other hospitals? (Worldwide)
      Some of them are from other hospitals and some are brought by the hospitals.
   c) Are there any devices you are missing?
We could get the most devices that are needed. The problem is with the repair and maintenance of the devices. There are approximately 2 x-rays not working. There is no endoscopy devices but they are needed.

5) **How are the devices maintained?**
   There is no routine of maintenance or calibration, they use it until it doesn't work anymore. Sometimes they hire someone from abroad, usually 1-2 times per year, for example a bioengineer from China.
   a) **Any daily/monthly routines?**
   -
   b) **Calibration? Who decides when and if it's done?**
   -

6) **How do the staff learn how to use the devices?**
   They use the manual. Read it and use it.
   a) **Does the devices come with manuals? In what language**
      Yes, they come in English, Chinese and Korean.
   b) **Do they teach each other?**
      Yes, they teach each other.

7) **Repair and spare parts?**
   No, see question #5.

8) **Power supply? Backup?**
   There are three different power supplies in the city that the hospital uses, from the generators, from the solar panels and the general electrical output.
   a) **Routines regarding what to do in case of power shortage or unexpected events during OP?**
      No. There are three generators, so if one stops functioning, the other one can be used.

9) **Regulations about very sick patients with airborne transmitting diseases?**
   They will be placed in the Intensive Care Unit where there are two patient beds, one can be put in quarantine.
Interview #2

When : 16/2, approx. 10 -15 min
Who : Biomedical engineer, specialization in dialysis.
Where : Hemodialysis department, Bosaso General Hospital

Working Staff -

1) Name, age, profession
   - 25 years old, Biomedical engineer specialise dialysis

2) How long have you worked here?
   4 months in this hospital. Previously worked in Nigeria, 5 years experience

3) Which department do you work in?
   Hemodialysis department.

4) How do you work, working hours, change with other staff, breaks etc?
   The working hours are not specific, comes when there is a patient. I mainly do supervision of the machine since they are new to the hospital I have to stay around. Work with the operation of the device. The monitor makes it easier to access, it has touch screen, its user friendly, not like the ones without the screen. There are some confusions regarding the nurses job, the technicians job and the doctors job with these machines, for instance the preparation of the machine and so on. It's not difficult during dialysis treatment, there are some alarms

5) How long shifts do you usually work?

6) What kind of report system do you use?
   a) Journals, communication ..
      Usually report when something goes wrong, other than that, there is no reporting.

7) Contact with medical devices?
   a) Who is responsible for the maintenance or do you also take part of that?
   b) Cleaning and reusing?
   c) Re-usage of one-time-usage products?
   d) What could be better in order to increase the quality of care?

8) Biggest issue, that reduces the care, regarding the care given?
   With the dialysis machines, patient wise, when the access is bad, you miss the vascular access and the machines writes the wrong pressure. This affects the patient.
9) **Waiting hours for the ER and to get help?**
Not much. Get treated almost instantly.

**General Thoughts:**
There is a need of someone with very good electrical skills, with electrical aspect. There are voltage problems, fuses and resistors not working. There is no engineering unit that can fix these issues.
Interview #3

When: 16/2, approx. 10 -15 min
Who: -, Nurse, specialization Anaesthesia
Where: Hemodialysis department, Bosaso General Hospital

Working Staff -

1) Name, age, profession
   - 26, Nurse, specialization in anaesthesia

2) How long have you worked here?
   Dialysis department is new, worked here since opening (approximately 3-4 months),
   but for the hospital in general since 2007.

3) Which department do you work in?
   Anaesthesia in the former department and now here (Dialysis department).

4) How do you work, working hours, change with other staff, breaks etc?
   Any time, when there is an emergency, OP no, there are some set hours, 07 -13 next
   day 20 - 13, depending on the patient needs and emergency, if there are short of staff.
   There are in total three nurses in this department.

5) How long shifts do you usually work?
   See answer above.

6) What kind of report system do you use?
   a) Journals, communication ..
      Files and documents, but there are not so many people you know them when
      they come.

7) Contact with medical devices?
   The machine tells which alarms there are, you learn what to do by using it, most
   problems connected with the access of vascular blood.
   a) Who is responsible for the maintenance or do you also take part of that?
   b) Cleaning and reusing?
      We use one-time use supplies and the machine is sent to cleaning within the
      hospital.
   c) Reusage of one-time-usage products?
      No.
   d) What could be better in order to increase the quality of care?
There are many things that you know but you don't have the facilities for. For example, the need of tools to do fistula procedures but then specialists are needed to do this as well.

8) Biggest issue, that reduces the care, regarding the care given?
   -

9) Waiting hours for the ER and to get help?
   -

Some general thoughts:
For some training we are sent to Hargeisa. First there is some training done here then next step is thought in Hargeisa. Its close to Ethiopia and this is needed for emergencies. I have not visited other hospitals, but i guess we are not much different compared to them. Training is needed the most for the medical devices, there are some devices but they need education in how to use them. An example is the anaesthesia devices.

Do you think you have the capacity to fit the need of the people in the city?
Emergency equipment to stabilize the patient is needed but the rest is ok. Our hospital needs improvement and prosperity. As in different facilities, we need an ICU, neonatal department and more.

Hospital help:
Maamulka hospitalka ayaa waadda.
Interview #4

**When**: 16/2, approx. 1 h 10 min

**Who**: - , surgeon and partly administration (general management)

**Where**: Upstairs in the hospital, his apartment in the hospital, Bosaso General Hospital

**Working staff** -

1) **Name, age, profession.**

   - . Surgeon and general managing.

2) **Previous experience?**

   Two degrees in Finland, medicine resensiate of medicine (?). Worked a little less than 10 years in Finland. Worked 1985 in Tanzania. Have worked mostly in central east Africa.

3) **Is there any professions missing?**

   General manager , most important, doctors with good general medicine are missing, medical technology, repair skilled personnel.

   a) **Regulations about shifts, working hours**

   No, 24/7 over 12 when not on holiday.

4) **Is there anyone who can fill your position?**

   - , he also here. He does surgical operations as well.

5) **Does all the staff have the required education to do what they do? (Doctors, nurses, specialists, ER personnel etc)**

   No. Training in this hospital or other hospital. It is common that they hire staff as cleaners first, if they seem smart they train them to learn the skills they need but they send them away if they are bad. Some get qualification afterwards, once they have worked a while.

6) **What kind of departments do you have?**

   a) **ICU - Capabilities, resources (devices, #beds, staff per shift)**

   b) **Operation facilities?**

      2 rooms, could be enlarged to 4.

7) **Is there something missing for emergency situations?**

   Operation lights, suction machines (surgical + anaesthesia), separate suction machines for these two teams. Tend to start the surgery without suction machines. Use it when they need it. No preparations beforehand.
Charges - 3 dollar, only for the visit. You have to pay separate for lab, drugs and surgery. It is less expensive here than at private hospitals. The entertainment level of care is less here. Private sectors does not normally have any doctors at night. There is a two prising system, pay 5 dollars for private toilets. We don't have a system for those with no money. We could improve, for example by increasing the payment for those who have too much money. I tried a to make a suggestion about this.

There are special cases, for instance regarding gunshots - the gunman's family should pay for the costs of the injured patient, but we do not insist for payment if they don't find the one who shot. This helps discourage the people to use the guns, and it's also a kind of funding for the hospital. It is not an official system yet but we do try to implement it.

10) How are the devices maintained?

Cleaning the tools:

The only way to sterilize the cloths and rubber material is autoclave at 1 Atms, 1000 degree. But instead they use dry heat oven with 180 degrees - temp inside does not reach 50 degrees, but they use it because they think that they are right. They use it for anything, but not for rubber or plastic because they melt. Antiseptics are unreliable to clean rubber and plastic with.

Ethyl oxide autoclave, expensive toxic and difficult to use. Chemical sterilization and cleaning, CDX best to use, very reactive, used for gastroscopes. Hand sanitizer for the rubber gloves. Metal instrument easily reach the hot oven temp, but not good.

We do not reuse the one-time-use gloves, price of sterilized gloves is very low. It's reasonable to buy them.

Not contamination
Syringes and needle sterilize.

Responsible of one time use storage:
   Cleaner - instrument nurse - chef of op nurses-
   In-charge of the one time use.
   The nurses who assist the surgery clean the tools.

a) Any daily/monthly routines?

b) Calibration? Who decides when and if it's done?
   No, I do it sometimes.
They don't count the tools before and after operation. Use what comes in mind, no preparation beforehand. They use what they used for the operation before and then clean and use for the next one again.

Not so common to have malfunctions in labs. But in OP theater, there is an increased need of maintenance because of the already used products. (Note* meaning old devices) Should have a technician present as well.

11) How do the staff learn how to use the devices?
From others, I (Mikko) have tried to organize lessons, but not many are interested. Few training sessions are held.

a) Does the devices come with manuals? In what language.
We do not use manuals.

b) Do they teach each other?
They do, most of the communication and teaching is done face to face. There are no written documents. No patient records at all in Somalia. The only writing is done on lab requests and on drug prescriptions. All other shifts of nurses are not doing the report face to face. The doctors change and the family members talks to nurse. They do not read the records but talk to the family instead. Also there is 30 minute between the shift change. So the nurses do not meet to hand over the patients to the next nurse.

Biggest problem about the staff. There is a need for good international level staff and the best would be if they were ethnically Somali because it's a familiar language and cultural aspects which they learn more rapidly.

