World Health Organization

Ministry of health




General National Conference

Libya Interim Government 2012

Post Conflict Assessment of Hospitals

Carried by
the health information center

Prepared by :
EL - Zanaty & Associates

Table of Content

Tables and Figures

Acknowledgements

The health facilities services assessment survey was conducted after the conflict in Libya with the collaboration between Ministry of Health Libya and World Health Organization - Regional Office for the Eastern Mediterranean, who provided the project financing and technical support during the implementation phases of the survey. The Health Information Center at the Ministry of Health – LIBYA supervised the implementation of the survey. The Author is pleased to express thanks, appreciation and gratitude to a number of individuals and institutions for their efforts and their valuable contribution to the implementation of the survey and to facilitate the task of researchers

Her Excellency Former **Minister of Health Dr: Fatima Ahamrosh**

And the gentlemen:

World Health Organization - Regional Office for the Eastern Mediterranean

- Dr Samir ben Yahmed Deputy Program Manager
- Dr Sameen Siddiqui Director of health systems division
- Dr. M Mahmoud Ali regional adviser Health Situation and trend Assessment
- Dr. Ibrahim Abdul Rahim, director of Information Evidence & research
- Dr Jean Jabbour WHO Representative in Libya
- Eng. Ahmed Bayomie Afify : Geographic Information system Expert
- All colleagues in the WHO Office in Libya

And all the experts who contributed to the implementation of the survey in all its stages.

Ministry of Health - Libya

- Mr Mohamed Ibrahim Saleh Director of Health information center
- Eng. Ali Tunisy Assistant Supervisor Survey
- Eng. Zayed Abdul Salam Mohammed Assistant Supervisor Survey
- Data Entry team in the Information center
- Working teams in the information center
- Supervisors and field surveyors in all Governorates
- Health district directors and health facilities directors across Libya

And all Libyan experts who contributed to the implementation of the survey in all its stages.

Abbreviations and Acronyms

AHS	Assessment of Hospitals in Libya
CPAP	Continuous Positive Airway Pressure
ELISA	Enzyme-Linked Immunosorbent Assay
EMRO	Estern Mediteranean Regional Office
HIV	Human Immunodeficiency Virus
MOH	Ministry of Health
PCHSR	The Post Conflict Health System Response
PHC	Primary Health Care
SARA	Service Availability and Readiness Assessment
TORs	Term of References
UN	United Nations
WHO	World Health Organization

Executive Summary

Libya is a welfare country where health and education are free and provide universal coverage. There have been impressive improvements in health and education standards over the past decennia. Health services were badly disrupted in Libya during the conflict in 2011, and access to health services remains problematic, particularly for many vulnerable populations in need of mental health or psychosocial support, the displaced and mobile populations, the war wounded in need of treatment and rehabilitation, the victims of gender based violence, pregnant women left without antenatal, delivery and post- partum maternity services in nearby non-functional.

During the crisis WHO has played a key role in coordinating, mobilizing and optimizing health actions to address the immediate needs as well as to provide technical assistance and guidance. In the post-conflict phase WHO is expected to play a major role in coordination with essential stakeholders and partners in the restoration and development of the health system in order to resume and maintain provision of quality health services to the Libyan population.

Damage to health service infrastructure and disruptions in essential service provisions experienced by the population during the conflict have come on top of a number of systemic challenges hampering the performance of service delivery, including weak priority setting, planning, and budgetary processes; uneven assignment of social benefits; the need to rationalize the civil service; limited participation of the private sector and civil society; institutional instability; and lack of reliable data.

The main objective of this study (***Post conflict hospital assessment for Libya 2012***) is to assess the current status of health system infrastructure, organizational structure and management of hospitals, health workforce, financial resources, pharmaceutical sector and drugs, service delivery and utilization, and effect of conflict.

Post conflict hospital Libya survey covered almost all hospitals in Libya from each of the 21 Districts. A total of 86 hospitals were visited (33 Teaching tertiary hospitals, 20 secondary hospital, 31 rural hospitals and two considered "other hospitals").

I. Infrastructure

Overall 16% of hospitals were damaged post-conflict, half of those were moderately damaged and the other half was severely damaged. Rural hospitals were more likely to be affected during conflict where 6 hospitals were damaged/severely damaged, which represent 19%, compared with only 2 of the secondary hospitals that considered severely damaged (10%). By district, hospitals in only 9 districts were affected by the conflict. The most affected district was Misurata, where 3 out of 4 hospitals (75%) were severely damaged; while in Al-Gebal Elgharbi 3 out of 7 hospitals (43%) were severely damaged.

Overall, out of the 86 hospitals, 29 hospitals were renovated and 20 hospitals are under renovation contract.

II. Organizational Structure and Management

Data shows that there are major shortage in the organization structure and management in Libya hospitals. Only 43% of hospitals have job description and TORs for the medical director, while 59% have job descriptions and TORs for the administrative director. Fewer hospitals have job descriptions and TORs for the clinical department heads (19%), while job description and TORs for all employees are available in 22% of hospitals.

Half of hospitals have clear written mission, and 45% have clear written vision. Written hospitals' organizational structures are available in around two –third of hospitals, however, only one third of hospitals have management board.

Overall 38% of all hospitals in Libya have barriers to accessibility of services. Significant differences in accessibility of

services were observed by district, while differences by hospital type were limited. All the three hospitals (100%) in Derna districts have barriers to accessibility, where the barriers were nil (0.0%) in five districts (Almarege, Al-Wahat, Joufara, Sebha and Al-Gebal-Elgharbi).

Only one third of the hospitals provide in-service-training regularly and close to this percentage (31%) of hospitals have specific budget for the training. The in-service-training offered differ by the type of hospital. Forty two percent of teaching hospitals offer in-service-training for their staff and have special budget for in-service- training, while 35% of secondary hospitals offer in-service-training, and 25% only have budget for the in-service-training. Rural hospitals are less likely to offer in-service-training (26%) and only 23% have a special budget for in-service-training.

III. Health workforce

Although the total number of physicians is increased after the conflict in Libya hospitals in all specialties, but this varies a lot according to the type of hospitals and according to the districts, where the number of some specialties increases in some districts and decreases in others.

Looking at the number of internal medicine doctors, data show that there has been a slight increase in the number of internal medicine doctor from a level of 1103 pre-conflict to a level of 1324 post-conflict. By district, there was much discrepancy, where the number has significantly increased in Benghazi (from 323 pre-conflict to 453 post-conflict), while it has decreased to almost the half in Al-Merghip (from 29 pre-conflict to 15 post-conflict). Sebha has only one internal medicine doctor and Derna has no doctors.

The number of pediatricians has increased clearly in all types of hospital with the main increase being in rural hospitals. By district, the number of pediatricians during the post conflict phase has increased in Al-Gebal-Elgharbi, decreased clearly in Naloot while there were no pediatricians in five districts: Albetnan, Derna, Alwahat, Morzig and Sebha.

The total number of OB/GYN doctors increases from 2190 pre-conflict to 2279 post conflict. By district, the number of OB/GYN doctors has tripled in Morzig and doubled in Al-kufra, while it has decreased by more than half in Joufara. Derna has only one OB/GYN doctor, while Sirt has only four OB/GYN doctors.

The number of surgeons during the post-conflict phase has declined in the teaching/ tertiary hospitals and increased in rural hospitals. By district, the number of surgeons has increased dramatically in Misurata, while it has declined to the fifth in Al-Gebal-Alakhdar. During the post conflict phase, there are no surgeons in three districts: Albetnan, Derna and Alwahat.

By type of hospital, the number of dentists has slightly decreased in teaching tertiary. By district, the number of dentists has increased in Benghazi, Alwahat, Zwara, and Al-Gebal-Elgharbi. There are no dentists in 10 disricts.

By district, the number of anesthetists has declined in only Misurata, Alzawea, and Naloot. Almost 30% of anesthetists are working in Tripoli. There are no anesthetists working in five districts. In another four districts, only one anesthetist is working in each. Anesthetia

Looking to the number of support staff, there is increase in the number of support staff in all specialties except for surgery and anesthesia, where there was slight decrease in the number of support staff in these specialties.

The density of physicians per 10,000 population during the post conflict phase has increased in all medical specialties except for dentists where the density didn't change.

The total number of pharmacists has increased during the post-conflict phase. By type of hospital, only in the rural hospitals the number of professional pharmacists has declined slightly. By district, the number of professional pharmacists has almost doubled in Benghazi, and it has declined by two third in Misurata. While Derna District has 115 professional pharmacists, there is only one pharmacist in Sebha and no pharmacists in Al-Gebal-Alakhdar and Al-Wahat.

IV. Financing

Overall, 94% of hospitals have annual budget. By type of hospital all teaching tertiary hospitals reported having annual budget compared with 95% of secondary hospitals and 87% of rural hospitals. By district, it is clear from the table that all hospitals in the different district have annual budget except Sebha.

By type of hospital, the highest average amount of annual budget was among teaching tertiary hospitals which were more than 10 times the annual budget among rural hospitals. By district, the highest average amount of annual budget was among Tripoli while the lowest was among Al-Kufra.

Overall, data show that 82% of the budget is spent on human resources; about 5% is spent on patient support (food), administrative support, and maintenance and repair. Only 3% is spent on medicine and lab technology and 1% is spent on training and education.

Rural hospitals were the least likely to spend budget on human resources (74%) compared with 94% of the budget of teaching tertiary hospitals and 85% of the budget of secondary hospitals.

Overall, results show that 81% of hospitals finance outsource of non-clinical services with the highest percentage among teaching tertiary hospital (94%).. However, the percentage was much lower for clinical services where only 47% of hospitals reporting that they finance outsourcing of clinical services. By type of hospital, 61% of teaching tertiary hospitals reported that they finance outsourcing of clinical services compared with slightly more than one-third of secondary hospitals and rural hospitals and half of other hospitals.

V. Pharmaceutical Sector and Drugs

During the pre-conflict phase, 82 out of the 86 hospitals (95%) had pharmacy departments, however, during the post-conflict phase, this number declined to 72 hospitals (84%). During the pre-conflict phase, the pharmacy department was available in all teaching tertiary hospitals, more than 90% of secondary hospitals and rural hospitals, and half the others hospitals. These results declined post-conflict to reach 91% of teaching tertiary hospitals, 85% of secondary hospitals, 77% of rural hospitals, while it remained the same for other hospitals. Looking at results by district, the availability of pharmacy department has declined during the post-conflict phase among 9 districts in comparison with the pre-conflict phase. In Derna, there were pharmacy departments available in all 3 hospitals during the pre-conflict phase while post-conflict data show that the pharmacy department is available in only one hospital.

During the pre-conflict phase, 79% of the hospitals had shortage in drugs, however, less than two-third of hospitals had shortage in drugs during the post-conflict phase.

VI. Service Delivery and Utilization

1. Internal Medicine Department

The outpatient visits in internal medicine departments increased post-conflict, while the number of major procedures decreased. There are severe shortages in the basic equipment that are either available or functional in internal medicine departments. This shortage affects all hospitals but it is very critical especially in rural hospitals.

There is almost 25% increase in the number of outpatient visits and around 30% decrease in the number of major procedures. No outpatient visits were conducted in the post-conflict phase in 4 districts that have 7 hospitals in comparison to 5 districts in the pre-conflict phase.

