

Situational Analysis of Emergency and Essential Surgical Care in public Hospitals in Ethiopia

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1. Introduction

According to Debas [1] 11% of the Global burden of diseases can be treated surgically. Out of these, 38% consists of injuries, 19% malignancies, 9% congenital anomalies and 6% complications of pregnancies. These estimates do not include surgical infections and acute abdominal emergencies. Surgical care is remarkably cost-effective when compared with non-surgical interventions in prevention program for instance the extent that non-surgical interventions such as prevention of road traffic injuries can reduce the surgical burden is also documented Furthermore, the existence of “vertical” programmes in public health that is child health, maternal health, cancer, and trauma has also made it difficult to approach the problem in a coordinated fashion. Assimilating of all these programmes have a surgical component, integrating surgical services in to the existing health system and this suggests that effective surgical services may improve overall health systems [2].

However, there is a common misconception that it is too expensive to implement it as a public health intervention.

Although there is increasing awareness of the importance of unmet needs for surgical care worldwide, data for resource-poor environments remain woefully scarce [3]. It is estimated that up to half the world’s population lacks access to basic surgical care [4]. The unmet need for surgical care in Sub-Saharan Africa is a well documented fact. The overall disease burden associated with surgical conditions in sub-Saharan Africa is estimated at 38 DALYS (disability adjusted life years) lost per 1,000 population [5]. Out of these (15/1,000) are due to injuries, 6/1,000 to obstetric complications, (3/1,000) to malignancies, (3/1,000) to prenatal conditions (3/1,000) to congenital anomalies and (2/1,000) to cataracts and glaucoma.

The reasons for this include inaccessibility of the surgical services to the poor, lack of adequate Human resource, inadequate infrastructure and un-sustained finance support [6]

The cost per DALY averted is much higher for surgical interventions (32.8USD, 30USD, 20USD and 10.USD for surgical care, measles vaccination, acute lower respiratory tract infection and emergency obstetrics care respectively) than non-surgical interventions [7].

Inadequate access to basic surgical care remains a major concern in low-income settings. The current drive towards a health systems approach for delivering health care interventions in Africa opens an opportunity to redress long-standing neglect in the provision of surgical services

In 2005, the World Health Organization (WHO) Global Initiative for Emergency and Essential Surgical Care (GIEESC) was established, encouraging collaborations aimed at reducing mortality and morbidity from surgically treatable conditions [8]. The GIEESC has published a situational analysis tool to characterize surgical capacity in low- and middle-income countries.

The purpose of this study is to evaluate facility, materials and personnel capacity at 32 public hospitals in Ethiopia and to compare the results with similar studies from other low income countries

In Ethiopia over the past 20 years remarkable health service delivery expansion was exhibited across the country. The health sector has introduced a three tier system that involves a primary Health Care Unit (PHCU), General hospitals and specialized hospitals. PHCU consists of five satellite health posts, one health center and primary hospital to serve 5,000; 25,000 and 100,000 people respectively [9]. The secondary level, General hospital, serves a population of one million Tertiary levels; specialized hospital serves 5 million people. Access to hospitals has increased whereas number of hospitals grew from 88 to 122. In the same period in terms of health service delivery the General Practitioners and specialist to population ratio has increased from 1:41,000 to 1:54,000 in the same period. Information from Federal Ministry of Health (FMOH) for 2010 indicated that among 1421 clinicians 106 (8%) were surgeons, 77 (13 %) were Gynecologists, 20 (3%) were orthopedic surgeons and 26 (4%) were ophthalmologists. Moreover, the specialists were concentrated in Addis Ababa, where the majority of private hospitals are found.

Despite this entire endeavor, the health system is still poor due to lack of sufficient human resources, budget, well established regional linkage and poor facilities, communication and road transport.

2. Problem statement

According to WHO, properly equipped district hospital in a low-income country like Ethiopia can perform emergency surgery for obstetric complications, abdominal emergencies and basic surgeries and injuries; simple orthopedic care for extremity fractures, dislocations, and amputations; burn care and uncomplicated general surgery for hernias and treatment and control of surgical infections.