12) Repair and spare parts?
We had one guy from Nairobi with a broad range of knowledge in equipment. He took off with the circuit card of the ultrasound machine and never came back.

13) Power supply? Backup?
We have three generators, if two are broken at least one is functional. The director has given order that the one who switch”’s
There are two general electrical power grids, one private and one governmentally owned. Don't have solar panel system, not used because they charge the batteries, much more economic to charge it with the power grids.

a) Routines regarding what to do in case of power shortage or unexpected events during OP?
If the patient is on ventilation, if it has battery it will work, or else manual intubation. There is no problem anaesthesia-wise.
Most often the power comes back in 5 min. If not they get the generator going in approximately 15 minutes.
Good to have car batteries, 12 V ventilators work with them too, then they can use it for OP rooms, could change between AC/DC, good to spare the battery as well.

14) Regulations about very sick patients with airborne transmitting diseases?
No, there is not a special room. We treat those as usual, respiratory infections are one of the most common diseases.

Other thoughts -

Infections:
Sterilizing the gloves, hand disinfectant, difficult to manage the people to make the right decisions.
Single patient room are used for dangerous diseases. Single rooms used for those who pay 5 dollars, isolation of patient of diseases which are not common.
People of lower “value” put in isolation.

CT - centre:
90 % head injuries cannot be helped. The CT scan is extremely important. The chest xray, bowel and ultrasound could cover almost everything but not head injuries.

If the patient is unconscious, the cause can be determined by the CT scan but here we cannot do that. In order for us to examine the head and brain, we must remove a piece of the skull bone and then use the ultrasound machine.

MTB - Mean time before breakdown below 7 days. Unnecessary to donate O2 concentrate. MTB is ca 5 years and it's cheap to replace. Ultrasound device, at least 10 years.

Expiring CO2 machines - easy to repair, easy to send to manufacturer because they are small compared to other devices.

Capnography - unused in Africa. There is an interest in increasing the number of these in Africa.

Should be controlled - enough O2 and right amount of CO2 when unconscious to have trouble breathing. The CO2 is controlled by the ventilator settings. If the CO2 goes either up or down, it is bad for the patient and could lead to death.
There are no good equipment for blood pressure measurement in small babies. What we get is a small signal, almost the same as the background noise. What can be done instead is to put a cannula in artery to measure the real invasive blood pressure but it's above their knowledge. Also, oscillometry is used instead, measuring the movement of the vein. Could maybe done better with doppler instead. It is difficult because I am the only one doing it. Oscillometry, stethoscope and pulse oximeter, seems bad and then also to measure the pulse with one's fingers.

**What is there in Sweden for this?**
No reasonable way to measure the blood pressure for babies.

If they have temperature monitoring, use a thermometer, one in the armpit and one on the toe, it gives the temperature central vs peripheral and that gives additional information. If the central drops and the connection to the peripheral. Very cheap and easy.

Blood pressure monitor in one hand and the oscillometer on the other. Trying to find something from background signals and the real value. Someone died because the oscillator showed high values while the real was very low.

If the feet are warm and pulse is strong, feel with fingers,
If foot temp is going down, CO2 is going down. This is a non invasive CO measurement.

In Africa many died from hypothermia. Usually people in OP or very sick in chock. If room temp is too low, need to have proper body temperature.

Do not measure the temperature during OP. Cultural reasons, put it in rektum with plastic cover and no one wants to use it for esophagus.
Interview #5

When: 18/2, approx. 5-10 min
Who: -, Nurse, specialization midwife.
Where: Fetus centre & Delivery department, Bosaso General Hospital

Working Staff -

1) Name, age, profession.
   - ,-, Nurse midwife

2) How long have you worked here?
   Since 2000 (17 years). Have previously worked in Burca, approximately 2 years as a midwife but left because of the wars.

3) Which department do you work in?
   Fetus center and delivery department

4) How do you work, working hours, change with other staff, breaks etc?
   From 7 in the morning until one o'clock or sometimes two, until the next shift workers come, she is in charge of the midwives.

5) How long shifts do you usually work?
   See #4

6) What kind of report system do you use?
   a) Journals, communication.
      We use flowcharts to fill in when patient comes, where we take in different information of the patient. Each patient has a file (paper, not digital).

7) Contact with medical devices?
   a) Who is responsible for the maintenance or do you also take part of that?
      Same as previous interviewee
   b) Cleaning and reusing?
   c) Re-usage of one-time-usage products?
   d) What could be better in order to increase the quality of care?

8) Biggest issue, that reduces the care, regarding the care given?
   The oxygen for the children when hospitalized, the staff that needs training in almost every aspect and the knowledge that the society have. For example a mother with a miscarriage didn't know about it and came here after approximately 2 weeks later with
the child still in the stomach. This harms the mother and could be dealt with if they had more knowledge in what to do or when to seek help.

9) **Waiting hours for the ER and to get help?**
They get help and care instantaneously, they meet a nurse first and the doctor thereafter.

10) **Is there anything you feel is missing from this hospital/this department?**
Yes, there are many things missing. The need is there but not as you want it. For example, there is only one stove, we lack oxygen for the patients, incubators are needed, also suction devices for children (2 different types) are needed. Oxygen is only available in the surgery theater, here we use an arm-bag instead. Overall, the tools need better quality and there is also a need for midwife and newborn baby training, we also need sterilization tools.

11) **How is the cleanliness of the hospital?**
We think is good, but compared to yours (Sweden) it is different, we are the best in Puntland so we do not see the troubles.

12) **General thoughts about the hospital?**
We have worked a lot with the hospital. But more knowledge, better tools and training is needed. We always want to learn more and gain more to give better care. Other countries train and give their staff better opportunities to become better.
Interview #6

When: 18/2, approx. 5-10 min
Who: -, specialization auxiliary midwife.
Where: Out-patient Department, Bosaso General Hospital

Working Staff -

1) Name, age, profession.
   - -, Auxiliary midwife

2) How long have you worked here?
   7 years in this hospital and 2 years previously in an MCH (Mother and Child Health Centre)

3) Which department do you work in?
   OPD (Out-patient Department) and with expecting/pregnant women.

4) How do you work, working hours, change with other staff, breaks etc?
   6:30 - 13 and then the next shift workers comes in.

5) How long shifts do you usually work?
   6-7 h

6) What kind of report system do you use?
   a) Journals, communication.
      We write reports, take history, check past history, anamnes, blood tests, lab, X-rays, ECGs. Most of the patients have fertility test taken. Many of them come from different states of the country because it is the biggest hospital in the area.

7) Contact with medical devices?
   We use computer blood registration, prescriptions, urine exams, diabetes check, to know what the patients have or what they are suffering from. We also use devices to determine how far they are in the pregnancy.
      a) Who is responsible for the maintenance or do you also take part of that?
      -
      b) Cleaning and reusing?
      -
      c) Re-usage of one-time-usage products?
      -
      d) What could be better in order to increase the quality of care?
      -
8) Biggest issue, that reduces the care, regarding the care given?
The tools. EX. Its easier to use the devices with the fetal heart monitors, the computer cannot handle it, hemoglobin checks are missing, BP checks are not sufficient, iron checks and so on. Moreover, the training (actual practice and guidance), books are also needed and information for the patients (eg. information sheets and alike). They use reputations to know which doctor they want, its an oral community. If a friend had one doctor, she recommends him to her friend and they demand the same one. Even if it is for a whole other issue.
An example of a tool that is needed: Oximeter.

9) Waiting hours for the ER and to get help?

10) How is the cleanliness of the hospital?
100% the best, they clean whenever it's needed and get rid of unnecessary dirt.

11) General thoughts about the hospital?
There are a lot of sick people with many troubles, most of them are diagnosable and treatable, but the ones with money want to send their sick ones to Hargaisa (another city) for treatment, it is like a market.
For instance if they have coma or something like that and the relatives still want to send the person to a hospital far away and they die on the way. They (the people) need more knowledge.
Ethics are not ok, they do not know that, they do not have that. They seek a certain doctor and lose time because of that, the issues becomes worse than it was in the beginning.

How will they choose to come here?
If we have doctors that have knowledge. Some say you can go everywhere, but they need to know where to head.

Additional questions:

12) How do the staff learn how to use the devices?
All other staff get training from doctors. A company (Golis) trained them for the brand. If the doctors cannot do it, the hospital hire people to teach them.

a) Does the devices come with manuals? In what language?
We have certain rules. For the ultrasound machines, the nurses are not allowed to use them. They would need to be trained in order to use them or as it is today, they have to wait for the doctor to come and do the Ultrasound check on the patient.
Interview #7

When: 18/2, approx. 5-10 min
Who: -, Doctor.
Where: Maternity ward, Bosaso General Hospital

Working Staff -
1) Name, age, profession.
   - -, -, Doctor

2) How long have you worked here?
   Since 1990, 27 years. Also worked in Xamar as MOH (Medical Officer of Health),
district medical officer, regional medical officer.

3) Which department do you work in?
   In the maternity ward

4) How do you work, working hours, change with other staff, breaks etc?
   Regularly 6h/day. But we are on-call 24h, 2 days a week.

5) How long shifts do you usually work?
   See question #4

6) What kind of report system do you use?
   a) Journals, communication.
      We sometimes use a data-based system. We have different forms that we fill
      in but also record reports of previous visits.
      For the communication between the staff, there is a paper of the shifts and
      who is working and when one shift is done they hand the patients over to the
      next shift workers. The nurses work 3 different shifts, every 8 hours a new
      shift begins. In the mornings we walk rounds and see every patient.