No major procedures were conducted in the post-conflict phase in 10 districts that have 30 hospitals. More than 80% of the major procedures were conducted only in 4 districts (Benghazi, Wadi Alshati, Tripoli and Zwara).

The total percentage of the outpatient visits per professional staff is almost the same during the pre and post-conflict phases; however percentage of major procedures was significantly less during the post-conflict phase.

There is minimal increase in the total number of medical units related services staff in the post-conflict phase.

No single hospital type has all the basic internal medicine department equipment, also not all the available equipment is functioning.

2. General Surgery Department

The number of admissions as well as the number of outpatient visits in general surgery departments increased post-conflict, while the number of operation sessions decreased post conflict. General Surgery departments have severe shortages in the basic equipment that are either available or functional in internal medicine departments. This shortage affects the function of general hospitals departments in all hospitals, but it is very serious in rural hospitals.

The total number of general surgery beds in Libya is 4746. Almost 95% of these general surgery beds are located in both teaching tertiary hospitals and secondary hospitals. More than half of the beds are located only in 2 districts (Tripoli and Al- Benghazi).

There is more than 17% increase in the total number of general surgery staff in the post-conflict phase. Almost half of the general surgery staff is working only in Tripoli and Benghazi.

In general, the increase in the number of the professional staff is reflected on the increase in the number of outpatient visits and admissions; however, there is decrease in the number of operation sessions.

No operation sessions were conducted during the post-conflict phase in 9 districts that have 24 hospitals. Almost two thirds of the operation sessions were conducted only in 3 districts (Tripoli, Mozig and Al- Benghazi). However, the number of the operation sessions was decreased significantly in the previous three Districts during the post-conflict phase compared to the pre-conflict one.

No admissions were reported in 5 Districts both in the pre and post-conflict phases. Almost two thirds of the admissions were reported only in 3 Districts (Joufara, Tripoli and Benghazi). During the post-conflict phase, number of admissions increased significantly compared to the pre-conflict phase in Albetnan, Benghazi, Sirt and Joufara.

No outpatient visits were conducted in the post-conflict phase in 4 districts that have 7 hospitals in comparison to 7 districts in the pre-conflict phase. More than half of the outpatient visits were conducted only in 3 districts (Zwara, Joufara and Tripoli). During the post-conflict phase, number of outpatient visits increased significantly compared to the pre-conflict phase in Albetnan, Benghazi, Sirt, Joufara and Naloot.

No single hospital type has all the basic general surgery department equipment, also not all the available equipment is functioning.

3. Obstetrics & Gynecology Department

The number of outpatient visits decreased post-conflict, while the number of admissions to OB/GYN departments and number of major procedures increased post conflict. Regarding the basic equipment that are either available or functional in OB/GYN departments, the available data shows that there are critical shortage in these basic equipment in OB/GYN departments in all hospitals.

All hospitals provide OB/GYN in Libya (86 hospitals). The total number of OB/GYN beds in Libya is 8639. Rural hospitals only host more than half of OB/GYN beds. More than one third of these OB/GYN beds are located in teaching tertiary hospitals. Around 45% of the beds are located only in 3 districts (Benghazi, Naloot and Al-Kufra).

There an increase (10%) in the total number of OB/GYN staff during the post-conflict phase. The increase was mainly in teaching and secondary hospitals. Almost 40% of the OB/GYN staff is working only in 3 districts (Benghazi, Albetnan and Al-Merghip). Naloot that has the biggest number of OB/GYN beds (1083 beds) has only 142 total staff.

There is more than 40% increase in the numbers of the major procedures and around 50% increase in the numbers of admissions, while there is a 15% decrease in the number of outpatient visits.

During the post-conflict phase, almost all of the major procedures were done in the rural hospitals. Number of the major procedures

decreased significantly during the post-conflict phase in secondary and tertiary hospitals in comparison to the pre-conflict phase. No major procedures were conducted in the other hospitals.

More than half of the major procedures were conducted only in 2 districts (Wadi Alshati and Al-Gebal-Elgharbi). Post-conflict phase in 3 districts (Derna, Morzig and Tripoli).

Number of the admissions increased during the post-conflict phase and more than 80% of these admissions were done in the rural hospitals.

Almost three quarters of the admissions were conducted only in 2 districts (Wadi Alshati and Al-Gebal-Elgharbi). There were no admissions during the post-conflict phase in 2 districts (Derna and Alwahat).

There is almost 50% increase in the total number of OB/GYN unit's related services staff in the post-conflict phase. There is no staff in 14 districts in the post-conflict phase compared to 17 districts during the pre-conflict phase. Slightly less than half of this staff is working only in 2 districts (Albetnan and Wadi Alshati).

There is significant increase in the number of the outpatient visits and number of major procedures; however there is a dramatic decrease in the number of the patients served. The numbers of outpatient visits and major procedures were doubled during the post-conflict phase.

Almost 90% of the patients were served in the secondary hospitals and the rest were served in the rural hospitals. All patients were served in only 3 districts (Almarege, Misurata and Wadi Alshati).

No single hospital type has all the basic OB/GYN department equipment, also not all the available equipment is functioning.

4. Pediatrics Department

The number of outpatient visits, the number of admissions and number of major procedures increased post conflict. Regarding the basic equipment that are either available or functional in pediatric departments, the available data shows that there are critical shortage in these basic equipment in all hospitals.

According to data collected, the total number of pediatrics beds in Libya is 995. Almost four fifth of these pediatric beds is located in both teaching tertiary hospitals and secondary hospitals. Almost 40% of the beds are located only in 3 districts (Misurata, Al-Mirghip and Al-Gebal Elgharbi).

There is more than 11% increase in the total number of pediatrics staff in the post-conflict phase. There is no pediatric staff in 5 districts both during the pre and the post-conflict phases. More than three quarters of the pediatric staff is working only in 7 districts. There is an increase in the number of utilization of pediatric services. There is more than 25% increase in the number of outpatient visits, more than 60% increase in the number of major procedures and there is more than one third increase in the number of admissions.

No outpatient visits were conducted in the post-conflict phase in 7 districts that have 18 hospitals in comparison to 10 districts in the pre-conflict phase. Almost 60% of the outpatient visits were conducted only in 4 districts. No major procedures were conducted in 16 districts both in the pre and post-conflict phases. More than 90% of the major procedures were conducted only in 2 districts (Benghazi and Al-Gebal Elgharbi).

No admissions were reported in 8 districts both in the pre and post-conflict phases. More than two thirds of the admissions were reported only in 2 districts (Benghazi and Joufara).

No single hospital type has all the basic pediatric department equipment, also not all the available equipment is functioning.

5. Operating Theatre

While the number of elective surgery increased in post conflict, it was surprising that the number of emergency operation decreased post conflict.

All hospitals provide operating theater services in Libya (86 hospitals). The total number of operating theater rooms in Libya is 950. Forty-six percent of these rooms are located in 3 districts (Benghazi, Al-Merghip, and Tripoli).

There is small increase in the total number of

operating theater staff during the post-conflict phase (6%). There was an increase in the number of staff in 10 districts, while there was a decrease in 8 districts. The increase was highest in Jaufara, while the decline was significant in Tripoli.

There is almost 10% increase in the number of elective surgery; however, the number of emergency surgery was decreased by almost 26%.

No surgery was conducted during the post-conflict phase in 2 districts that have 4 hospitals. Around half of the elective surgeries were conducted only in 4 districts ((Joufara, Al-Jufra, Tripoli and Benghazi). More than 60% of the emergency surgeries were conducted only in 5 districts ((Misurata, Tripoli, Alzawea, Benghazi, and Albetnan). Number of the operation sessions has increased significantly in Misurata and decreased significantly in Tripoli during the post-conflict phase.

6. Anesthesia Services

The results about the anesthesia departments in Libya shows that the number staff working in operation theaters slightly decreased post-conflict and the number of procedures decreased sharply in all hospitals.

Total number of anesthesia staff did not change during the post-conflict phase; however there is a significant (60%) decrease in the number of procedures.

There was decline in the number of anesthesia staff of the rural hospitals during the post-conflict phase by around 22% while there was around 40% decrease in the number of the procedures during the post-conflict phase. More than 55% of the procedures were conducted only in 2 districts (Sirte and Joufara).

During the post-conflict phase, the number of procedures has increased significantly in Sirte while it has decrease drastically in both Benghazi and Tripoli.

7. Radiology Services

Although the number of hospitals with available radiology services decreased post-conflict, the number of staff, the number of outpatients as well as the number of inpatients increased.

During the post-conflict phase, there is more than 10% decrease in the number of hospitals in which the radiology services are available. This decrease was only in the tertiary teaching hospitals type.

During the post-conflict phase, there was a little decrease (10%) in the total number of the patients served.

There is 8% increase in the total number of the staff during the post-conflict phase only in rural and secondary hospitals.

The number of outpatients served during the post-conflict phase was three times more than the number during the pre-conflict phase.

There was almost 3 times increase in the number of inpatients served during the post-conflict phase. There was a significant increase in the number of inpatient served by rural hospitals, while this decrease was in tertiary hospitals.

There was almost (13%) increase in the number of the functioning equipment in the hospitals during the post-conflict phase. This increase affected rural and secondary hospitals, while there was a decrease in the number of the functioning equipment in the tertiary hospitals.

8. Lab services

Tthe number of staff working in lab services is increased post-conflict. Although the number of outpatient's visits and the number of inpatients decreased post-conflict, the number of served patients increased post-conflict. Libya hospitals show severe shortage of laboratory equipment either that available or functional.

In spite of the decrease in the number of hospitals in which the lab services are available during the post-conflict phase, there was more than 39% increase in the total number of the patients served.

There is a significant increase in the total number of the staff during the post-conflict phase affected mainly the secondary hospitals, while there is no change in the number of staff in both the rural and the "other" hospitals and only 10% decrease in the staff of the tertiary hospitals.

In spite of the increase in the number of staff, the number of inpatients served during the post-conflict phase was almost the same number as during the pre-conflict phase.

There was 6% decrease in the number of the functioning equipment in the hospitals during the post-conflict phase. This decrease affected only the tertiary hospitals, while there was 11% increase in the number of the functioning equipment in secondary hospitals.

No single hospital type has all the basic laboratory department equipment, also not all the available equipment is functioning.

9. Intensive Care Units Services (ICU)

Tthe number of staff working in ICU as well as the number of inpatients and the number of served patients increased post-conflict. But the ICU units in Libya hospitals are facing severe shortage in the equipment as the number of functional equipment decrease to 50% post-conflict.

There is almost 21% increase in the total number of the ICU staff during the post-conflict phase. Almost all the patients were served in both tertiary and secondary hospitals, while there are no patients in the other hospitals. Almost 60% of the staff during the post-conflict phase is working in only 4 districts (Tripoli, Zwara, Benghazi and Misurata). No ICU staff in 10 districts during both pre and post-conflict phases.

Most of the ICU outpatient visits during post-conflict were conducted in tertiary hospitals and in only 2 districts (Al-zawea and Tripoli).

The number of ICU outpatient visits during the post-conflict phase was 20% less. There was a minimal decrease in the number of outpatient visits by tertiary hospitals during the post-conflict phase, while the decrease was significant in secondary hospitals. No outpatients served by either rural or other hospitals during the post-conflict phase.

During the post-conflict phase, there was more than 33% increase in the number of ICU served inpatients.

There was almost 53% decrease in the number of the functioning equipment in the ICU units in the hospitals during the post-conflict phase.