However, many District and General Hospitals in rural Ethiopia are not in a position to provide the mentioned services due to lack of skilled human resources, equipment and supplies [10].

Likewise similar low income countries, surgical care interventions are poor in Ethiopia. There are only 122 hospitals serving over 80 million populations. The capacity of these facilities is weak and sometimes disproportionately distributed. This makes access to surgical care meager.

It is assumed that a huge shortage of human resource for health in general and for surgical interventions in particular (surgeons, anesthetists, scrub nurses ...). In addition, there is inadequate infrastructure like electricity, running water, roads, functional surgical service facilities (Operation theatre, pre and post operative care rooms, blood bank, and so forth) and ambulance service. In many hospitals, some basic surgical services are not rendered because of shortage or absence in medical equipment and supplies. In areas/ facilities where surgical services are available, the quality is severely compromised as measured by staffing pattern and availability of standard operational guidelines [11].

However, In Ethiopia surgical service assessment using WHO toolkit was not conducted and there is scanty information regarding the extent and quality of surgical services in Ethiopia. The magnitude of the problem and its underlining factors were not well explored and documented. New knowledge and information on this will facilitate informed-decision making.

This study tries to assess the situation of essential surgical services in Ethiopia in respect to the WHO toolkit and to come up with possible recommendations for policy makers, health facilities, surgical training institutions and other stakeholders.

3. Objective

3.1 General Objective

The general objective of this study is to assess the situation of emergency and essential surgical care in 31 public hospitals in Ethiopia

3.2 Specific objectives

- ❖ To identify the capacity of existing hospitals in relation to human resources, , equipment and supply and infrastructure in the delivery of essential surgical services
- ❖ To identify gaps in hospital management pertaining to emergency and essential surgical care delivery
- ❖ To identify gaps in surgical service delivery.

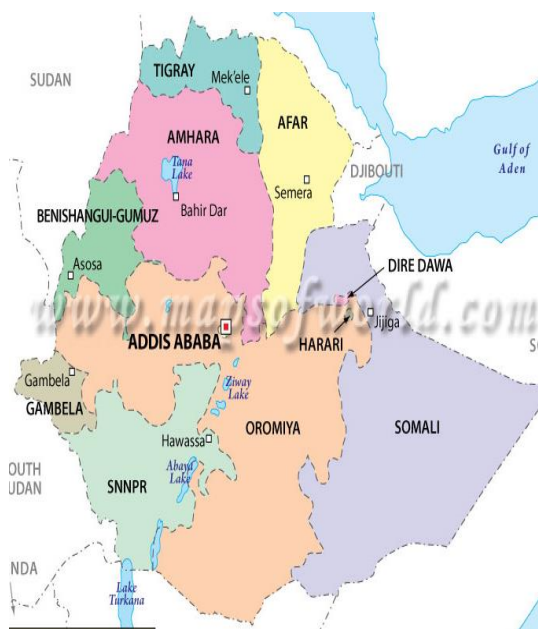
4. Methodology

4.1 Study area and population

The study was conducted in 31 hospitals located in 9 regional administrations and Addis Ababa sub city administration of Ethiopia. Different tiers of health service were included.

4.2 Study design

Cross sectional Quantitative study conducted from November, 2011 to December, 2011 using interviewer administered standard WHO tools with minor modifications to fit the context of Ethiopia



4.3 Qualitative method

Region	Type of hospital			Total
	District	Zonal	Regional	
ADDIS ABABA	-		1	1
AFAR	-	1	-	1
AMHARA	4	3	1	8
BENSHANGUL	-	1	-	1
GAMBELLA	-		1	1
HARARI	-		1	1
OROMIA	2	3	2	7
SNNPR	2	6	-	8
SOMALI	-	1		1
TIGRAY		1	1	2
Total	8	16	8	31

The qualitative data was collected by resident surgeons following two days training on the methodology of qualitative data collection. This data was collected simultaneously with quantitative data by five data collectors. The qualitative data was undertaken in every other hospital and a total of 15 hospitals were involved. The qualitative data includes Focus Group Discussion with surgical staff in the selected hospitals and In-depth interview with the CEO or medical director. A total of 32 data was collected by taking notes and the conversation was also recorded by battery power tape recorder. The collected data was then transcribed for further analysis.