7) Contact with medical devices?
   a) Who is responsible for the maintenance or do you also take part of that?
      The OP (surgery) staff clean the tools. They use hot oven to sterilize and use
      the tools afterwards.

   b) Cleaning and reusing?

   c) Re-usage of one-time-usage products?
      No, one-time-use products are only used one time.
d) What could be better in order to increase the quality of care?
   The training of the staff. For example, there are some hospitals in Ethiopia and
   Nairobi that every year have continuous education and training for their staff.
   Here we don't have that. Sometimes we get training, for instance in-house
   training, but not so much. But all the staff needs that, the technicians, all the
   departments.
   We also need better tools, better capacity, resources and tools for far
   transportation.
   There is also a deficiency in the tools we have, most of the machines we have
   are outdated and old. If the machines would stop working we would have
   issues.

8) Biggest issue, that reduces the care, regarding the care given?
   Regarding the staff, they need salary. They do not get a lot of pay and the hospital it
   self also needs money. Moreover, the staff needs training and the machines need
   reparation. The hospital need new devices, we have no access to other devices nor the
   resources.

9) Waiting hours for the ER and to get help?
   -

10) How is the cleanliness of the hospital?
    Universal contaminations - boiling, disinfection or klorin or sterilization (hot oven).
    The best and most quality.

11) General thoughts?
    Training for the staff is essential. As Bosaso is the fastest growing city in Africa, the
    hospital needs a bigger capacity and better resources, such as non available tools and
    drugs.
    The most frequent procedure is C-sections, accidents and emergencies. There is a lot
    missing in the operation theatre and an ICU (and anesthesia tools) is needed. Not only
    the tools but the workers are not trained for that. The staff use the tools they know
    how to use and if they don't they wait for an opportunity to try it or they leave it in
    spare.
Interview #8

When: 18/2, approx. 5-10 min
Who: -, Nurse.
Where: Pediatric ward, Bosaso General Hospital

Working Staff -

1) Name, age, profession.
   - -, Nurse.

2) How long have you worked here?
   Since 1990, 27 years.
   Used to work in Hospital Banadir for 10 years, at the maternity ward.

3) Which department do you work in?
   The pediatric ward

4) How do you work, working hours, change with other staff, breaks etc?
   06-13/14. Cannot leave the patient, sometimes I have to wait till the next worker for
   the next shift comes in.

5) How long shifts do you usually work?
   Usually between 7-8 hours.

6) What kind of report system do you use?
   a) Journals, communication.
      We write an anamnesis when the patient arrives. We can also look at the
      register (journal) and see what has been done prior to this visit.

7) Contact with medical devices?
   a) Who is responsible for the maintenance or do you also take part of that?
      -
   b) Cleaning and reusing?
      -
   c) Re-usage of one-time-usage products?
      -
   d) What could be better in order to increase the quality of care?
      -

8) Biggest issue, that reduces the care, regarding the care given?
   As a nurse, when they need oxygen and there are no left for the patient, also
   incubators, if there is no incubators what do you do?
We have a hand/manual pump and use it for temporary care and try to make it better so we have the child in our arms all the time. It have happened that the patient have died while you are on the run and looking for an incubator.

9) **Waiting hours for the ER and to get help?**
   ER help is always urgent. We do it right away and call a doctor if there is no in the building. There is also on-call help via telephone and they tell you which drug to use and what to do.

10) **Nadaafada isbitaalka sidu yahay/How is the hygiene of the hospital (general cleanliness)?**
   Very good, they clean in the morning and the evening, and also when it's needed.

11) **General thoughts about the hospital?**
   The power system. They need to have enough of the stored energy in the solar panel so that if there is a outage that they can use the solar panel system instead, it saves people. There could be an outage in the middle of the night.

**Additional questions:**

12) **What kinds of devices do you have?**
   Beds, mattresses, registers, drugs prescriptions, O2 machines are needed
   Often no space to give the patients, they get tired of walking around and looking for O2 machines.
Interview #9

When: 18/2, approx. 5-10 min
Who: -, Nurse, Specialization Midwife.
Where: Maternity ward, Bosaso General Hospital

Working Staff -
1) Name, age, profession.
   - -, -, Midwife

2) How long have you worked here?
   I have worked here 7 years. I have not worked at any other place prior to this.

3) Which department do you work in?
   The Maternity ward.

4) How do you work, working hours, change with other staff, breaks etc?
   There are 3 shifts, each shift is 8 hours.

5) How long shifts do you usually work?
   See question #5.

6) What kind of report system do you use?
   a) Journals, communication.

7) Contact with medical devices?
   We use devices to monitor the fetal heart sound, CTG (Cardiotopography). We do not use much of the ultrasound machine.

8) Who is responsible for the maintenance or do you also take part of that?
   a) Cleaning and reusing?
      We use sterilization, each person responsible for saving and cleaning the used tools, some that are cleaners but the most do it themselves.
      There is a special room for sterilization but they don’t use it, easier to use the smaller things, the others takes to long time.

   b) Re-usage of one-time-usage products?

   c) What could be better in order to increase the quality of care?

8) Biggest issue, that reduces the care, regarding the care given?
9) Waiting hours for the ER and to get help?

10) Nadaafada isbitaalka sidu yahay/How is the hygiene of the hospital (general cleanliness)?
    Each state has its own routine, they would need some more. Each 5-6 days they also clean the walls, but other than that it is very clean. During each shift there is some cleaning done.

11) General thoughts about the hospital or improvement aspects?
    If there is something that needs improvement it has to do with abortion. There is a need for training about premature children and incubation. The training is most difficult. We also need a special ward for these kind of patients. There has been many occurrences where patient die. We also do not use incubators, this is because it uses electricity and this is expensive. We have some solar panels but they are used to lighten the back and front of the hospital building.

Additional question:

12) How are the devices maintained?
    CTG, training, other thing they know how to use but the new things they learn on the go or they hires someone outside
Interview #10

When: 21/2
Who: - , 28, doctor.
Where: Garowe General Hospital, Garowe

Working Staff -

1) Name, age, profession.
   - , 28, doctor.

2) How long have you worked here?
   A year and half

3) Which department do you work in?
   Pediatric department, the emergency and the out-patient department (OPD).

4) How do you work, working hours, change with other staff, breaks etc?
   We work in shifts, from 08-13. I work one day at the emergency between 8-20, and one day in OPD the same hours. Sometimes we also work night shifts between 9:30 - 08.

5) How long shifts do you usually work?
   See question above (#4)

6) What kind of report system do you use?
   a) Journals, communication.
      We use files, admission files, which are patient-specific. In the Outpatient department there are no files. There are some mild emergency cases that we have to handle at the OPD but not always.

7) Contact with medical devices?
   a) Who is responsible for the maintenance or do you also take part of that?
   b) Cleaning and reusing?
      No
   c) Re-usage of one-time-usage products?
   d) What could be better in order to increase the quality of care?

8) Biggest issue, that reduces the care, regarding the care given?
   It's an hospital that has no governmental regulations. The government only use the hospital's name but does not help in anything. The people help us.

Help organisations?
There are a few help organisations involved but they do not do much. They also use the name of the hospital for commercial purposes. We do not get any help from them. Many people who come do not have anything and need help. We can not afford to help them, our budget is limited but we must do it anyway. The government does not care and do not want to know about these issues.

9) How is the cleanliness of the hospital?
   The offices are cleaned three times per day, in the morning, afternoon and during the night. The outside of the building needs more care. We also clean the treatment rooms before and after each patient. There is a lot of staff and the hospital is big.

10) General thoughts about the hospital?
   The hospital needs more resources. The beds are old, so are the rooms and the facilities. The whole building as it is needs fixing.

11) Do you think the hospital can fit the needs of the people?
   There are a lot of people coming here. We get 40 new patients on an average per day. The busiest departments are the maternity and the pediatric ward.

Additional questions:

12) What kinds of devices do you have?
   Emergency devices, ultrasound machine, x-rays, ECG.

13) Sterilization of used tools?
   We use the autoclave for sterilization.

14) How are the devices maintained?
   There are staff for that. Also it depends on the device it is and what kinds of cleaning it needs.

15) How do the staff learn how to use the devices?
   I have not experienced any new devices that we need to learn. I already knew how to use the ones we have. But I have heard that there used to be training. They would have someone from Germany who came and gave them training and taught them how to use the Ultrasound machine, around 2007.

   a) Does the devices come with manuals? In what language
   -

   b) Do they teach each other?
   If the person do not know, we teach each other how to use the machine. We do not start directly, if they already knew how to use it we still let them know.
Interview #11

When: 21/2
Who: -, -, Head of Pharmacy.
Where: Pharmacy in the hospital, Garowe General Hospital, Garowe

Working Staff -

1) Name, age, profession.
   - -, -, Head of Pharmacy.

2) How long have you worked here?
   I started working here 1986 (31 years).

3) Which department do you work in?
   In the hospital pharmacy.

4) How do you work, working hours, change with other staff, breaks etc?
   We usually work 8 h per shift, 07 - 14, 7 days per week. On fridays they are on-call.
   This department works these hour with 3 persons.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      People walk in with prescriptions, some use ordinations. This is the dispensary, there is also a store.
      The management is responsible, the head of the pharmacy is responsible.