10. Dentist

Although the number of staff working in dental departments increases, the number of served patients decreased post-conflict in all hospitals.

The total number of dental units is 71. Almost all of these dental units are located in both teaching tertiary hospitals and secondary hospitals with only 3 units located in rural hospitals. More than 55% of the units are located only in 2 districts (Derna and Tripoli).

There is more than 45% increase in the total number of staff during the post-conflict phase. In spite of the 45% increase in the number of the staff, there was 18% decrease in the number of the patients served during the post-conflict phase.

During the post-conflict phase, almost 80% of the served patients were conducted in both secondary and tertiary teaching hospitals. While during the pre-conflict phase, almost two third of the served patients were conducted in tertiary hospitals.

No patients were served during the post-conflict phase in 15 districts that have 36 dental units. Almost 92% of the patients were served in only in 5 districts (Al-Zawea, Al-Gebal-Elgharbi, Tripoli, Benghazi and Zwara).

VII. Effect of Conflict

Overall 16% of hospitals were moderately/severely damaged due to the conflict. By district, hospitals in only 9 districts were affected by the conflict. The most affected district was Misurata, where 3 out of 4 hospitals (75%) were severely damaged; while in Al-Gebal Elgharbi 3 out of 7 hospitals (43%) were severely damaged.

The central sterilization unit of 17 hospitals (20% of hospital in over Libya) was affected post-conflict. By district, Tripoli has the highest number of hospitals with CSU damaged (4 out of 12 hospitals).

By district, Tripoli has the highest number of ambulance service department damaged,

where 5 out of the 12 hospitals (42%) in Tripoli have ambulance service department damaged (moderately or severely). However, all hospitals in Misurata district (4 hospitals) have ambulance service department severely damaged

Generally, the number of physicians and support staff has increased for all types of surgical specialties (expect support staff for anesthetists) post-conflict compared with pre-conflict. Generally, the number of physicians and support staff has increased in most of the districts, however for some surgical specialties the number of either physicians or support staff has decreased post-conflict in comparison with pre-conflict. For example, the number of support staff has increased significantly in Ajdabia post-conflict in comparison with pre-conflict, yet the number of support staff for OB/GYN has decreaed. On the contrary, in Benghazi the number of support staff for OB/GYN has almost doubled post-conflict compared with pre-conflict.

Physicians' density in general seems to be low in Derna, Almarege, Al-Kufra and Al-Wahat, which suggest that these three districts need an increase in number of physicians. In other districts, the physician's density differ from one surgical specialty to another, where in some specialties the physician's density is high while for others it seems to be low. Generally, the physician's and support staff numbers are high in Tripoli, Zwara, and Benghazi, while these numbers are low in Derna.

1. Introduction

Libya is located in north Africa on the southern coast of the Mediterranean sea between 18º and 33º north latitude and 9º and 25º east longitude, with total land area of 1 665 000 square kilometres,. It is surrounded by six African countries, namely Tunisia, Algeria, Niger, Chad, Sudan and Egypt, and has a coastline of around 1900 kilometres along the Mediterranean sea.

The total estimated population at mid year of 2010 was 5,702,000 Male 50.7 % Female 49.3 % which makes the population density rates, at 3.3 persons per km2.

Libya is a welfare country where health and education are free and provide universal coverage. There have been impressive improvements in health and education standards over the past decennia. Social benefits have guaranteed minimum income to each family and social security for all vulnerable people. Food and other subsidies have ensured basic living standards. The welfare is highly dependent on oil production, with other economic sectors as well as private sector less developed. State provided employment has bloated the civil service ranks.

Libya's health system is a mix of public and private health care. There are systemic weaknesses which have been exposed and aggravated by the conflict.

As of February 2009, according to a report released by the MOH, Libya had 96 hospitals with 20,289 beds, 25 specialized units with 5,970 beds, 1,355 primary health centers, 37 polyclinics and 17 quarantine units. Libya had 10,230 doctors of whom 8,612 (84%) were Libyan and 1,618 (16%) were foreign. This gives a 17 doctors for every 10,000 citizens. The reliance on foreign nursing staff was even more marked, particularly at the senior and highly qualified levels, and their departure during the conflict contributed to serious disruption of hospital services.

Owing to the large number of health facilities, access to primary health care (PHC) was in principle not an issue in Libya. According to official figures, 100% of the population had access to health care services. Around 90% pregnant women were cared for by trained health personnel, and 99% of all deliveries were attended by trained personnel. Routine immunization coverage was more than 90%. However, the primary health system's gradual deterioration in recent years was exacerbated by the conflict. Access to essential life saving services markedly deteriorated during the conflict.

Damage to health service infrastructure and disruptions in essential service provisions experienced by the population during the conflict have come on top of a number of systemic challenges hampering the performance of service delivery, including weak priority setting, planning, and budgetary processes; uneven assignment of social benefits; the need to rationalize the civil service; limited participation of the private sector and civil society; institutional instability; and lack of reliable data.

Health services were badly disrupted in Libya during the conflict in 2011, and access to health services remains problematic, particularly for many vulnerable populations in need of mental health or psychosocial support, the displaced and mobile populations, the war wounded in need of treatment and rehabilitation, the victims of gender based violence, pregnant women left without antenatal, delivery and post partum maternity services in nearby non-functional primary health facilities, people with HIV risk behaviors, such as injection drug use or who may be at risk of sexual transmission, and people in need of life saving antiretroviral treatment for HIV.

During the crisis WHO has played a key role in coordinating, mobilizing and optimizing health actions to address the immediate needs as well as to provide technical assistance and guidance. In the post-conflict phase WHO is expected to play a major role in coordination with essential stakeholders and partners in the restoration and development of the health system in order to resume and maintain provision of quality health services to the Libyan population.

The main role of WHO in this crisis is to support establishing national health policy and the strategy for national health plan based on primary health care principles, to address urgent health needs and to restore disrupted health services, and to start modernizing the health system aiming at delivery of adequate, cost effective and quality health services accessible to all people.

WHO Framework for Post conflict System Response in Libya

Post conflict context often poses significant challenges for the health system and for the new government, including its Ministry of Health. Urgent interventions need to be undertaken to alleviate the conflict impact on the health system and to restore its pre-conflict functionality. Then the health system needs to be reset in conformity with new post conflict realties. WHO needs to be engaged in the PCHSR process and it should invest its long standing relationships with national stake holders and the technical insight which it accumulated from sustained engagement with the HS to assure success of the process. The principles of national ownership which was a guiding principle for previous WHO engagement in the country should continue to be so, while seeking the continuation of strengthened mutual trust and partnership in the new era.

The post conflict Health System Response (PCHSR) should not be viewed in isolation from WHO continued engagement in the country well before and during the conflict period. WHO has maintained its presence and engagement in the country even throughout Libya prolonged isolation following the UN Embargo, when the international presence in the country was almost non-existent. During the recent crisis in WHO was actively collaborating with other UN agencies, and development partners in providing relief and humanitarian assistance to the country. It mobilized all available resources to support the MOH to maintain its functions under the conflict challenging circumstances. Now after the cessation of hostilities WHO role will continue in a different mode. The post conflict role of WHO is conceived as a prime mover and the convener which facilitates collaboration between with other UN agencies, partners active in the health field and national authorities during the health system post conflict response.

The framework for the PCHSR outlines three phases for the post conflict period in which distinct tasks need to be undertaken. These phases are delineated below:

1. **Phase I: Immediate restoration of essential health services & rapid assessment:** This phase started following the cessation of conflict or hostilities and stabilization of situation which is indicated by the return of a level of normality to everyday activities. There are two major tasks to be fulfilled during this phase which are namely (i) A rapid assessment and appraisal of the status of service delivery, its capacities and resources. (ii) The formulation of immediate plans or urgent interventions necessary for restoration of an acceptable level of service delivery for essential services The rapid assessment leads to appraisal of the status of the health infrastructure, service delivery and the system functions. The assessment findings will be used in the first place to identify Immediate Post conflict interventions which will be implemented to restore system functionality by relieving bottlenecks such as redeployment of essential staff and maintaining logistics supply chains etc.
2. **Phase II: Resetting the system & development of an intermediate national health plan (1-3 years)** resetting the system which involves tasks such reorganization of the health system and establishing the governance roles of the MOH. Also the development of an interim health plan which set priorities and policy directions and optimizes care delivery during this period. Operational plans will be developed within the intermediate plan (for the different Health System blocks).
3. **Phase III:** Ultimately develop **a comprehensive national strategic health sector development plan (3-5 years).** This plan should be developed following the completion of the transient period and system recovery agenda. It should follow deliberate national

policy dialogue which defines national priorities for the different components/building blocks of the health system, namely governance, financing, technology, human resources, information and service delivery.

The rapid assessment exercise the rapid assessment exercise has conducted at the facility level and at the central and sub central levels. The over-all objectives of the exercise are:

- Assessing the current status of infrastructure, service delivery and system resources including human resources, supply-chain system, technologies and financial resources.
- Assessing facilities readiness and any damage which could have been sustained during the conflict.
- Measuring system outputs, service utilization and their adequacy
- Assessing the system functions governance including the level of organization management and administrative capacities.

Tools were developed or adapted to be used for the two assessment tasks.

1. **Facility assessment census:** It is contemplated that a census assessment of facilities readiness has conducted using WHO assessment tool (SARA) which was adapted in by EMRO to the Libyan contest. It was decided that all facilities are to be covered in this assessment as the impact of the conflict is expected to be uneven across the country. On the other hand the census coverage will provide a solid baseline which will enable monitoring and the tracing over time of the progress made in these facilities during the restoration phase. The adapted tool exists in electronic format and the completion of the census utilizing national teams who was trained for the purpose.
2. **System Assessment at central and sub-central level**: The second area for assessment beside the facilities is the system functionality at the central and sub-central levels.

The teams will use an adapted tool which is based on the health system building blocks under which a list of indicators are suggested to guide the work of the team work. However the expertise of the team should be relied on to capture all aspects of the system and particularly its shortcomings and challenges.

While each of two assessment activities will be analyzed and reported on separately yet ultimately a one comprehensive report will be compiled. The assessment results will be utilized in the first place in the development of immediate service delivery interventions (bumming solutions) to restore functionality.

Expected outputs from the PCHSR in Libya

The expected results of the PCHSR are as follows:

- Valid Information generated through the assessment will inform policy and plans
- Baseline information for monitoring of restoration and development interventions
- Immediate interventions to restore the functionality of the health delivery system and institutions
- Reorganizing and modernizing the health delivery system and its governance
- Intermediate term National Health development plan
- National capacity building in system expertise through the undertaking of the PCHR activities by nationals

1.1 Methodology and Survey Implementation

The pre and post-conflict Assessment of Hospitals in Libya (AHS) provides key information on the state of the hospitals in terms of service accessibility (e.g. density of hospitals and beds, core health workers, service utilization), as well as the readiness of the hospital to provide an adequate level of service (e.g. availability of staff, equipment and medictions), for key health services. Monitoring hospital-level performance provides information on whether health services are present and are being provided at the expected level, and gives an indication of how investments in the formal health sector are resulting in changes at the level of service delivery. This affects utilization of services and ultimately impacts population-level outcome measures. Overall, the Libya AHS 2012 aims to inform the country progress and performance review process. The outcome of this assessment with the assessment of primary health care facilities should be used to provide input into the annual health review as well as the annual planning process.