4.4 Sampling method

From the total of 108 hospitals in the whole country, 30% were included for the survey using regional clustered random sampling approach. Accordingly 31 hospitals comprising 8 districts, 8 regional and 16 zonal hospitals from different categories were selected based on proportionate to type/category sampling approach.

4.5 Data collection

Both qualitative and quantitative data were collected using five data collectors who were recruited from FMOH, Addis Ababa University School of Medicine and Health Sciences (AAU), Surgical Society of Ethiopia (SSE), and Hawassa University. The data collectors were trained for two days on the relevance of the study and skills on administration of the questionnaires. The questionnaire was pre - tested in Ayder Specialized hospital in Mekelle (two month before the study) and the tools were revised accordingly.

4.6 Data analysis

The quantitative data was entered to SPSS version 19.0 cleaned and double checked. Proportions and means were used to describe the parameters investigated.

Qualitative data was transcribed, manually and thematically analyzed using predefined themes and post script thematic categories based on responses.

4.7 Ethical Considerations

Authorizations: The study will received ethical clearance from the Institutional Review Board of Federal Ministry of Health with a protocol number of XXXXXXXX, Meeting No XXXXXXXX

4.8 Operational definition

- District /first level regional Hospital: serves for 250,000
- Zonal I Hospital: serves for 1 million people
- Regional Hospital: serves for 5 million people
- Major surgery - any surgical procedure that involves general/regional anesthesia
Minor surgery - any surgical procedure that involve local, anesthesia

5. Results and Findings

Table 1: Number of surgical beds by type of hospitals

Total Beds (Surgical/Gyne-Obs.)	Type of hospital			Total (%)
	District	Zonal	Regional	
0	2	1	0	3(9)
1-10	2	0	0	2(6)
11-20	2	0	0	2(6)
21-50	1	7	1	9(28)
51-80	1	6	2	9(28)
81-100	0	1	4	5(15)
101-200	0	1	1	2(6)
Total	8	16	8	32

The study showed that 30 (98%) hospitals have less than 100 beds whereas three hospitals have no beds. Surprisingly one of these hospitals is Mezan Teferi zonal hospital.

Table 2: Number of patients admitted by type of hospitals in one year (2010/11)

Number of admissions	Type of the hospital			Total
	District	Zonal	Regional	
<1000	4	0	1	5
1001-5000	4	9	1	14
5001-10000	0	6	3	9
10001-15000	0	1	2	3
Total	8	16	7	31

During the survey we found that 26 (81%) of hospitals admitted more than 1,000 patients in a year while 12 (37%) of hospitals admitted more than 5,000 patients. The remaining 3 (9.4%) admitted more than 10,000 patients in a year and these were categorized as either Zonal or regional hospitals.

Table 3 : Number of functioning major and minor operating rooms by type of hospital ().

Functioning operating rooms(major and minor)	Type of the hospital			Total
	District	Zonal	Regional	
1	2	1	1	4
2	3	10	2	15
3-4	3	5	4	12
5-10	0	0	1	1
Total	8	16	8	32

The total number of functioning operating room for both major and minor surgeries on the average was 2. One zonal and one regional hospital have only one operating room for both major and minor surgeries. Two districts, one zonal and one regional hospital have/had only one functioning operating room.