7) Contact with medical devices?
   They are not in contact with the devices.
      a) Who is responsible for the maintenance or do you also take part of that?
      -
      b) Cleaning and reusing?
      -
      c) Re-usage of one-time-usage products?
      -
      d) What could be better in order to increase the quality of care?
      -
8) **Biggest issue, that reduces the care, regarding the care given?**

The hospital needs devices. The surgeries made are lacking and the staff need the proper devices. I.e., oxygen is needed and we then have to get it from Galkacyo (another city in the region).

They look at the expiring date and if there is the right thing, there are things that some doesn't know.

Pull & pull system, you do not have a say, what they see is needed they bring and do not ask if it's needed, some are in overflow, some are less.

12) **How is the cleanliness of the hospital?**

It is good. They work hard and there is a lot of staff, there is even some in practice. But they do not get education or training in how to clean the medical devices so the nurses clean them instead.

13) **Do you think the hospital can fit the need of the people?**

The hunger for help is bigger than what we can offer. There are lot of people here. The supply is very small, the population is big and the hospital cannot fit their needs.

14) **General thoughts about the hospital?**

The staff and the technicians need training. The hospital needs devices and drugs that can be supplied.

Note:
During the interview a patient comes in with a note. The pharmacist advises the patient to go back to the doctor and get a real prescription.
Interview #12

When: 21/2
Who: -, 25, pharmaceut.
Where: Pharmacy in the hospital, Garowe General Hospital, Garowe

Working Staff -
1) Name, age, profession.
   - , 25, biochemical, public health and pharmacy.

2) How long have you worked here?
   7 months here, previously as a teacher and pharmacy owner for 7 years.

3) Which department do you work in?
   Pharmacy department but also in the supply for the nutrition department.

4) How do you work, working hours, change with other staff, breaks etc?
   In this department, the same as the previous interview and on-call during the night.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      MCH transfer (There is a supervisor which is also connected), OPD transfers, SC height, proactive, malnutrition. The patient has a paper from each department and they work from there.

7) Contact with medical devices?
   a) Who is responsible for the maintenance or do you also take part of that?
      -
   b) Cleaning and reusing?
      No, use for one person and not for the other one
   c) Re-usage of one-time-usage products?
      -
   d) What could be better in order to increase the quality of care?
      -

8) Biggest issue, that reduces the care, regarding the care given?
The city is becoming bigger. The load, the devices and the people do not match. The staff that are specialized are only one or two, more people are needed.

9) **Waiting hours for the ER and to get help?**

   

10) **General thoughts about the hospital?**
    
    The population is big, needs specialists such as surgeons, bigger area is needed and the supply need to be better. The supply is not sufficient and it sometimes happens that they fall short and that it's not enough for all the patients.

**Additional questions:**

11) **What kinds of devices do you have?**
    
    SC -Stam session, O2 , ready food, Milk for nutrition needs
Interview #13

When : 21/2
Who : - , 52+ , Auxiliary midwife
Where : Garowe General Hospital, Garowe

Working Staff -
1) Name, age, profession.
   - , 52+ , Auxiliary midwife

2) How long have you worked here?
   I have worked here since -91 (27 years). Works with the MCH Jawle 6 years ,
   Sterilization area also (stoofa , kind of sterilization technique)
   Bring the one who needs to come here also and reports from the MCH

3) Which department do you work in?
   I work in the maternity ward.

4) How do you work, working hours, change with other staff, breaks etc?
   Eight hours a day. All days except friday.

5) How long shifts do you usually work?
   See question above (#4)

6) What kind of report system do you use?
   a) Journals, communication.
      We keep journals and communicate with each other. We hand over patients
      both as written information and face-to-face to the next shiftworker.
      Additionally a signature is needed.

7) Contact with medical devices?
   Scrub nurses clean the devices. I am responsible for the sterilization , they use the
   stoofa.
   They clean it with everything, cloths, and tools
   a) Who is responsible for the maintenance or do you also take part of that?
      -
   b) Cleaning and reusing?
      -
   c) Re-usage of one-time-usage products?
      No re-usage. It is all wasted.

d) What could be better in order to increase the quality of care?
8) Biggest issue, that reduces the care, regarding the care given?
The devices are very poor, the people also and the staff. The need and the capacity
does not match. The hospital cannot take in that many.

9) Waiting hours for the ER and to get help?

10) Nadaafada isbitaalka sidu yahay?

11) General thoughts about the hospital?
Need more devices and training. If the hospital can be improved, doctors wise,
building wise and staff wise. We also need more knowledge spread to the people, all
these 27 years i've been here we haven't gotten much training.

Additional questions:

12) What kinds of devices do you have?
Delivery kits, which has six pieces and we sterilize them. Each kit is used for one
person. We also have suction cups for the children. We also have drugs for starting
labour. We also used to listen manually after the fetus but now we have a device for
it.

13) Are there any devices you are missing?
There is not enough devices, too little, stoofa need to be dry, this one uses water,
makes the devices sweat and damp. not used for 3 days then they will have mold on
them.

14) How do the staff learn how to use the devices?
The one who is most confident tries to use the devices that are new to them. If there is
no one who can teach them, they store and try looking for someone outside to teach
them.
There are some devices that have a small problem, and it is put in inventory because
there is no one who can fix it. Needs people to fix the devices.

   a) Does the devices come with manuals? In what language

   b) Do they teach each other?
Interview #14

When : 21/2
Who : -, -, Hospital cook
Where : Garowe General Hospital, Garowe

Working staff:

1) Name, age, profession.

- -, -, Hospital cook

2) How long have you worked here?
Since the war in Galkacyo, approximately since 1993 (24 years).

3) Which department do you work in?
I am a cook in the Hospital kitchen.

4) How do you work, working hours, change with other staff, breaks etc?
We work from noon till six o'clock in the afternoon

5) How long shifts do you usually work?
Usually six hours.

6) What kind of report system do you use?
   a) Journals, communication.

7) Contact with medical devices?
We have no contact with the medical devices, but we use the cooking devices such as charcoal, pots, etc. No machines.

   a) Who is responsible for the maintenance or do you also take part of that?
   -
   b) Cleaning and reusing?
   -
   c) Re-usage of one-time-use products?
   -
   d) What could be better in order to increase the quality of care?
8) Biggest issue, that reduces the care, regarding the care given?
   There is a lot missing in the hospital such as staff and devices.

9) Waiting hours for the ER and to get help?

10) How is the cleanliness of the hospital?
    We clean the area ourselves. We use a rag to clean and a broom for the floors.

11) General thoughts about the hospital?
    There are 2 people as the kitchen staff, if one is sick there is just one left. Need more
    staff here.

    Additionally there is no training prior or after. There is a lot that is missing for the
    patients as well and they need better care.

Additional question :

12) Do you think this charcoal is bad for you?
    Yes, you feel that the charcoal is irritating for the system and you cough out black
    slime after a while.
Interview #15-#16

When: 21/2
Who: - , 38, Gynecologist and - , 26, General practitioner (Dr.).
Where: Garowe General Hospital, Garowe

This interview was conducted with 2 of the staff at the same time due to their time restrictions and wishes.

Working Staff -
1) Name, age, profession.
   - , 38, Gynecologist.
   - , 26, General practitioner.

2) How long have you worked here?
   1: Since 2015 April in this hospital.
   2: One month. internship before.

3) Which department do you work in?
   In the ER two days a week, from 12- 8 pm (night shift) and also in the neonatal department.

4) How do you work, working hours, change with other staff, breaks etc?
   10 h, 36 h per week

5) How long shifts do you usually work?
   See question above.

6) What kind of report system do you use?
   a) Journals, communication.
      We write reports every three months and there is someone responsible for that. As every patient come, we take notes, write the date, name, gender, from which city they have come from, signs of pain. We also ask if they have been prescribed any drugs previously and such.

      We also talk among the staff about the patient and when we hand the patient over for the next shift workers.

7) Contact with medical devices?
   a) Who is responsible for the maintenance or do you also take part of that?
b) Cleaning and reusing?


c) Re-usage of one-time-usage products?


d) What could be better in order to increase the quality of care?


8) Biggest issue, that reduces the care, regarding the care given?
   There is not only one problem. The government is diminished, the healthcare companies/factories and the hospital is in a financial crisis. The knowledge is not lacking but the economy and the administration is lacking in many aspects. An example, we do not have any hemodialysis machines.

9) Waiting hours for the ER and to get help?
   It depends on the normal status, the people that works and that golden minute. Its about utilizing the moment the patient comes in and try to do the best of it.

10) How is the cleanliness of the hospital?
   There is no air pollution and we think this is better. The other dirt is much less, 60% is ok and we do not have much COP respiratory diseases.

11) General thoughts about the hospital?
   If there is people who can help.
   It is the capital of the region and the hospital is close to the ministries. They wanted it to be a world standard hospital and if there is people who wants to help to reach the goals, all help is accepted. We do not just treat Somali people but all the people who need help.

12) Does the hospital fit the need of the people?
   The surgery department is lacking people.

Additional question:

13) What kinds of devices do you have?
    O2-machine, nebulizers, beds, cardioversion/defibrillators, ECG, Sterilizer, refrigerator.

14) What brands do you choose and is there any choice?
a) Are these machines bought or gotten from other hospitals? (Worldwide)
   There are 2 different ways. Either it is through some donation (help
   organisation and such) or that the hospitals buys it themselves, which take
   longer time, ex our O2 machine and nebulizer.

b) Are there any devices you are missing?
   Absolutely. What we have is actually little. CT was needed, we have no MRI
   scan here and we have to send people to Hargaisa (another city in another
   region) for many procedures because of this.