The 2012 AHS for Libya was conducted at the Hospital level and at the central and sub central levels. The overall objectives of the exercise are:

- Assessing the current status of infrastructure, service delivery and system resources including human resources, supply-chain system, technologies and financial resources.
- Assessing Hospital readiness and any damage which could have been occured during the conflict.
- Measuring health system outputs, service utilization and their adequacy
- Assessing the health system functions governance including the level of organization management and administrative capacities.

AHS 2012 for Libya was conducted to help the health sector in assessing and monitoring service readiness and capacity at district and hospital levels; assessing the equitable and appropriate distribution of services and resources as well as providing the sector with skills and tools for monitoring service and resource availability on a regular basis.

1.1.1 Survey tool

The survey utilizes the tools developed by WHO/EMRO staff with El-Zanaty and modified to Libya context. The Libya AHS 2012 is designed to provide key information on the state of the Hospitals in Libya in the following areas:

- General service availability (accessibility of health services): health infrastructure (density of hospitals and inpatient beds), health workforce, and inpatient/outpatient services utilization.
- Organizational structure and management of hospitals, availabiltiy of: job description, known organizational structue and community represenation, functionality of specific teams, and training activities.
- Service delivery and utilization (proportion of hospitals providing specific key health services and their capacity to provide these services (internal medicine, general surgery, pediatrics, operating theatre,..). Availability of trained staff, equipment, diagnostics, and medicines and commodities required to provide the services.

The Libya AHS questionnaire consisted of a set of questions measuring service availability and readiness that can be used to detect change and measure progress in health system strengthening over time.

1.1.2 Selection of hospitals

The 2012 Libya AHS was a census of all public Hospitals in Libya. All hospitals in Libya from each of the 23 district were included in the survey. It was decided that all hospitals will be covered in this assessment as the impact of the conflict is expected to be uneven across the country. On the other hand the census coverage will provide a solid baseline which will enable monitoring and the tracing over time of the progress made in these hospitals during the restoration phase.

A total of 86 hospitals facility were identified for the survey and contacted. Out of those there is the international center in Tripoli which has 29 building each one provides one or more service and 29 questionnaires were filled in this center. Taking into consideration that data of this center will affect the indicators obtained out of the 86 hospitals; accordingly the center was excluded during the analysis from the tables presented in this report. However, special tables were produced for this center separately and are included in annex B.

1.2 Data Collection and Processing

Planning for Libya Hospital Survey activities started in February 2012 with developing the questionnaires and manuals for the field staff.

Training took place in Libya – Tripoli with a trainer expert from El-Zanaty participated with WHO/EMRO staff in conduction of a Post-conflict Hospital Assessment Survey trainingworkshop, from 21-26 March 2012. The tool was also tested by using it in some pilot facilities.

A total number of 8 staff from the district Health Offices were trained in data collection and 26 field staff as interviewing teams carried out the data collection between April and August 2012. Data were entered using CSPro software using 8 PC and the data was available for report writing by late November 2012.

2. Infrastructure

Health services must be physically accessible for the population to benefit from them. General service availability refers to the physical presence of health service delivery components within a district. This is computed as a density of health services per unit population. General service availability is measured by the following tracer indicators and will be covered in this section:

- Health infrastructure density
  - Hospital per 10,000 population
  - Inpatient beds per 10,000 population

In addition, this section will present also the effect of the conflict on hospitals building.

2.1 Current Status of Hospitals

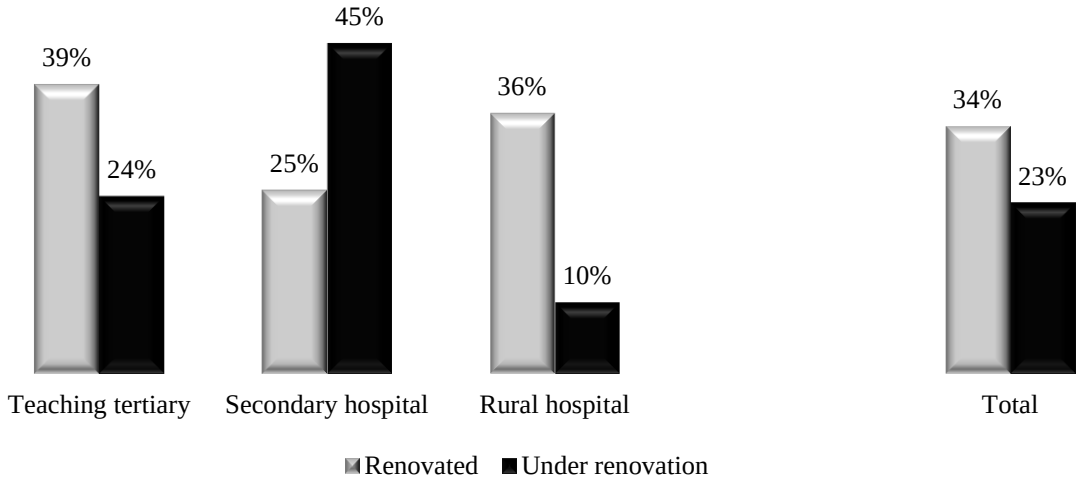
Table A.2.1 present the current status of the hospital. Overall, out of the 86 hospitals there are 29 hospitals renovated and 20 hospitals are under renovation contract.

Current status of the hospital

Background characteristic	Renovated	Under renovation contract	Number of hospitals
Type of hospital			
Teaching tertiary	13	8	33
Secondary hospital	5	9	20
Rural hospital	11	3	31
Other	0	0	2

The majority of Secondary hospitals (70 %) are either renovated or under renovation contract, this represents 16% of the total number of the hospitals slightly less than two thirds of Teaching hospitals (21 hospitals) are renovated or under- renovation, this represents around one quarter of the total number of the hospitals. Around 45% of the rural hospitals (14 hospitals) are renovated or under- renovation, this represents almost 16% of the total number of the hospitals.

Figure 2.1: Current status of the hospital (renovated/Under renovation) by type of hospital

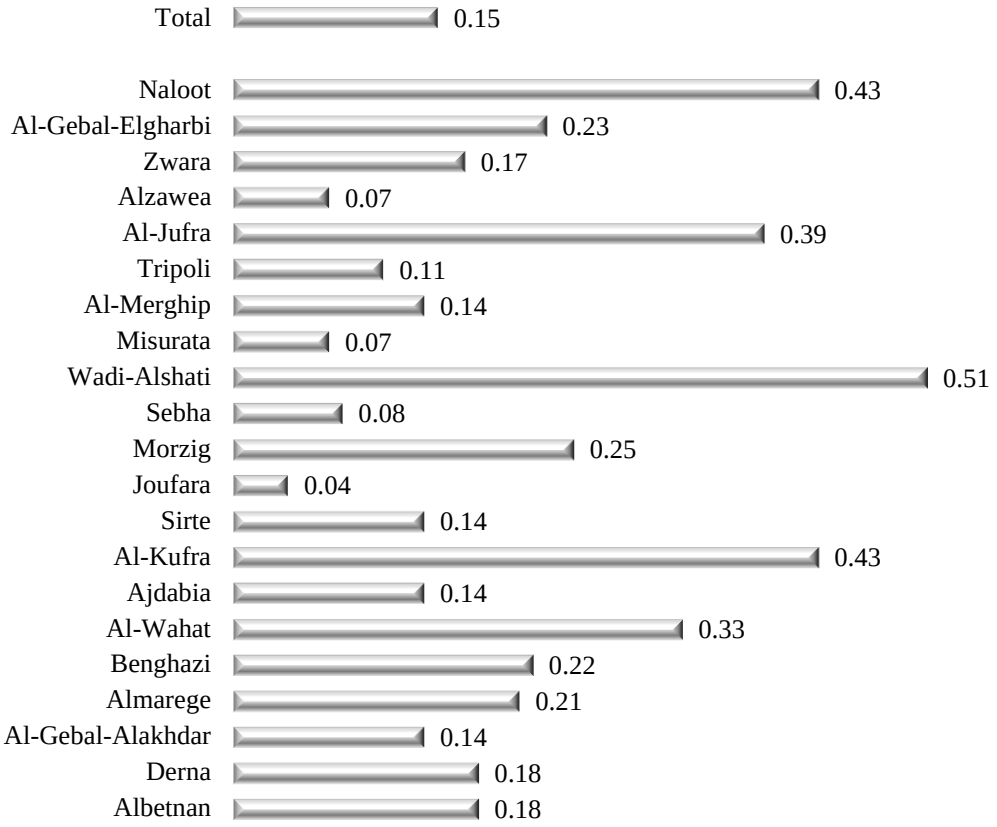


2.2 Density of Hospitals

The hospital density is primarily an indicator of outpatient service access. Table A.2.1 presents the density of hospitals per 10,000 populations. Based on 2010 population there are 0.15 hospitals available per 10,000 population. The numbers of hospital available per 10,000 population differ greatly by district. The average ranges from 0.33 hospitals in Al-Wahat to only 0.22 & 0.11

respactively per 10,000 population in Benghazi and Tripoli. The low level of hospitals in Tripoli may be due to the fact that the survey excluded from the analysis the international center in Tripoli because it included 29 buildings.

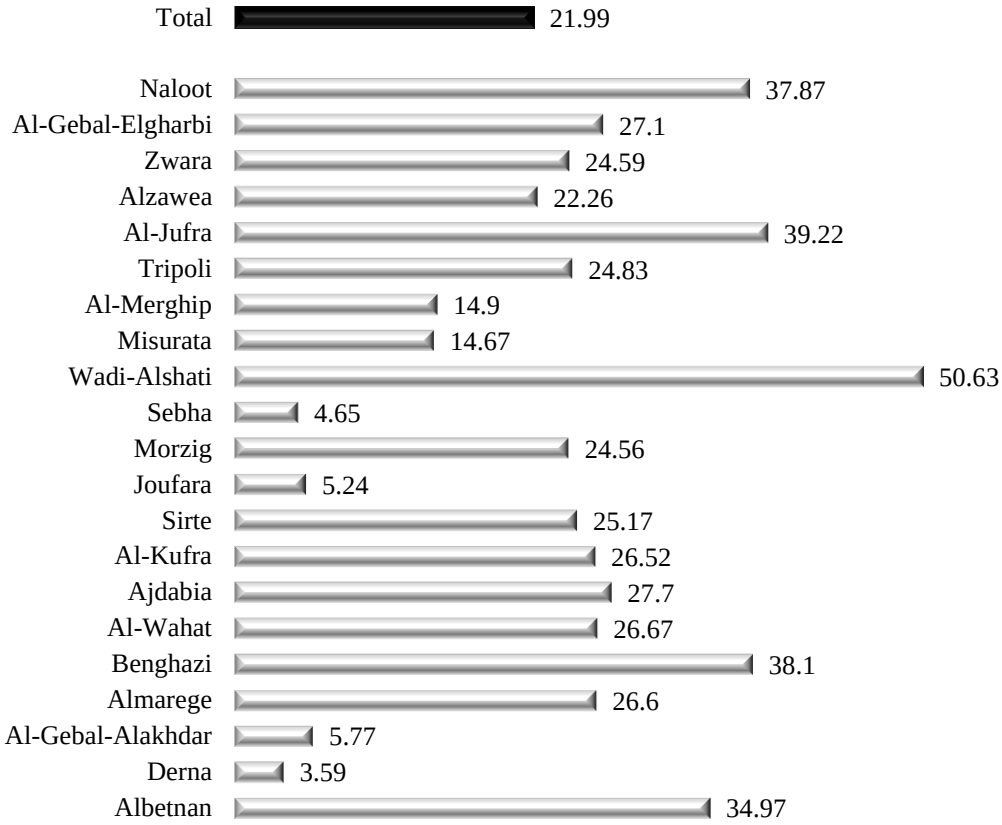
Figure 2.2: Hospitals per 10,000 population by district



Inpatient beds

Figure 2.3 shows the overall inpatient bed density by district. Overall, there was around 21.99 inpatient beds per 10,000 population post-conflict. This figure varies by district from a low level of 5.77 in Al-Gebal-Alakhdar to 3.59 in Derna to the level of around 26.67 inpatient beds per 10,000 population in Al-Wahat, Al-Jufra had 39.22 inpatient beds per 10,000 population to the highest level of 50.63 in Wadi-Alshati. The majority of the district had an inpatient bed density more than 3.02 per 10,000. Unexpected, the number of inpatient beds per 10,000 population in Benghazi (38.1) and Tripoli (24.83), this is may be due to the fact that the total population size in each of the two districts much more than the other district.