Table 4: Number of minor procedure (Surgery and Gyne-Obs.) by type of hospitals in the year xxxx

Number of minor procedures	Type of hospital			Total
	District	Zonal	Regional	
0	1	1	0	2
20-100	0	1	2	3
101-200	3	1	0	4
201-300	2	1	0	3
301-500	1	2	0	3
501-1000	1	5	2	8
1001-2000	0	4	0	4
>2000	0	1	3	4
	8	16	7	31

As the hospital tier increases from district to regional the number of minor surgical procedures increases. The number of patients who underwent minor procedures ranges from less than 20 to more than 2,000. Most (6) district hospitals perform less than 300 minor procedures per year. Generally 9 zonal and 5 regional hospitals performed over 500 minor procedures. One district and one zonal hospital didn't perform any surgical procedures at all.

Table 5: Number of patients who had major surgery (including Gyne-Obs.)

Number of patients who had major surgery	Type of hospital			Total
	District	Zonal	Regional	
0	3	1	0	4
20-100	2	1	1	4
101-200	2	1	0	3
201-300	1	2	1	4
301-500	0	2	1	3
501-1000	0	4	1	5
1001-2000	0	5	0	5
>2000	0	0	3	3
Total	8	16	7	31

The number of patients who had major surgeries ranged from 0 to more than 2,000. Three districts and one zonal hospital performed no surgical procedure of any type. Many regional hospitals and some zonal hospitals performed more than 500 and 2000 surgeries respectively which are consistent to conventional expectations. It is found that the average number of major surgical surgeries performed in the hospitals was 692.

Table 6 : Number of children (aged less than 15 years) benefitted from surgical procedure

Number of children	Type of hospital			Total
	District	Zonal	Regional	
0	2	2	1	5
1-100	6	9	3	18
101-200	0	1	0	1
201-500	0	3	1	4
501-1000	0	0	1	1
1001-5000	0	1	1	2
Total	8	16	7	31

The average number of children (aged less than 15) who had surgical procedures during the year was 243. Five hospitals (16.1%) didn't perform any kind of pediatric (children aged less than 15 years) surgery. Eighteen (58%) hospitals have done less than 100 pediatric surgeries per year.

Table 7: Availability of important service, supply and equipments in the district hospitals

No	Type of service, equipment or supply in distinct hospital	All the times	Not all the time	Total
1	Oxygen supply	7	1	8
2	Oxygen concentrator	2	6	8
3	Functional anesthesia machine	7	1	8
4	Designated emergency care	5	3	8
5	Designated postoperative care	3	5	8
6	Management guideline for emergency care	-	8	8
7	Blood transfusion in the facility	-	8	8
8	Functioning pulse ox meter	1	7	8
9	Functioning x-ray machine	6	2	8
10	Hemoglobin and urine test in the facility	7	1	8

The type of service, equipment or supply in distinct hospitals showed that all the time the availability of Oxygen supply (87%), functional anesthesia machine (87%), functioning x-ray machine (85%) and hemoglobin and urine test in the facility (87.5%) however there is not all the time available functioning pulse oximeter(12.5%) and blood transfusion in the facility and management guideline for emergency care were not available in the distinct hospitals.

Table 8: Availability of important service, supply and equipments in the Zonal hospitals

No	Type of service, equipment or supply in Zonal hospital	All the times	Sometimes	Total
1	Oxygen supply	9	7	16
2	Oxygen concentrator	9	7	16
3	Functional anesthesia machine	13	3	16
4	Designated emergency care	8	8	16
5	Designated postoperative care	6	10	16
6	Management guideline for emergency care	1	15	16
7	Blood transfusion in the facility	3	13	16
8	Functioning pulse ox meter	11	5	16
9	Functioning x-ray machine	13	3	16
10	Hemoglobin and urine test in the facility	14	2	16

The zonal hospital based on the services and supply showed that hemoglobin and urine test in the facility (87.5%), functioning x-ray machine (81%), functional anesthesia machine (81%), functioning pulse ox meter(69%) were available all the times but oxygen supply (56%), oxygen concentrator(56%) Blood transfusion in the facility (19%) and management guideline for emergency care (6%) were sometimes available.