15) How are the devices maintained?
   Yes, there are trained people, who check that the machines are not endstate and
   maintains them.

   a) Any daily/monthly routines?
      They check the devices when they go bad. If they think that it has a problem,
      they try to solve it.

   b) Calibration? Who decides when and if it is done?
      -

16) How do the staff learn how to use the devices?
   We have one of our staff who was taught in China. He knows how to use the most
   devices. Otherwise we have people which come to educate, some come from
   Sudan, China, Germany or other places.

   a) Does the devices come with manuals? In what language
      Yes, mostly in english. We use the devices to learn how to do but we also try
      to use the manuals.

   b) Do they teach each other?
      There was this ECG we had which was two kinds. The one kind we had, there
      were some doctors who came from China that used it. The understanding of
      the machine was difficult. In the beginning we tried to teach each other and
      discuss amongst ourselves.

   c) Repair and spare parts?
      -
Interview #17

When: 21/2
Who: - , - , Head of nurses
Where: Nurses department, Garowe General Hospital, Garowe

Working Staff -
1) Name, age, profession.
   - , head of nurses.

2) How long have you worked here?
   4 years in this department. Previously in the pediatric department for 3 years.

3) Which department do you work in?
   Nutrition department

4) How do you work, working hours, change with other staff, breaks etc?
   We work eight hours per shift and we have shifts that rotate.

5) How long shifts do you usually work?
   See question above.

6) What kind of report system do you use?
   a) Journals, communication.
      We have admission books for the patient that has to stay and other books for
      the damaged ones. We also have a book for transfers, there is also a data
      system in which we later report it to. If the same patient visits the hospital
      again we could look at his/hers card (which was given to the patient during the
      last visit) but we could also find the records in our books.

7) Contact with medical devices?
   a) Who is responsible for the maintenance or do you also take part of that?
      There are staff appointed for those tasks.
   b) Cleaning and reusing?
      We use sterilization. There are people who do it. The tools which need
      sterilization are sterilized, the others which needs to be thrown away are
      thrown.
   c) Re-usage of one-time-usage products?
      No, just use it once.
   d) What could be better in order to increase the quality of care?
      -
8) Biggest issue, that reduces the care, regarding the care given?
Nothing that I can think of, at least not in this department.

9) Waiting hours for the ER and to get help?
-

10) How is the cleanliness of the hospital?
I do not think it is bad, it is good. The staff clean in between the patients.

11) General thoughts about the hospital?.
Knowledge and training is good and needed. The knowledge is most important.

Additional question:

12) How many people are working here?
Five nurses.
   a) Different kinds of professions
      All nurses. He has a degree in nutrition.

13) What kinds of devices do you have?
Oxygen, hemoglobin, manual handbag/pump, suction.
   a) Whats brands do you choose and is there any choice?
   b) Are these machines bought or gotten from other hospitals? (Worldwide)
   c) Are there any devices you are missing?
      Yes, but not those that are big of a deal.

14) How are the devices maintained?
Yes, there are trained staff which are responsible for the maintenance.
   a) Any daily/monthly routines?
      They check the machines every week.
   b) Calibration? Who decides when and if its done?
      -

15) How do the staff learn how to use the devices?
The organizations who bring the tools provide training. If they dont and if staff do not
already know how to use it, they look for a person to teach them or it gets stored.
   a) Does the devices come with manuals? In what language.
      -
   b) Do they teach each other?
      -
Interview #18

When : 22/2
Who : - , 24, General practitioner.
Where : Garowe General Hospital, Garowe

Working Staff -

1) Name, age, profession.
   - , 24 years, GP. Pediatric/nutrition.

2) How long have you worked here?
   I have worked here for 5 months.

3) Which department do you work in?
   I work in the pediatric/nutrition department.

4) How do you work, working hours, change with other staff, breaks etc?
   From 8 to 7. Approximately 10 hours sometimes more.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      The person comes to ER first and then have a admissions paper. We mostly treat malnutrition cases. There are different cases. We connect the people to the local Mother-Child Healthcare center (MCH).

7) Contact with medical devices?
   We have oxygen, nebulizer, malnutrition feeding devices, milk and such.
   
   a) Who is responsible for the maintenance or do you also take part of that?
      There is nutritional doctors who are responsible for it. They also work in shifts.
   b) Cleaning and reusing?
      -
   c) Re-usage of one-time-usage products?
      No re-usage of used food. Each eight hours we use one set of milk for the patient. If it is not used up, we follow up on why.
   d) What could be better in order to increase the quality of care?
      -
8) Biggest issue, that reduces the care, regarding the care given?
    No big issue. We have what we need.

9) Waiting hours for the ER and to get help?
    -

10) How is the cleanliness of the hospital?
    There are people who are in charge of it, it is good.

11) General thoughts about the hospital?
    No.
1) Name, age, profession.
   - , 35, Specialist.

2) How long have you worked here?
   A few months in here Garowe. Previously in Bosaso and Hargeisa for more than 10 years.

3) Which department do you work in?
   I work in the Obstetrics and Gynecology (Gyn-Obs) department.

4) How do you work, working hours, change with other staff, breaks etc?
   Eight hours a day and then in the ER sometimes. We work six day a week.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      We use admission cards and documents.

7) Contact with medical devices?
   We use the common devices in our department, the Obs-gyn devices.
   a) Who is responsible for the maintenance or do you also take part of that?
      There is a department who is specialized with the maintenance of these devices.
   b) Cleaning and reusing?
      There are people cleaning the devices that needs cleaning.
   c) Re-usage of one-time-usage products?
      The one time use products are one used once.
   d) What could be better in order to increase the quality of care?
      -

8) Biggest issue, that reduces the care, regarding the care given?
There is a lack of oxygen tanks.

9) Waiting hours for the ER and to get help?
   -

10) How is the cleanliness of the hospital?
    It is good.

11) General thoughts about the hospital/does the hospital fit the need of the society?
    If the misuse would be less than it is, it would be better. I think the hospital fits the needs to a certain extent but there is always room for improvement.
Interview #20

When: 22/2
Who: - -, midwife.
Where: Garowe General Hospital, Garowe

Working Staff -

1) Name, age, profession.
   - -, -, midwife.

2) How long have you worked here?
   I have worked here 20 years.

3) Which department do you work in?
   I work in the maternity ward.

4) How do you work, working hours, change with other staff, breaks etc?
   We work eight hours a day, seven days a week.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      We use files, where there is information about the person and we store them.

7) Contact with medical devices?
   We do not have an ultrasound machine in the hospital, we use doppler.
   a) Who is responsible for the maintenance or do you also take part of that?
      There is a person responsible for the cleaning.

   b) Cleaning and reusing?
      -

   c) Re-usage of one-time-usage products?
      -

   d) What could be better in order to increase the quality of care?
      Control and contraction surveillance is needed. We do not have that.

8) Biggest issue, that reduces the care, regarding the care given?
The contraction device. It is important in order to see how the patients contractions are going and in order for us to determine when it is time for labor.

9) **Waiting hours for the ER and to get help?**
   Per day we have approximately 14 new patients, sometimes it depends.

10) **How is the cleanliness of the hospital?**
    It is cleaned on a regular basis.

11) **General thoughts about the hospital?**
    The staff needs more knowledge. We know how to use the most devices that we have but still there is a lot of knowledge missing.

**Additional question:**

12) **Does all the staff have the required education to do what they do? (Doctors, nurses, specialists, ER personnel etc)**
    The personnel always need training even though they have the formal education.
Interview #21

When : 22/2
Who : - , 20, Midwife
Where : Garowe General Hospital, Garowe

Working Staff -

1) Name, age, profession.
   Baja Abdullahi, 20, Midwife

2) How long have you worked here?
   Almost one year.

3) Which department do you work in?
   I work in the maternity ward.

4) How do you work, working hours, change with other staff, breaks etc?
   We work eight hours a day, six days a week.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      We have registrations and then the history of the patient taken as well.

7) Contact with medical devices?
   At our department we use doppler kits, the tools for delivery, monitoring and such.

   a) Who is responsible for the maintenance or do you also take part of that?
      -
   b) Cleaning and reusing?
      -
   c) Re-usage of one-time-usage products?
      One-time use products are only used once.
   d) What could be better in order to increase the quality of care?
      The contraction devices. Because we do not have it, we use doppler and other
devices to check the contractions of the patient. If we had that device instead,
we could check instantly.

8) Biggest issue, that reduces the care, regarding the care given?
9) Waiting hours for the ER and to get help?

10) How is the cleanliness of the hospital?
    It is ok. They clean three times a day.

11) General thoughts about the hospital?
    The training is important and that it is done continuously.

Additional question:

12) How do the staff learn how to use the devices?
    There are training sessions and we also have theory room, like a kind of school that
    we use to practice.

    a) Does the devices come with manuals? In what language
        They come with manuals but we rarely use them.

    b) Do they teach each other?
        They make discussions and teach each other.
Interview #22

When: 22/2
Who: -, 20, Nurse and midwife.
Where: Garowe General Hospital, Garowe

Working Staff -
1) Name, age, profession.
   - -, 20, nurse and midwife.

2) How long have you worked here?
   I have worked here for four years.

3) Which department do you work in?
   I have worked in this department for one year (Obs-gyn). Previously I worked in other imaging department, ER and other departments, in total of three years.