Figure 2.3: Beds per 10,000 population by district



2.3 Effect of Conflict on Hospitals' Building

As mentioned previously the conflict in Libya has affected the health sector physically, where many health facilities and hospitals were damaged during the conflict. The questionnaire included question about the effect of conflict on hospitals building and how severely was the damaged.

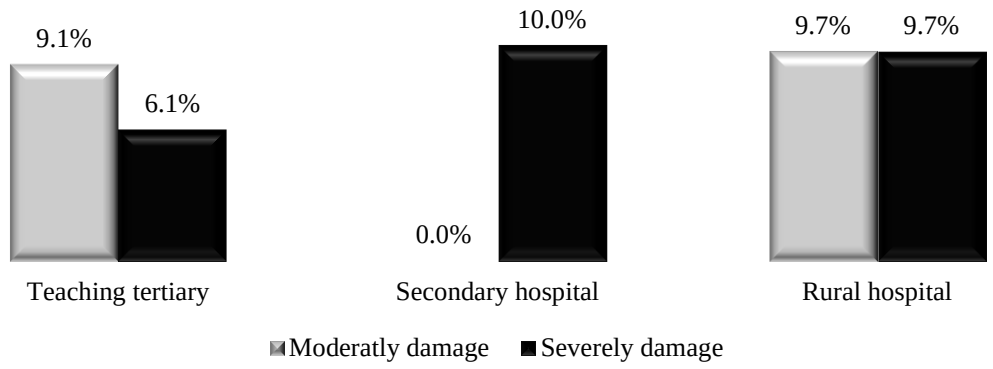
Effect of conflict on hospitals' building condition

Background characteristic	Hospitals that were moderately damage (No.)	Hospitals that were severely damage (No.)	Hospitals that were moderately and severely damage (%)	Number of hospitals
Type of hospital				
Teaching tertiary	3	2	15.2	33
Secondary hospital	0	2	10.0	20
Rural hospital	3	3	19.4	31
Other	1	0	50.0	2

Table A.2.2 present the percentage of hospitals that were damaged or severely damaged during the conflict by type and district.

Overall 16% of hospitals were damaged/severely damaged post-conflict, half of those were moderately damaged and the other half was severely damaged. Rural hospitals were more likely to be affected during conflict where 6 hospitals were damaged/severely damaged, which represent 19%, compared with only 2 of the secondary hospitals that considered severely damaged (10%). By district, hospitals in only 9 districts were affected by the conflict. The most affected district was Misurata, where 3 out of 4 hospitals (75%) were severely damaged; while in Al-Gebal Elgharbi 3 out of 7 hospitals (43%) were severely damaged.

Figure 2.4: Number of hospitals that were moderately damage and severely damage by type of hospital



3. Organizational Structure and Management

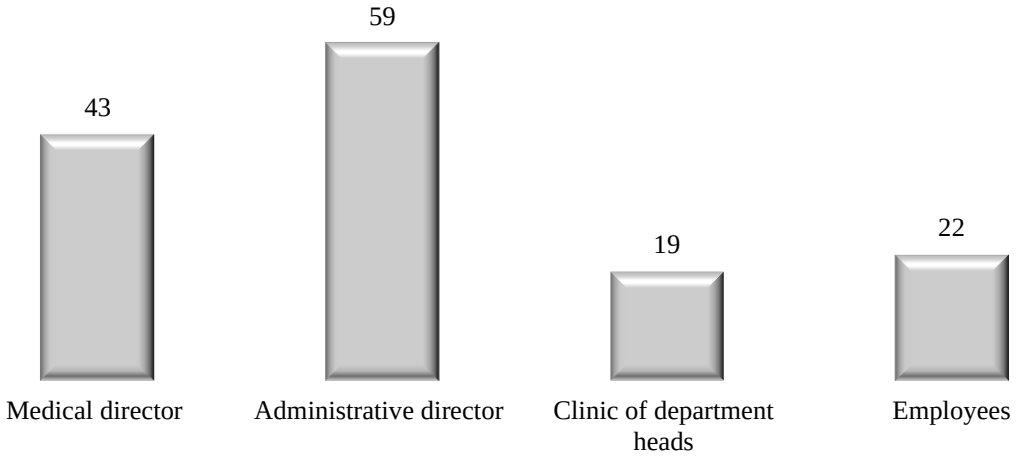
Organizational structure and management refers to levels of management within a hospital. The organizational structure of today's hospital is a complex maze of committees, departments, personnel, and services. In addition to being a caring, people-oriented institution, it is at the same time a many-faceted, high-tech business. It operates just like any other large business, with a hierarchy of personnel, channels of authority and responsibility, and constant concern about its bottom line.

This section covers the organizational structure and management of the hospitals. The availability of job description, vision, mission, and management board will be covered in this section in addition to access problem, availability and functioning of specific teams in the hospitals.

3.1 Availability of Job Description and TORs in the Hospital

Table A.3.1 shows that, many hospitals have no clear written job descriptions and TORs for different hospital staff classified by type of hospitals. Overall, 43% only of hospitals have job description and TORs for the medical director, while 59% have job descriptions and TORs for the administrative director. Few percent of hospitals have job descriptions and TORs for the clinical department heads (19%), and 22% have job description and TORs for all employees.

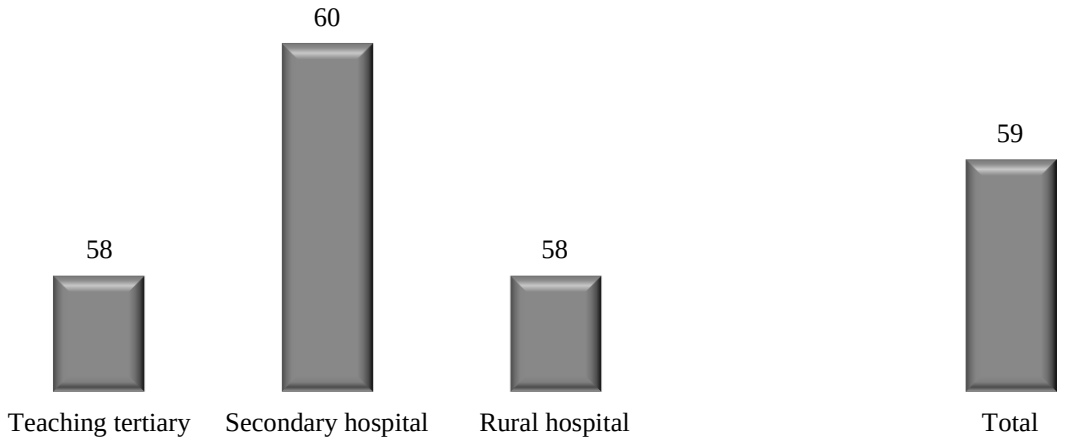
Figure 3.1: Percentage of hospitals with available staff and management job description



These figures differ by hospital type. Around half of Teaching tertiary hospitals (52%) have job descriptions and TORs for the medical director, however secondary hospitals have higher percentage of availability of job descriptions and TORs for the medical director, while rural hospitals have lower percentage (65% and 18% respectively).

As for administrative director, teaching hospitals have job descriptions and TORs less than overall figures (58%), while in 60% of the secondary hospitals there are job descriptions and TORs for administrative director, while rural hospitals have job descriptions and TORs for the administrative director in 58% of the hospitals.

Figure 3.2: Distribution of administrative directors by type of hospital



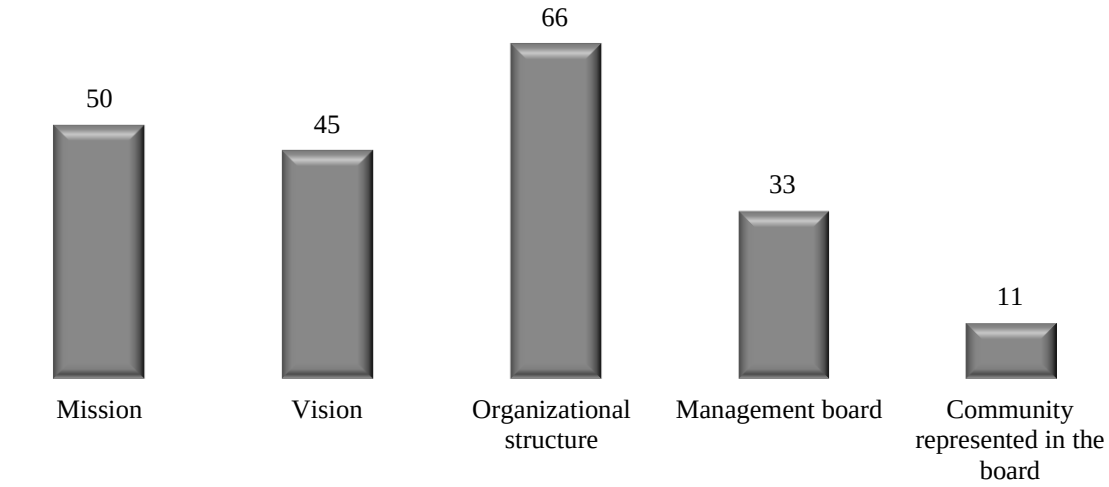
The availability of job descriptions and TORs of clinical department head and other employees are much less, where 18% and 21% of teaching tertiary hospitals have job descriptions and TORs for clinical department heads and employees respectively. These figures are 25% and 20% for secondary hospitals, and 13% and 26% for rural hospitals.

3.2 Availability of a Known Organizational Structure and Community Representation

The questionnaire included collecting data concerning the exits of clear written documents regarding the mission, the vision, and organizational structure. Also, a question was addressed concerning if there is management board of each hospital, and if there a community representation in the board. In addition, is there any barrier to the accessibility of services to people.