Table 9: Availability of important service, supply and equipments in the Regional hospitals

No	Type of service, equipment or supply in Regional hospital	All the times	Sometimes	Total
1	Oxygen supply	7	1	8
2	Oxygen concentrator	4	4	8
3	Functional anesthesia machine	7	1	8
4	Designated emergency care	5	3	8
5	Designated postoperative care	5	3	8
6	Management guideline for emergency care	0	7	7
7	Blood transfusion in the facility	3	5	8
8	Functioning pulse ox meter	3	4	7
9	Functioning x-ray machine	8	0	8
10	Hemoglobin and urine test in the facility	8	0	8

In the regional hospitals the data stated that services and supply management guideline and functioning pulse ox meter were sometimes available in the hospitals.

Table 10: Availability of key health professionals

No.	Types of Professional	Permanent		
		District	Zonal	Referral
1	Nurse/Clinical/Assistant medical officers providing anesthesia	4	13	6
2	General Practitioners performing Surgery	2	11	1

3	Clinical /Assistance medical officers performing surgery	3	5	1
4	Obstetrician/gynecologist	2	11	4
5	Surgeons	3	13	9

The study indicated that 4 districts, 3 zonal and 2 regional hospitals don't have nurses /clinical /assistant medical officers providing anesthesia as permanent staffs. Six zonal and four regional hospitals have lack of obstetrician/gynecologist as permanent staffs and four zonal and two regional hospitals lack permanent staff surgeon

Table 10: Reasons for lack of EESS intervention by type of facility

Emergency & Essential surgical care	Type of facility		Lack of skilled personnel	Nonfunctiona l equipments	Lack of supplies
Cricothyroidotomy/ tracheostomy	District	Remove this column	3	3	0
	Zonal		1	1	1
	Regional		0	0	0
Cesarean section	District		3	1	0
	Zonal		0	0	0
	Regional		0	0	0
Appendectomy	District		3	0	0
	Zonal		3	0	0
	Regional		0	0	0

Three district and one zonal hospitals did not perform EESS like tracheostomy, cesarean section and appendectomy. The main reason attributed for the non-performance is lack of skilled personnel and equipments. Lack of equipment was mentioned in all the four hospitals for not doing tracheostomy. One hospital didn't have at all the equipment for cesarean section.

Table 11: Availability of equipment and supplies in the emergency rooms of the hospitals

Emergency Equipment and Supplies	Absent	%	Available, but frequent stock outs	%	Consistently available	%
Resuscitator bag valve & mask(adult)/ambu bag	0	0	6	19.4	24	77.4
Resuscitator bag valve and mask (paediatrics)	3	9.7	5	16.1	23	74.2
Oxygen source: cylinder/concentrator	5	16.1	12	38.7	14	45.2
Mask and tubing to connect to oxygen supply/ Indotracheal tube	2	6.5	4	12.9	21	67.7
Stethoscope	1	3.5	1	3.2	28	87.5
Batteries for flash light	2	6.5	4	12.9	20	64.5
Suction pump(manual or electric)	2	6.5	10	32.3	17	54.8
Blood pressure measuring equipment	3	9.4	3	9.4	24	75
Thermometer	2	6.3	5	15.6	24	75
Scalpel handle with blade	0	0	2	6.5	26	81
Retractor	0	.0	3	9.7	25	78.1
Scissors straight 12cm	1	3.5	6	18.4	24	75.2
Scissors blunt 14cm	2	6.3	6	18.4	23	71.9
Or pharyngeal airway(adult size)	11	34.4	5	15.6	15	46.9
Or pharyngeal air way(paediatric size)	11	34.4	5	15.6	14	43.8

Tissue forceps with tooth	1	3.2	3	9.7	27	87.1
Tissue forceps non tooth	0	0	3	9.7	28	90.3
Kidney dishes stainless steel	0	0	2	6.5	27	87.1
Capped bottle ,alcohol based solution	0	0			27	87.1
Gloves (examination)small, medium, large	0	0	12	37.5	18	56.3
Needle holder	0	0	6	19.4	24	77.4
Sterilizer	0	0	6	19.4	25	80.6
Nail brush, scrubbing surgeon's	18	58.1	2	6.5	6	19.4
Vaginal speculum	1	3.2	1	3.2	28	90.3
Bucket, plastic	1	3.2	0	.0	27	87.1
Drum for sterile compresses, bandage, dressings	2	6.5			27	87.1
Examination table	1	3.2	2	6.5	28	90.3