4) How do you work, working hours, change with other staff, breaks etc?
   My schedule is from 7 to 13, six days per week.

5) How long shifts do you usually work?
   Our shifts are usually six hours long.

6) What kind of report system do you use?
   a) Journals, communication.
      The same as the other interviewee before. Registrations and history.

7) Contact with medical devices?
   The ones specific to our department. Example, the X-rays and ultrasound.

   a) Who is responsible for the maintenance or do you also take part of that?
   -
   b) Cleaning and reusing?
   -
   c) Re-usage of one-time-usage products?
   -
   d) What could be better in order to increase the quality of care?
   -

8) Biggest issue, that reduces the care, regarding the care given?
   There is a lot that is missing from the hospital. For instance, training for the staff and devices.
9) **Waiting hours for the ER and to get help?**
   -

10) **How is cleanliness of the hospital?**
    The cleanliness is good.

11) **General thoughts about the hospital/Does the hospital fit the need of the people?**
    The devices are needed. Some devices that we need are Flour, Oxytocin and contraction devices. Right now we use a timer to check the time between the contractions.
    
    No, the hospital does not fit the need of the people. There is a lot of people and it sometimes happens that the rooms get full.
Interview #23

When: 22/2
Who: -, 25, Dr. Obs and gyn.
Where: Garowe General Hospital, Garowe

Working Staff -
1) Name, age, profession.
   - -, 25, Dr. Obs and gyn, post graduate diploma.

2) How long have you worked here?
   I have worked here for eight months. Started working here right after graduation.

3) Which department do you work in?
   I work in the Obs/gyn department.

4) How do you work, working hours, change with other staff, breaks etc?
   We work 8h-10 h per day, six days of the week.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      This part is admissions, there is outpatient files as well. We save the files about the patient.

7) Contact with medical devices?
   Obs and gyn instruments.
   a) Who is responsible for the maintenance or do you also take part of that?
      The head of the department and head of the midwifes.

   b) Cleaning and reusing?
      There is a department responsible for that.

   c) Re-usage of one-time-usage products?
      -

   d) What could be better in order to increase the quality of care?
      -

8) Biggest issue, that reduces the care, regarding the care given?
The lack of oxygen tanks, the rest is available.

9) Waiting hours for the ER and to get help?
   -

10) How is the cleanliness of the hospital?
    The level of cleanliness is good.

11) General thoughts about the hospital?
    Surgery instruments/devices and such are needed. The staff needs training, there are
    some seminars and training sessions but it needs to be more.

Additional question:

12) How are the devices maintained?
    a) Any daily/monthly routines?
       They check daily and weekly.
    b) Calibration? Who decides when and if its done?
       -

13) How do the staff learn how to use the devices?
    There is training done. Mostly the training is done by the ones bringing the devices or
    by the seniors in the hospital.

    a) Does the devices come with manuals? In what language
       Yes.

    b) Do they teach each other?
       Yes, we teach each other.
Interview #24

When : 22/2
Who : -, 26, Dr. gyn/obs
Where : Garowe General Hospital, Garowe

Working Staff -
1) Name, age, profession.
   - -, 26, dr. gyn/obs. Currently working on her post graduate.

2) How long have you worked here?
   I am currently under training and sent to different hospitals. I was previously in the hospital in Bosaso but now I have been here for 3 months.

3) Which department do you work in?
   I work in the gyn/obs department.

4) How do you work, working hours, change with other staff, breaks etc?
   I work 8-13 and sometimes I have to come back during the afternoon. We work all days of the week.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      The admissions, history of the patient, examinations.

7) Contact with medical devices?
   Gyn/obs devices, delivery kits, forceps, MVA abortion tools, c-section tools, all tools needed for the proper care is here.

   a) Who is responsible for the maintenance or do you also take part of that?
      The cleaners are responsible for this.

   b) Cleaning and reusing?

   c) Re-usage of one-time-usage products?

   d) What could be better in order to increase the quality of care?
8) **Biggest issue, that reduces the care, regarding the care given?**

Most of the people that come need oxygen, we only have one tank. If there is a surgery and it comes a emergency patient, it becomes a difficult situation. We also have a hard time monitoring vital parameters as the devices are lacking or not there.

9) **Waiting hours for the ER and to get help?**

-  

10) **How is the cleanliness of the hospital?**

I think that it is clean, and we use antiseptics. They clean as soon as the patient leaves.

11) **General thoughts about the hospital?**

The staff needs continuous training to grow and to become more qualified. They need constant update.

**Additional question:**

12) **How do the staff learn how to use the devices?**

The people fit for the training are chosen and they can then teach each other afterwards.

a) **Does the devices come with manuals? In what language**

They are not many new devices but the ones that know use them. There are some that are put up for the nurses and staff to use.

b) **Do they teach each other?**

Yes.
Interview #25

When: 22/2
Who: -, 26, Anesthesia nurse.
Where: Garowe General Hospital, Garowe

Working Staff -
1) Name, age, profession.
   - -, 26, cardiology, Anesthesia nurse.

2) How long have you worked here?
   6 years in all of the departments.

3) Which department do you work in?
   I am currently working in the X-ray department now for 3 years.

4) How do you work, working hours, change with other staff, breaks etc?
   I work 7-13:30. There are 3 shifts and we work 7 days a week.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      The patient has a paper which there is a remittance from another department.
      The person can come from outside, then we send him/her to OPD, or he/she
      can be sent from another department with the remittance.

7) Contact with medical devices?
   We have two different X-ray machines and one filmmaker. Our X-rays do not
   produce digital X-rays. The water in the filmmaker has caused it to disfunction
   and it has formed stones in the sour water.

   How many films do you make?
   Depends on the people. In the ER it is more films produced.

   a) Who is responsible for the maintenance or do you also take part of that?
      We are responsible ourselves. For repair, there is one engineer who can fix it.
   b) Cleaning and reusing?
      -
   c) Re-usage of one-time-usage products?
      -
d) What could be better in order to increase the quality of care?

8) Biggest issue, that reduces the care, regarding the care given?
The biggest issue is the cleaning machine, it is malfunctioning so we have to dry it with the fan.

9) Waiting hours for the ER and to get help?

10) How is the cleanliness of the hospital?
Now it is very good.

11) General thoughts about the hospital?
Everything needs improvement. When all the doctors are here you see there is a lot that needs improvement like the devices, and the staff needs more knowledge. They need better devices.

Additional question:

12) What kinds of devices do you have?
There is training, or we use the manuals, they teach each other, the students who come as interns, we teach them and they use it outside
Interview #26

When: 22/2
Who: - , Deputy Hospital Director.
Where: Garowe General Hospital, Garowe

Responsible at hospital -

1) Name, age, profession.
   - , Deputy director.

2) How long have you worked here?
   Since the beginning, the opening of the , 26 years.

3) How many people are working here?
   There are in total 107 staff working in this hospital.
   
   a) Different kinds of professions?
      Doctors, nurses, midwives, X-ray staff, auxiliary nurses, laboratory staff, administrators, cleaners, sleepers security, nutritionists, pharmacists, surgeons, pediatrics, gynecologists.
   
   b) Regulations about shifts, working hours?
      We have a set 8 h per worker a day. They work in shifts so there are three shifts and they change staff every 8 hours. They work 6 days a week.

4) Does all the staff have the required education to do what they do? (Doctors, nurses, specialists, ER personnel etc)
   Yes, they have the education that is needed for their profession. They all graduated from school/university. There are a few that just have had training and no education.

5) What kind of departments do you have?
   Administration, pharmacy, X-ray department, lab, nutrition department, HR, cleaning dep, surgical ward, op theater, pediatric ward, medical ward, gyn/obs, child nutrition ward, neonatal ward.
   
   a) ICU - Capabilities, resources (devices, #beds, staff per shift)
      There is no ICU, but there we have ER and OPD.
   
   b) Operation facilities?
      It's divided. They do 2 kinds of procedures, c-section and general surgery.
6) What kinds of devices do you have?
For instance, we have ultrasound machine, X-ray, ECG but not CT-scan or MRI-scan.

   a) What brands do you choose and is there any choice?
      They are given as gifts, we do not buy them ourselves. There are not many people giving things. We use what we get.

   b) Are these machines bought or gotten from other hospitals? (Worldwide)
      -

   c) Are there any devices you are missing?
      We are missing half of the devices we need. We need an ICU and a place for it as well. We would start if we had the devices. Here are many accidents, traumas, gunshots and such cases. We also need drugs, different kinds so that we could treat the patients better. There is a lot of malnutrition which contributes to a lot of diseases which there are no drugs for here.

7) How are the devices maintained?
There is a logistic department that is responsible for it.

   a) Any daily/monthly routines?
      They use them monthly, they can see the issues.

   b) Calibration? Who decides when and if its done?
      -

8) How do the staff learn how to use the devices?
The help organizations has their team, they train the staff and then the staff train each other. They usually come from different countries.

   a) Does the devices come with manuals? In what language
      -

   b) Do they teach each other?
      -

9) Repair and spare parts?
There is someone trained for this, although he does not know everything, he can fix the most devices. Most of the devices are old.

10) Power supply? Backup?
Used to use the same electric grid as in the city. Now we use solar now but have a spare generator.