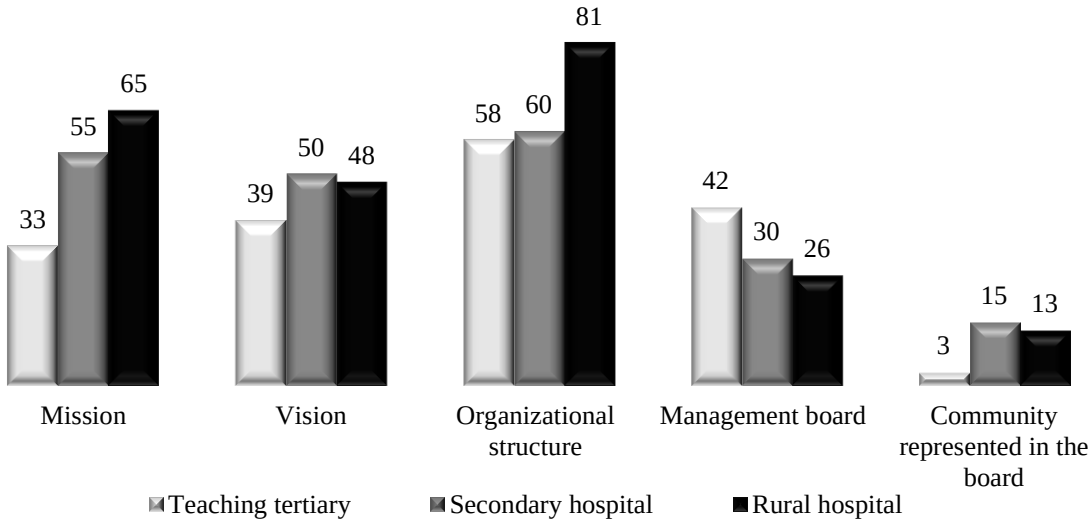
The data indicated that overall, 50% of hospitals have clear documents written regarding the mission of the hospital, and 45% have clear written vision of the hospital. Written documents of Organizational structure of hospitals are available in around two –third of hospitals, however, only one third of hospitals have management board in the hospital (Table A.3.2).

Figure 3.3: Percentage of hospitals with organizational structure



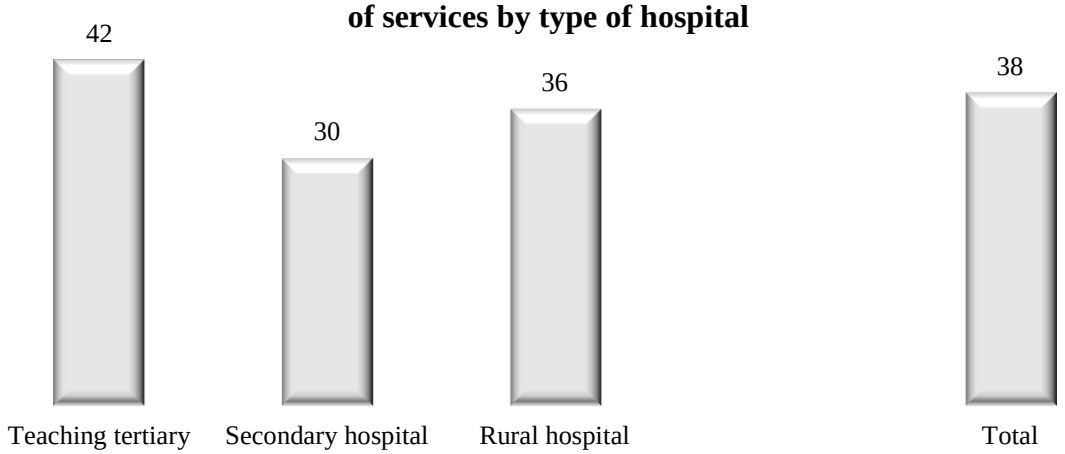
These indicators differ by hospital type. Unexpected the teaching tertiary hospitals are less likely to have clear written documents regarding the mission and vision, organizational structure and community representation in the board of the hospital, and are more likely to have management board than other hospitals. For example, around one third of teaching hospitals have clear written mission compared with two third among rural hospitals, and 3% have community representation in the board compared with 15% of secondary hospitals.

Figure 3.4: Percentage of hospitals with organizational structure by type of hospital



A question was asked if there is any (according to my understanding of the question, it is cultural) barrier to the accessibility of services for people and services developed to address them. the results indicated that overall 38% of all hospitals have barriers to accessibility of services to people. Significant differences in accessibility of services for people were observed by district, while differences by hospital type were limited. For example, 100% of hospitals in Derna, 53% of hospitals in Benghazi and half of the hospitals in Ajdabia, Al-Kufra, Sirt, Morzig, Wadi Alshati, Tripoli, Al-Jufra and Alzawea have barriers to accessibility of services to people compared with no hospital in Almarege, Alwahat, Joufara, Sebha and AL-Gebal Elgharbi has barrier to accessibility of services to people. As by type of hospital the barriers to accessibility of services for people ranges from 30% for secondary hospitals to 36% for rural hospitals, and the highest was among teaching tertiary hospitals (42%) (Table A.3.3).

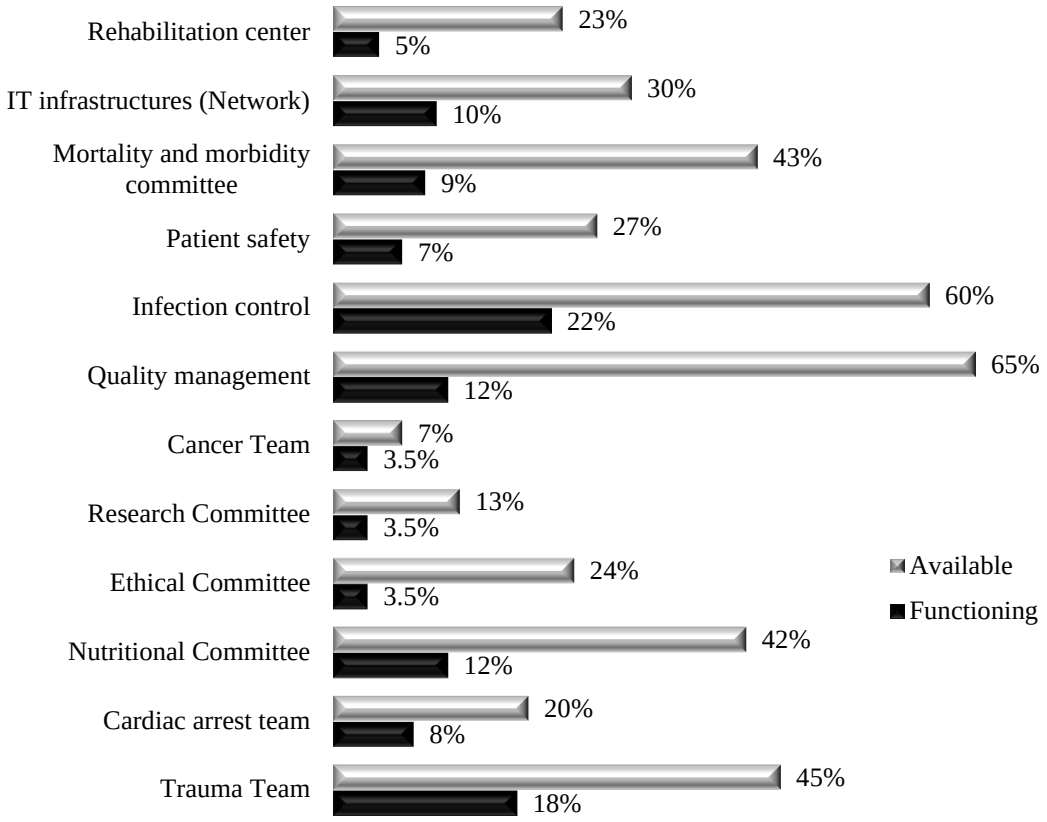
Figure 3.5: Percentage of hospitals with barrier to the accessibility of services by type of hospital



3.3 Availability and Functionality of Specific Teams in the Hospital

The questionnaire included question related to the availability of specific teams/offices at the hospital and if it is active (functioning) or not. These specific teams/offices were: (trauma, cardiac arrest, nutritional committee, ethical committee, research committee, cancer team, quality management, infection control, patient safety, mortality and morbidity committee, IT infrastructures (network) and rehabilitation center. Table (A.3.4) present the results of the 12 teams/offices that were ask about by type of hospital. Overall 39 hospitals have Trauma team out of the 86 hospitals (45%); out of those only in 16 hospitals the Trauma team is functioning. Hospitals are more likely to have quality management team (56 hospitals) and infection control (52 hospitals) available; however, most of them are not functioning. Other team/committee are available and functioning but with less percentage, for example, only 8% of hospitals have Cancer team, 13% have research committee and 20% have Cardiac arrest team available. Unexpected, rehabilitation center is only available in less than 25% of hospitals and half of those hospitals the rehabilitation center is not functioning.

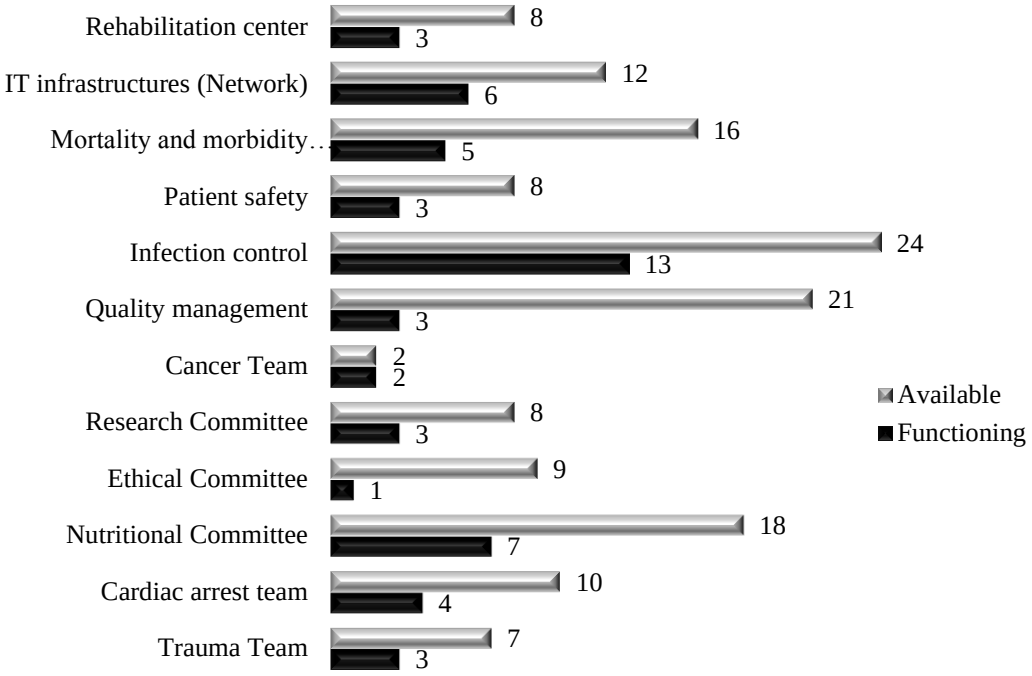
Figure 3.6: Percentage of availability and functionality of specific teams in the hospital



Rural Hospitals are more likely than any other hospital type to have Trauma team (77%) , quality management (71%), and infection control (45%) ,however, most of these teams are not functioning (8%, 5%, and 0% are functioning respectively).

Figure 3.7 shows that teaching hospitals are more likely to have quality management (64%) and infection control (73%), however; only 62% of the available quality management and 13% of the available infection control are functioning.