Out of the 31 hospitals, 5 (16%) do not have oxygen sources in their emergency rooms and in 12(38.7%) had no oxygen source or had with frequent shortage or difficulties. Oropharyngeal air way (pediatric size) were absent in 12(39%) of the hospitals whereas 5(16%) had frequent shortage of the supply. Important emergency equipments and supplies such as gloves and blood pressure apparatus were absent in 1(3%) and 4 (6) hospitals, respectively.

6. Discussion

In this study we surveyed 31 hospitals out of 122 public hospitals in the 9 regions and 1 city administration of Ethiopia. Out of this 31 hospitals, 8 were district hospitals, 16 were Zonal hospitals and 7 were regional hospitals representing all the FMOH four tier health care delivery system.

The study showed that six out of eight district hospitals have less than 100 beds. This is lower than the optimal size of a district hospital which is 100-150 bed. Nevertheless, most of the district hospitals serve on average more than 600,000 populations, though WHO recommend a district hospital population of 1/500, 000. [7]

In this study, more than a quarter of the zonal hospitals had less than 100 beds. The study also showed that two districts and one zonal hospital had no designated beds for surgical patients. About half of the district hospitals designated less than a quarter of their total beds for surgical care.

Three of the district hospitals and one zonal hospital did not perform any major surgery. One district hospital and one zonal hospital did not have either minor or major surgical services. However, according to Vos (2) 11% of the ‘‘global burden of disease’’ can be treated with surgery. The study further revealed that one zonal and one regional hospital had a surgical care intervention at a very small capacity (less than 100 major and minor surgeries per year)

According to Bickler, the incidence of pediatrics surgical problem is 543 per 10000 children aged 0-14 years, of which 46% requires surgical procedure.(3). However, in this study 5(15.6%) of the hospitals did not perform any surgical intervention for children less than 15 years. 18(56.3%) hospitals carried out less than 100 surgical procedures per year. Two zonal and one regional hospital had no surgical intervention at all.

Twelve (37.5%) of the hospitals did not have designated emergency room and fourteen (43.8%) of the hospitals did not have post operative recovery room. Most of the hospitals (78%) had a problem of blood transfusion facilities. Some hospitals also did not have or they had a shortage of x- ray facilities and basic laboratory services. This finding were similar to the inadequacies seen in other low and middle income countries (4)

Twenty eight (90%) of the hospitals did not have management guidelines for emergency care. This affects the provision of appropriate and standard emergency surgical care. In half of the district hospital there are anesthetists all times. In 7(21.9%) of the zonal hospital and 4(12.5%) of regional hospital there is permanent Gynecologist /Obstetrician. Four (12.5%) of the zonal hospital and two (6.3%) of the regional hospital have no permanent surgeon. This is similar with the findings on shortage of human resources in other African countries. (1)

A significant number of hospitals don't provide emergency and essential surgeries like tracheostomy 12 (37%), caesarian section 8 (19%) appendectomies 9 (28%) and hernia repair 7 (22%). The major reasons were lack of skilled personnel, lack of equipment and lack of supplies.

There was a shortage of basic EESS equipment and supplies in the emergency rooms of several hospitals. In some hospitals there was a complete absence of these equipment and supplies. Five (16.1%) of the hospitals did not have oxygen. Two (6.5%) hospitals did not have suction machine while 3 (9.4%) did not have blood pressure measuring apparatus.

According to the information collected through Focus Group Discussion (FDG) and In-depth Interview (IDI), participants were asked about the effectiveness and efficiency of the surgical service in the hospitals, the major problems for effectiveness and efficiency of the service, about BPR and Hospital Reform Implementation guideline (EHRIG), and the quality of the surgical service.