11) General thoughts about the hospital?
The hospital is in a difficult place, and the country is as it is. We handle people from all over the vicinity. The region is 600 km2, when there is difficulty in Galkacyo, we are a referral hospital and there is a burden to it. The beds are too little, the drugs, the help and the resources. The hospital is on its own feet, the director makes 300 dollars a month. No governmental fundings. We are a part of the Ministry of Health but we stand alone. We need people that help, NGO, companies, we are ready for the help for the medication. There is a transparency in the hospital and its economy and we discuss with each other. The hospital needs a push. We have same diseases as the rest of the world, the children diseases are the most.

12) Biggest issue/Does the hospital fit the needs?
No, the people do not even have money, they do not charge the people, just for the drugs and help them as much as they can.

Help organisations had promised to donate oxygen, they said they gave but no one has seen it.

Note:
During the interview a camera man that is in the country to film something comes in and gets prescription for drugs because he is not feeling well.
Interview #27

When: 27/2
Who: -, 33, Obstetric gynecologist.
Where: Galkacyo General Hospital, Galkacyo.

Working Staff -
1) Name, age, profession.
   -, 33, Obstetric gynecologist.

2) How long have you worked here?
   I have worked 5 month in this hospital. I have also worked in Bosaso and Garowe for 3 years and I am planning on going back to Garowe.

3) Which department do you work in?
   I work in the obs/gyn department but also in the emergency department.

4) How do you work, working hours, change with other staff, breaks etc?
   It depends. When we work on-call we wake up whenever it is needed, so it is according to the need. We have shifts but sometimes we do not. It also depends on how far we live from the hospitals and such as well.

5) How long shifts do you usually work?
   -

6) What kind of report system do you use?
   a) Journals, communication.
      We have a certain documentation but it also depends on the case. We do not use computers, we have everything in paper files.

7) Contact with medical devices?
   In our department we use delivery kits, appropriate drugs, ER management, D&C kits, C-section, Ultrasound, X-ray.
   a) Who is responsible for the maintenance or do you also take part of that?
      There is a whole team dedicated for this task.

   b) Cleaning and reusing?
      There is also a team for this. They use sterilization, hot oven, chlorine, clean water bath, washing, autoclave and they follow steps.

   c) Re-usage of one-time-usage products?
      No.
d) What could be better in order to increase the quality of care?

8) Biggest issue, that reduces the care, regarding the care given?
   Our department. There is a lack of funding and support and we do not get much money as staff here. Sometimes we have to work voluntarily and receive no pay. There is also a deficiency in the devices and the drugs. We also have some cultural issues, the somali ways of talking makes some cultural barriers and some patient want the same help as their friends even though their problems might be different and require different care, some of the issues involve live transportation, sending ambulances and such.

9) Waiting hours for the ER and to get help?

10) Is there anything you feel is missing from this hospital?
    There are some devices that we need that are missing. We have the staff, the people and the space for the hospital. There is a part of the hospital which is destroyed because of bombings.
    We need fundraising and training for the staff.

11) How is the cleanliness of the hospital?
    It is good, from what I have seen.

12) General thoughts about the hospital/Does the hospital fit the need?
    We need qualified staff, need specialists (there are none). There are some departments that do not have specialists, and also good materials it would increase the quality.

    No, there are so many people. This hospital is in the center of Somalia, all the people get transported here and it's difficult with what we have now.

Additional question:

13) How do the staff learn how to use the devices?
    We get the devices we need. Sometimes there are devices that are expensive and they do not use them.
Interview #28

When : 27/2
Who : - , 22, GP ortopedian assistant.
Where : Galkacyo General Hospital, Galkacyo.

Working Staff -

1) Name, age, profession.
   - - , 22, GP ortopedian assistant.

2) How long have you worked here?
   One year.

3) Which department do you work in?

4) How do you work, working hours, change with other staff, breaks etc?
   We work 6 hours a day and 6 days per week, but we also have on-call and emergency dispatches.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      We note the name of the patient and gather information. They use phones.

7) Contact with medical devices?
   The two departments have different tools. For the OPD: the patients who come in, we check if they have broken bones or not, for this we use the X-ray, what kind we use depends on the injury. We also use casts but we do not have traction. To measure the traction we use ropes and weigh. We also have surgery tools.

   a) Who is responsible for the maintenance or do you also take part of that?
      We have no responsible, but the OTP department looks at the tools.

   b) Cleaning and reusing?
      There is a department for that.

   c) Re-usage of one-time-usage products?
      -

   d) What could be better in order to increase the quality of care?
8) **Biggest issue, that reduces the care, regarding the care given?**
   The devices that are missing, for instance traction table, cast knives, currently it takes a long time to cut as we do not have the right tools. We also need a C-arm, now we send an X-ray and get it back and iterate until we get the desired position and scan field.

9) **Waiting hours for the ER and to get help?**

10) **How is the cleanliness of the hospital?**
    It is ok, it used to be worse, there are staff cleaning and an external garbage.

11) **General thoughts about the hospital/Does the hospital fit the need?**
    I would like a hospital that is a referral, that could cover the needs and have all the missing specialists and strengthen the ones that are missing.

    We have the beds and that, we could cover it but when there is a bigger trauma or war, we can not handle it.

**Additional question:**

12) **How do the staff learn how to use the devices?**
    The ones who gives us the devices give us the training.

    a) **Does the devices come with manuals? In what language**
       If they do not give us training, we try to use the manuals.
Interview #29

When : 27/2
Who : -, 19, Assistance of internal medicine
Where : Galkacyo General Hospital, Galkacyo.

Working Staff -
1) Name, age, profession.
   - -, 19, Assistance of internal medicine

2) How long have you worked here?
   I have worked in this hospital for 6 months.

3) Which department do you work in?
   In the department of Internal medicine.

4) How do you work, working hours, change with other staff, breaks etc?
   I work seven hours a day and we have one day free during the week.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      Yes, we write how the person is, which date it is, how they left last time they visited. It is all written in a book.

7) Contact with medical devices?
   We look for fetal signs, catheters, NGT.
   a) Who is responsible for the maintenance or do you also take part of that?
      Yes, there are people responsible for that.
   b) Cleaning and reusing?
   c) Re-usage of one-time-usage products?
   d) What could be better in order to increase the quality of care?

9) Biggest issue, that reduces the care, regarding the care given?
   We do not have the drugs for allergies.
10) Waiting hours for the ER and to get help?
   -

11) Nadaafada isbitaalka sidu yahay?
   It is very good.

12) General thoughts about the hospital?
   That the hospital should become more bigger and better to give better care.

Additional questions:

13) How do the staff learn how to use the devices?
   They learn by external supervision.
      a) Does the devices come with manuals? In what language
         Yes.
      b) Do they teach each other?
         Yes.
Interview #30

When: 27/2
Who: - , specialist neurologist, Hospital Director
Where: Galkacyo General Hospital, Galkacyo.

Responsible at hospital -

1) How many people are working here?
   175, but we would need approximately 300 people.
   a) Different kinds of professions
      Doctors (consultants, SHO clinic house officers) nurses, auxiliary nurses,
      midwives, lab technicians, logistics section, ambulance receivers, cleaners,
      administration's office, x-ray technicians, dental technicians, admission
      personnel, dermatologists, psychiatry, EMT, dentists.
   b) Regulations about shifts, working hours?
      We have set up shifts which corresponds to 8 h for each shift worker and they
      work 7 days a week.

2) How many patients a day (average)?
   It is a big hospital, we have approximately 500 beds. Our patients which are children
   could be up to 100 patients/day, average could be 150 - 200 people, sometimes it
   could be up to 600, it depends on the season.

3) Does all the staff have the required education to do what they do? (Doctors,
    nurses, specialists, ER personnel etc)
   There are different types of doctors, house officers (depending on year/experience
   they have a different title). We do not have knowledge sentence, no seminars or
   activities, no library, no update for the doctors. We hold seminars, case presentations
   and workshops within the hospital staff but do not invite people from outside.
   They have the degree, clinical officers /physician assistant, they all have a degree.

4) What kind of departments do you have?
   ER/OPD, adult OPD, pediatric ward, TFC(feeding center), Obs/gyn, General
   Surgery, Ortho Surgery, general medicine, TB centre.
   a) ICU - Capabilities, resources (devices, #beds, staff per shift)
      No, we do not have a ICU.
   b) Operation facilities?
The hospital was under bombing, the surgery area was bombed and the capacity was destroyed. They plan to build a new modern hospital, it would be better. From here we have 7 miles to all the biggest cities, many people come here, it's an international hospital. We have workers from all of Somalia - needs special input. There is fundraising right now to support the hospital.

5) **What kinds of devices do you have?**
Most of them were destroyed. We have one conventional X-ray unit, one mobile (for the rural areas where nomads live), two ultrasound machines (one mobile, one stationnaire), two oxygen concentrators and blood monitoring devices.

   a) **What brands do you choose and is there any choice?**
   We take what we get. We need it.

   b) **Are these machines bought or gotten from other hospitals? (Worldwide)**
   Some we were donated, some we bought. The ones that we bought we pay in installments.

   c) **Are there any devices you are missing?**
   There is nothing here worth mentioning. For instance, we need CT, MRI and anaesthesia machines. As it is now we can not do general anaesthesia. We use local anaesthesia so the patient is not relaxed during surgery and the organs are moving under tension.

   d) **What are not functioning?**
   For instance we have two dialysis devices that are not functioning.