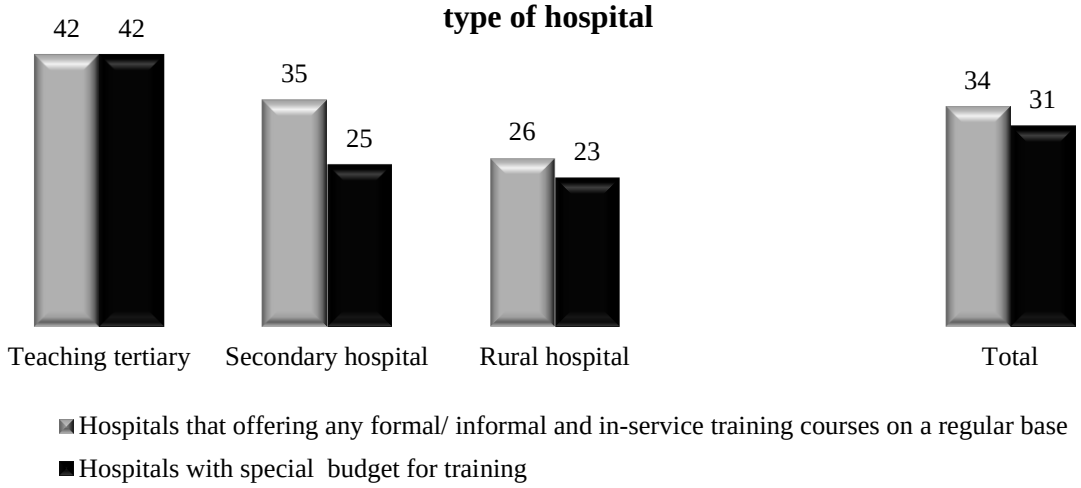
Figure 3.7: Number of availability and functionality of specific teams in the hospital by teaching hospitals



3.4 Training Activities in Hospitals

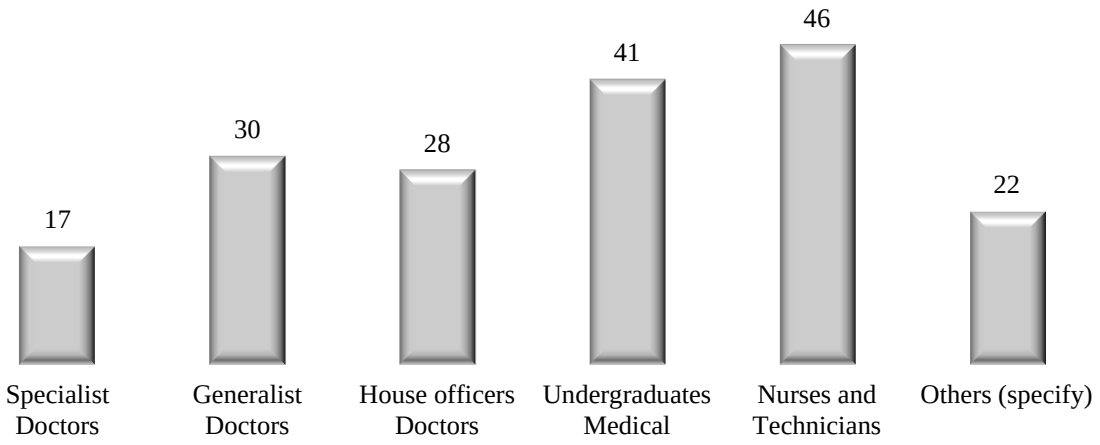
Continues training for physician, nurses and technicians is important for maintaining the quality of service provided by the hospital. Table A.3.5 presents if the hospitals offer regularly formal/informal and in-service training for the staff and if there is a special budget for the in-service-training. The figure indicates that only one third of the hospitals provide in-service-training regularly and close to this percentage (31%) of hospitals reported having specific budget for the training. The in-service- training offered differ by the type of hospital. Forty two percent of teaching hospitals offer in-service-training for their staff and have special budget for in-service-training, while 35% of secondary hospitals offer in-service-training, and 25% only have budget for the in-service-training. Rural hospitals are less likely to offer in-service-training (26%) and only 23% have a special budget for in-service-training.

Figure 3.8: Percentage of hospitals offering training activities by type of hospital



Overall, hospitals offer training more to nurses/technicians (53%) and undergraduates medicals (48%), followed by general doctors (35%). Specialists are the least to be offered training (20%). Differences are clear by hospital type, where teaching hospitals are more likely to offer training for all their staff than secondary and rural hospitals. For example, 69% of teaching hospitals offer trailing for undergraduate medical compared with 60% of secondary hospitals and 35% of rural hospitals. Same pattern was observed for other type of staff who received training, with exception to nurses where equal percentage of nurses offered training in both teaching hospitals and secondary hospitals.

Figure 3.9: Number of hospitals that offered training activities to different medical staff



4. Health Workforce

The questionnaire for the Libya hospital survey included questions related to the number of physicians and support staff (nurses, technicians and midwives) according to the different types of specialties. Results of these questions will be discussed in this chapter. In addition, the average number of physicians per 10,000 population for the different types of specialties was calculated and will be presented.

4.1 Number of Physicians in Hospitals

Table A.4.1 shows the total number of physicians in the hospitals according to type of specialties.

Looking at the number of internal medicine doctors, data show that there has been a slight increase in the number of internal medicine doctor from a level of 1103 pre-conflict to a level of 1324 post-conflict. Results by type of hospital show that the number of internal medicine doctors has increased in all types of hospitals. By district, the total increase in the number of internal medicine doctors was reflected on the increase in the number of the internal medicine doctors in most of the districts. However, the number has significantly increased in Benghazi (from 323 pre-conflict to 453 post-conflict), while it has decreased to almost the half in Al-Merghip (from 29 pre-conflict to 15 post-conflict). No change in the number of the internal medicine doctors in Almarege, Joufara and Wadi-Alshati. Sebha has only one internal medicine doctor and Derna has no doctors.

Table A.4.1 shows also that the number of pediatricians has slightly increased from a level of 603 pre-conflict to a level of 671 post-conflict. By type of hospital, the number of pediatricians has increased clearly in all types of hospital with the main increase being in rural hospitals (from 55 pre-conflict to 77 post-conflict). By district, the number of pediatricians has increased in Al-Gebal-Elgharbi from 32 pre-conflict to 50, while it has decreased clearly in Naloot from 20 pre-conflict to 14 post-conflict. During the post conflict phase, there are no pediatricians in five districts: Albetnan, Derna, Alwahat, Morzig and Sebha.

The number of OB/GYN doctors has increased slightly from 2190 pre-conflict to 2279 post-conflict. By type of hospital, the number of OB/GYN doctors has decreased slightly in teaching tertiary and rural hospitals while it has slightly increased in secondary hospitals. By district, the number of OB/GYN doctors has tripled in Morzig from a level of 62 pre-conflict to 189 post-conflict and doubled in Al-kufra from a level of 44 pre-conflict to 89 post-conflict, while it has decreased by more than half in Joufara from a level of 20 pre-conflict to 8 post-conflict. Derna has only one OB/GYN doctor, while sirt has only four OB/GYN doctors. It is strange that Albetnan has 171 OB/GYN doctors but has neither pediatricians nor surgeons!

Results showed that the total number of surgeons has increased from 5736 pre-conflict to 6420 post-conflict. By type of hospital, in the teaching tertiary the number of surgeons has declined from 3051 pre-conflict to 2437 post-conflict, while on the contrary in rural hospitals the number of surgeons has increased from 2343 pre-conflict to 2784 post-conflict. By district, the number of surgeons has increased dramatically in Misurata from a level of just 11 pre-conflict to 708 post-conflict, while it has declined by almost five times in Al-Gebal-Alakhdar from a level of 611 pre-conflict to 115 post-conflict. During the post conflict phase, there are no surgeons in three districts: Albetnan, Derna and Alwahat.

The number of radiologists has increased from a level of 2551 pre-conflict to 4516 post-conflict. By hospital, the number of radiologists has doubled in rural hospitals (859 pre-conflict and 1754 post-conflict). By district, the increase was significant in Albentan, Al-Merghip, Zwara, and Al-Gebal-Elgharbi. However, the number of radiologists has decreased clearly in Al-Gebal-Alakhdar, Sirte, Morzig, and Naloot. During the post conflict phase, there are no radiologists in Derna.

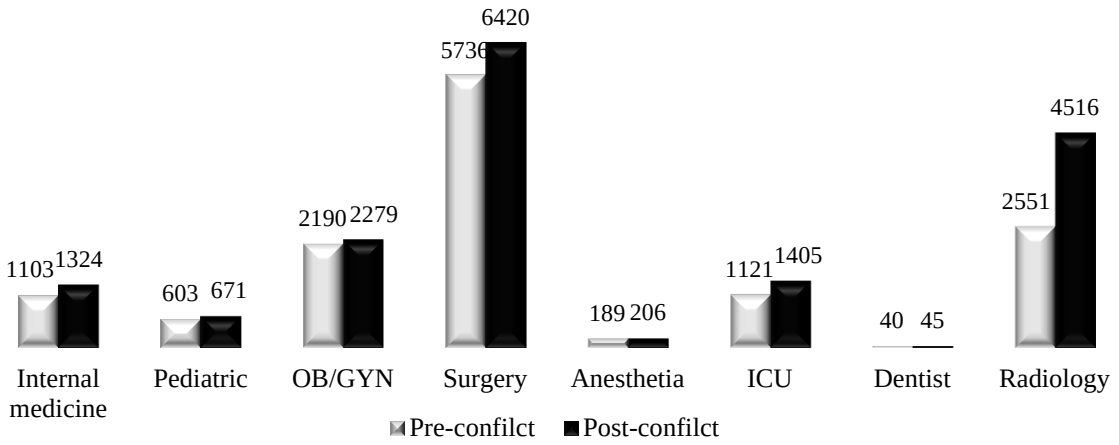
Table A.4.1 shows that, the number of ICU physicians has increased from 1121 pre-conflict to

1405 post-conflict. By type of hospital, the significant increase was in secondary hospitals (from 92 pre-conflict to 317 post-conflict). By district, the increase in the number of ICU physicians was clear in Tripoli and Zwara. It is strange that Zwara has 900 ICU physicians while Benghazi has only 37 ICU physicians. There are no ICU physicians in 12 disricts.

The number of dentists has increased slightly from a level of 40 pre-conflict to a level of 45 post-conflict. By type of hospital, the number of dentists has slightly decreased in teaching tertiary from 30 pre-conflict to 29 post-conflict, while it has increased in secondary hospitals from 8 pre-conflict to 9 post-conflict. By district, the number of dentists has increased in Benghazi, Alwahat, Zwara, and Al-Gebal-Elgharbi. There are no dentists in 10 disricts.

Table A.4.1 shows that, the number of anesthetists has increased from 189 pre-conflict to 206 post-conflict. By type of hospital, the number of anesthetists has increased in teaching tertiary from 132 pre-conflict to 145 post-conflict, while it has increased slightly in secondary hospitals from 48 pre-conflict to 52 post-conflict. By district, the number of anesthetists has declined in only Misurata, Alzawea, and Naloot. Almost 30% of anesthetists are working in Tripoli. There are no anesthetists working in five districts. In another foure disricts, only one anesthetist is working in each.