Regarding the effectiveness and efficiency of the surgical service in the hospitals most of the participants of the focus group discussion responded that with the shortage of equipments, supplies like drug, manpower and space, the service is effective and efficient because the it is improving from time to time, the waiting time for elective surgery decreased, there is low post operation infection, there is relatively low mortality rate, minimal surgical site infection and very few waiting list. However, participants from Dembidollo and Metu karl hospitals mentioned that the service was limited and too many elective surgical cases were in the waiting list.

The major problems mentioned by the FDG participants for the effective and efficient implementation of the service are shortage or absence of medical equipments (such as sterilizer indicator, old autoclave, gauze, abdominal pack, ER BP apparatus, elective sets, hysterectomy set, cattery machine, etc) , shortage of supplies such as drug, problems related to working space and infrastructure, absence of blood bank, shortage of manpower in terms of number and capacity and lack of favorable working policy.

Regarding BPR (Business Process Pre Engineering) and Ethiopian Hospital Reform Implementation Guideline (EHRIG), respondents from Mizan Teferi, Almata, Dembidollo, Motta and Metu Karl hospitals mentioned that BPR/EHRIG enabled to enhance the performance and quality of the service. It improved the documentation, recording and reporting system, helped to identify who was working and who was not, helped to identify problems or gaps of

communication, enables to use a three shift system in order to fulfill the satisfaction of the patient, assisted to treat patients on the day they come, and helped to give more emphasis to patient care. Respondents from Yirgalem, Shashemene, Woldiya and Bahir Dar hospitals mentioned that BPR/EHRIG is not well implemented mainly because shortage of manpower, absence of incentives and trainings. Respondents from Jinka H/P have no idea about BPR/EHRIG and it is not yet started to be implemented in Keberidar H/P

Respondents from Mizan Teferie, Bahirdar, Dembidollo and Metu Karl hospitals express the quality of service in terms of fulfillment of necessary equipments, availability of competent staff, operation without complication and with post operation care, reduced surgical site infection, reduced mortality, proper infection prevention procedure, patient satisfaction and patient to staff ratio. Respondents mentioned that the quality of the surgical service is improving from time to time and stated that there is still a lot to improve. A respondent from Metu Karl hospital mentioned that there was pressure from the government officials to focus on the quantity (to have high number of admissions) rather than focusing on the quality of the service.

Regarding the endeavors made to improve the quality of the service, the following were the major actions mentioned by the respondents: provide on job staff training, pre- post preparation, taking nurses in surgical ward, making patients to be accompanied by nurses, reporting the problems and challenges to higher officials, searching for support from NGOs and other hospitals, provide incentives for the staff to motivate them especially to the surgical staff (duty payments) . Respondents from Metu Karl hospital mentioned that in order to improve the quality of the surgical serve, they established a Task Force and made efforts to strengthen the quality of the service using different mechanism such as proposed private wing to increase the income of the hospital and to be able to pay to extra staff, communicating with teaching hospitals (Jimma University) to consider Metu Karl hospital as one of their destiny to have extra staff , communicating with Regional Health Bureaus and zonal health offices to strengthen emergency surgical care .

7. Conclusion

From this study we can see that the essential and emergency surgical services, which should be a public health priority, most of the hospitals did not deliver adequately. The main reasons the study disclosed were shortage of human resource for delivering surgical services, poorly equipped health facilities, and structural mal-arrangement. To further elaborate on the matter, shortage of surgeons, gynecologists and anesthetists in addition to the lack of emergency rooms, post operative care rooms and emergency care guidelines, could be mentioned at most. Moreover, there was lack of efficient utilization of the already available resources at hand.

8. Recommendations

- ❖ Appropriate standardization and restructuring of the hospitals made based on their capacity.
- ❖ Long term and short term strategic plan for development of EESS designed in consultation with the appropriate stakeholders.
- ❖ A comprehensive and multifaceted clinical and surgical outreach for service and on job training designed for improving the prevailing poor EESS delivery system

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