6) **How are the devices maintained?**
No one is assigned to maintain them. Local practitioners with no knowledge try to fix them, usually they can not fix it.

   a) **Any daily/monthly routines?**
   -

   b) **Calibration? Who decides when and if its done?**
   -

7) **How do the staff learn how to use the devices?**
No one teaches them. They must send someone with the devices to teach the recipient. There are a lot of devices they don't know how to use, ex. dialysis machines from Australia (Gambro from 2004).

   a) **Does the devices come with manuals? In what language**
The manual can not replace the practical knowledge.

b) Do they teach each other?

- 

8) Repair and spare parts?
No, we have none. We could not even find the manual online for the dialysis machine.

9) Power supply? Backup?
We have the national grid which we use but also a solar panel system that is huge and we use it as a backup. It has 104 panels and nearly 40 kW. We combine it with the general grid because it is free.

10) How is the cleanliness of the hospital?

11) General thoughts about the hospital?
We are in the works in building a state of the art hospital. We started with the fundraising but it got disturbed by the troubles. Mainly we would like that our staff gets more knowledge and that we have the appropriate and desired devices. We also need a medical engineer as a specialist to fix the tools. We have already done a temporary rehabilitation of the hospital. We welcome any type of help, whether it is through devices or funding.

There is no funding for the hospital right now and no one donates devices or anything. We started to charge a small fee (cost sharing). We figured if private hospitals charge 20 dollars, we would instead charge 3 dollars. There are a lot of private hospitals which use the name of a public hospital to get fundings and devices. We are a non profit making institution, the cost sharing is designed to make profit go into the hospital. It is transparent.
Interview #31

When: 27/2
Who: -, 40, Midwife, Supervisor
Where: Galkacyo General Hospital, Galkacyo.

Working Staff -
1) Name, age, profession.
   -, 40, Midwife, Supervisor

2) How long have you worked here?
   I have worked here for over 20 years, since 1994.

3) Which department do you work in?
   I work at the Maternity ward.

4) How do you work, working hours, change with other staff, breaks etc?
   We work 3 shifts. I work between 7-13 8h. We work 6 days and have one day off.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      We use different cards, register, admission files, different sheets and reports.
      We use files, once a month we put it in the system. We also mark the beds with numbers, there are different kinds of methods.

7) Contact with medical devices?
   We use delivery kits, complication assistance tools, delivery suction machines, ultrasound (but not in use because it is broken).
   a) Who is responsible for the maintenance or do you also take part of that?
      Yes, there is one person. They collect and change them.
   b) Cleaning and reusing?
      There are 2 staff in the sterilizing area
   c) Re-usage of one-time-usage products?
      No, they are disposed.
d) What could be better in order to increase the quality of care?

8) Biggest issue, that reduces the care, regarding the care given?
   Device wise, we need improvement. The vacuum has gone bad, one sterilization
   machine has gone bad, drugs are also poor, beds sheets.

9) Waiting hours for the ER and to get help?

10) How is the cleanliness of the hospital?
    It is good, there are people coming here 3 shifts and clean.

11) General thoughts about the hospital/Does it fit the need?
    That it becomes one of the biggest hospitals in the world, that we would have the
    capacity that the city needs.

    Its not bad, it could do it.

Additional question:

12) How are the devices maintained?
    Old stuff we know how to use, but if there is a new machine, we have to call in
    someone who can use it and teach the rest of the staff. Bigger devices need training.
    There is a autoclave that we used that is not functioning
    a. Any daily/monthly routines?
       -
    b. Calibration? Who decides when and if its done?
       -
Interview #32

When : 27/2
Who : - , around 40 years old , Doctor.
Where : Galkacyo General Hospital, Galkacyo.

Working Staff -
1) Name, age, profession.
   - , around 40 years old, Doctor.

2) How long have you worked here?
   Altogether 4 years in the hospital.

3) Which department do you work in?
   In the obs/gyn department.

4) How do you work, working hours, change with other staff, breaks etc?
   Usually 7:30-13:30 then 15-9, 6 days a week, sometimes on the seventh day we are on-call, during our free time and the night.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      The same admission system.

7) Contact with medical devices?
   There are 2 types, operation kit or delivery/c-section kit that we use.
   a) Who is responsible for the maintenance or do you also take part of that?
      There are people trained for it.
   b) Cleaning and reusing?
      -
   c) Re-usage of one-time-usage products?
      -
   d) What could be better in order to increase the quality of care?
      -

8) Biggest issue, that reduces the care, regarding the care given?
   There are many people who come, too many patients.

9) Waiting hours for the ER and to get help?
10) How is the cleanliness of the hospital?
   It is good, if there is a new equipment we need to adjust.

11) General thoughts about the hospital?
   The staff are good and devices too. We could fit the capacity but the need and the
   hunger of the people and the society is greater.

Additional questions:

12) How do the staff learn how to use the devices?
   If there is something new, we will need training for it. The most important aspect is
   that you get the training to use it properly or else you will just practice on it.
Interview #33

When : 27/2
Who : -, 26, GP, general pediatric
Where : Galkacyo General Hospital, Galkacyo.

Working Staff -

1) Name, age, profession.
   - -, 26, GP, general pediatric

2) How long have you worked here?
   In the hospital for about a year and a half. Have not worked in another hospital before.

3) Which department do you work in?
   In the pediatric ward.

4) How do you work, working hours, change with other staff, breaks etc?
   7 h per day, 6 days a week.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      Their name, age, where they are from, what their problem is, we have history taken.

7) Contact with medical devices?
   We use stethoscope, oxygen, pulse oximeter.
   a) Who is responsible for the maintenance or do you also take part of that?
      Yes, there is someone responsible for the devices. We call him when they are broken.
   b) Cleaning and reusing?
      The nurses are responsible, there is also an inpatient department.
   c) Re-usage of one-time-usage products?
      No, they are disposed.
   d) What could be better in order to increase the quality of care?
8) **Biggest issue, that reduces the care, regarding the care given?**
   There is no big problem, sometimes the drugs might not be enough.

9) **Waiting hours for the ER and to get help?**
   -

10) **How is the cleanliness of the hospital?**
    In general the hospital is good. In our department we have two cleaners.

11) **General thoughts about the hospital/Fit the need?**
    That the hospital should have same kind of service as the others. The ER has no ICU and the whole department is small because of the bombings. We need a lot of devices that are missing. Sometimes the drugs are not sufficient but mostly it is ok.

Additional question:

12) **How are the devices maintained?**
    No one, they use it if they know how to.
Interview #34

When : 27/2
Who : -, 26, Nurse
Where : Galkacyo General Hospital, Galkacyo.

Working Staff -

1) Name, age, profession.
   - , 26, Nurse

2) How long have you worked here?
   3 years in this department.

3) Which department do you work in?
   Now I work in the pediatric ward, I used to work in the pharmacy.

4) How do you work, working hours, change with other staff, breaks etc?
   Everyday we work between 8-12 h, 6 days per week.

5) How long shifts do you usually work?
   See question above (#4).

6) What kind of report system do you use?
   a) Journals, communication.
      We take information, the regular procedure.

7) Contact with medical devices?
   They use gloves, regular tools, medication.
      a) Who is responsible for the maintenance or do you also take part of that?
      -
      b) Cleaning and reusing?
      -
      c) Re-usage of one-time-usage products?
      -
      d) What could be better in order to increase the quality of care?
      -

8) Biggest issue, that reduces the care, regarding the care given?
   There are a lot of missing tools for example oxygen therapy and they need more knowledge.
9) Waiting hours for the ER and to get help?
   
10) How is the cleanliness of the hospital?
   Its good.

11) General thoughts about the hospital?
   The hospital needs uplifting, so that we have the facilities to treat the people.
   No, it does not. We need tools for the children's department, we need oxygen tanks.
   We also need offices with required equipment and the staff needs training as well.

Additional question:

12) How do the staff learn how to use the devices?
   There is a supervisor but we also teach each other and use the manual that come along with the devices.
When : 27/2  
Who : - , -, Supervisor pediatric nurse  
Where : Galkacyo General Hospital, Galkacyo.  

Working Staff  -  
1) Name, age, profession.  
- , -, Supervisor pediatric nurse  

2) How long have you worked here?  
6 years in this department. 4 years prior to this, I worked in the nutrition department.  

3) Which department do you work in?  
The pediatric ward.  

4) How do you work, working hours, change with other staff, breaks etc?  
We are here all the time and can come at all times.  

5) How long shifts do you usually work?  
See question above (#4).  

6) What kind of report system do you use?  
 a) Journals, communication.  
   We have meetings, talk about if the staff do what they are supposed to do, that it is done, materials check and see that everything is ok.  

7) Contact with medical devices?  
A part of it, everyone is responsible.  
 a) Who is responsible for the maintenance or do you also take part of that?  
-  
 b) Cleaning and reusing?  
-  
 c) Re-usage of one-time-usage products?  
-  
 d) What could be better in order to increase the quality of care?  
-  

8) Biggest issue, that reduces the care, regarding the care given?  
That the staff does not get payed, it is a big issue. The material that is here, the safety is pretty bad.  

9) Waiting hours for the ER and to get help?
10) **How is the cleanliness of the hospital?**
   Its ok, there are days with issues, but generally it is good.

11) **General thoughts about the hospital?**
   That the hospitals has all its needs so that it can become competitive. Right now it does not even fit 10 % of the need of the society.

**Additional question:**

12) **How do the staff learn how to use the devices?**
   By training. We learn from the books . If we are lucky we get help from abroad. If there is any issues with the device, we do not use it.