Figure 4.1: Number of physicians in hospitals according to type of specialties



4.2 Number of Support Staff

Table A.4.2 shows the total number of support staff (nurses, technicians, and midwives) in the hospitals according to type of specialties. Results showed that the total number of surgery support staff has decreased slightly from 12646 pre-conflict to 12286 post-conflict. By type of hospital, in the teaching tertiary the number of surgery support staff has declined from 4216 pre-conflict to 3347 post-conflict, while on the contrary in rural hospitals the number of surgery support staff has increased from 5676 pre-conflict to 6119 post-conflict. By district, the number of surgery support staff has increased surprisingly in Ajdabia from a level of only 1 pre-conflict to 818 post-conflict, while it has decreased dramatically in Sirte and Naloot.

The number of radiology support staff has slightly increased from a level of 2831 pre-conflict to 2928 post-conflict. However, the number of radiology support staff has significantly decreased among teaching tertiary from a level of 1700 pre-conflict to a level of 593 post-conflict, while on the contrary the number of radiology support staff has increased by more than the double among rural hospitals from 856 pre-conflict to 1859 post-conflict. By district, the number of radiology support staff has increased dramatically in Albentan from 4 pre-conflict to 451 post-conflict, while it has declined significantly in Al-Merghip from 1032 pre-conflict to 141 post-conflict.

Results in Table A.4.2 shows that the number of internal medicine support staff has slightly increased from 1218 pre-conflict to 1452 post-conflict. Result by type of hospital shows that significant increase among internal medicine support staff in rural hospitals from 205 pre-conflict

to 462 post-conflict. By district, the number of internal medicine support staff has almost tripled in Al-Gebal-Elgharbi from 30 pre-conflict to 85 post-conflict.

The number of OB/GYN support staff has increased from 2282 pre-conflict to 2668 post-conflict. By type of hospital, results show that the number of OB/GYN support staff has increased in all types of hospitals. By district, the number of OB/GYN support staff has almost doubled in Al-Gebal-Alakhdar, Benghazi, Morzig, and Naloot.

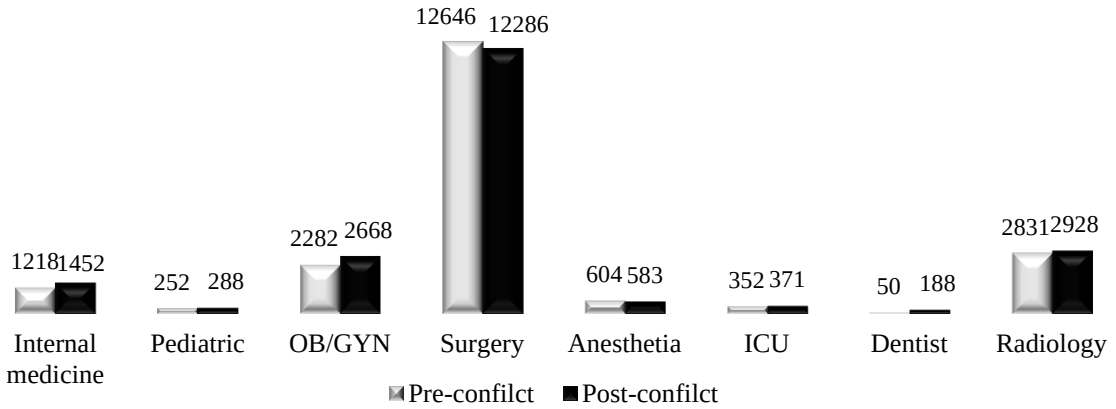
The number of pediatric support staff has slightly increased from a level of 252 pre-conflict to a level of 288 post-conflict. By type of hospital, the number of pediatric support staff has increased significantly in rural hospitals from 32 pre-conflict to 52 post-conflict. By district, the number of pediatric support staff has increased by around 4 times in Al-Gebal-Elgharbi (4 pre-conflict to 17 post-conflict).

Table A.4.2 shows that, the number of anesthetia support staff has slightly decreased from a level of 604 pre-conflict to a level of 583 post-conflict. By type of hospital, the number of anesthetia support staff has only increased in teaching tertiary from 311 pre-conflict to 343 post-conflict. By district, the number of anesthetia support staff has increased by more than 2 times in Sirte from 18 pre-conflict to 44 post-conflict.

Table A.4.2 shows that, the number of ICU support staff has increased slightly from 352 pre-conflict to 371 post-conflict. By type of hospital, the number of ICU support staff has decreased in only teaching tertiary from 218 pre-conflict to 159 post-conflict. By district, the number of ICU support staff has declined by more than 2 times in Benghazi from 58 pre-conflict to 24 post-conflict.

The number of dentist support staff has increased by more than 3 times from a level of 50 pre-conflict to a level of 188 post-conflict. By type of hospital, the number of dentist support staff has increased in rural hospitals from 4 pre-conflict to 26 post-conflict, and in teaching tertiary from 31 per conflict to 145 post-conflict. By district, the number of dentist support staff has increased in Tripoli by 10 times from 12 pre-conflict to 125 post-conflict.

Figure 4.2: Number of support staff in hospitals according to type of specialties



4.3 Physicians Density

Table A.4.3 shows the density of physicians per 10,000 population. Overall, data shows that the number of surgeons per 10,000 population was 10.1 pre-conflict and it has increased to 11.3 post-conflict. By district, the main increase was in Al-Wahat and Sebha, while the main decrease was in Al-Gebal-Alakhdar and Al-Jufra.

The number of radiology physicians per 10,000 population has increased from 4.5 pre-conflict to 7.9 post-conflict. By district, the increase was significant in Albentan, Al-Merghip, Al-Jufra,

Zwara, and Al-Gebal-Elgharbi, while the decrease was clear in Al-Gebal-Alakhdar, Sirte, Morzig, Sebha, and Naloot.

Table A.4.3 shows that the number of internal medicine doctors per 10,000 population has slightly increased from 1.9 pre-conflict to 2.3 post-conflict. By district, the number of internal medicine doctors per 10,000 population has increased significantly in Al-Jufra (from 4.5 pre-conflict to 7.3 post-conflict), while it has decreased clearly in Al-Merghip (from 0.7 pre-conflict to 0.3 post-conflict).

Table A.4.3 shows also that the number of pediatricians per 10,000 population has slightly increased from 1.1 pre-conflict to 1.2 post-conflict. Results by district show that the number of pediatricians per 10,000 population has doubled in Al-Gebal-Alakhdar (from 0.3 pre-conflict to 0.6 post-conflict), while it has decreased clearly in Naloot from 2.1 pre-conflict to 1.5 post-conflict.

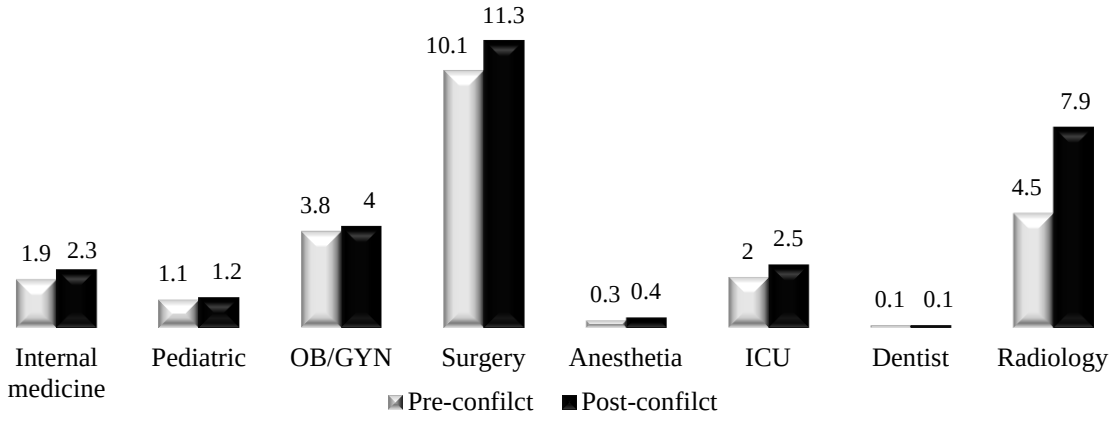
The number of OB/GYN doctors per 10,000 population has increased from 3.8 pre-conflict to 4.0 post-conflict. By district, the number of OB/GYN doctors per 10,000 population has increased b3 times in Morzig (from 7.8 pre-conflict to 23.9 post-conflict), while it almost doubled in Al-kufra (from 9.6 pre-conflict to 19.3 post-conflict) and Al-Jufra (from 5.3 pre-conflict to 10.0 post-conflict).

Results show that the number of ICU physicians per 10,000 population has increased from 2.0 pre-conflict to 2.5 post-conflict. By district, the increase in the number of ICU physicians per 10,000 population was clear in Zwara (from 26.2 pre-conflict to 31.1 post-conflict) and Tripoli (from 1.8 pre-conflict to 3.2 post-conflict).

Table A.4.3 shows that the number of anesthetists per 10,000 population has increased from 0.3 pre-conflict to 0.4 post-conflict. By district, the number of anesthetists per 10,000 population has clearly increased in Al-Wahat and Joufara.

Table A.4.3 shows that the number of dentists per 10,000 population has remained the same as it stand on a level of 0.1 pre and post-conflict. By district, the number of dentists per 10,000 population has increased in Benghazi, Al-Wahat, and Al-Gebal-Elgharbi.

Figure 4.3: Number of physicians per 10,000 population type of specialties

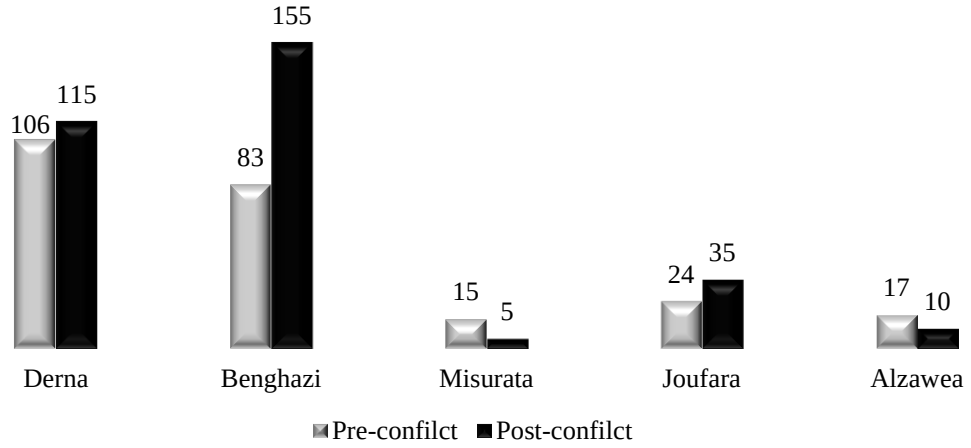


4.4 Number of Pharmacists and Pharmacists Assistants in Hospitals

Table A.4.4 shows the total number of pharmacists, total number of pharmacists assistant, and total number of other pharmacy technical staff (nurses and technician). Results showed that the total number of pharmacists has increased from a level of 677 pre-conflict to a level of 747 post-conflict. By type of hospital, only in the rural hospitals the number of professional pharmacists has

declined slightly (from 231 pre-conflict to 230 post-conflict). By district, the number of professional pharmacists has almost doubled in Benghazi (from 83 pre-conflict to 155 post-conflict), while it has declined by two third in Misurata (from 15 pre-conflict to 5 post-conflict). While Derna District has 115 professional pharmacists, there is only one pharmacist in Sebha and no pharmacists in Al-Gebal-Alakhdar and Al-Wahat. As for other districts, limited differences were observed in the number of professional pharmacists between pre and post-conflict phases.

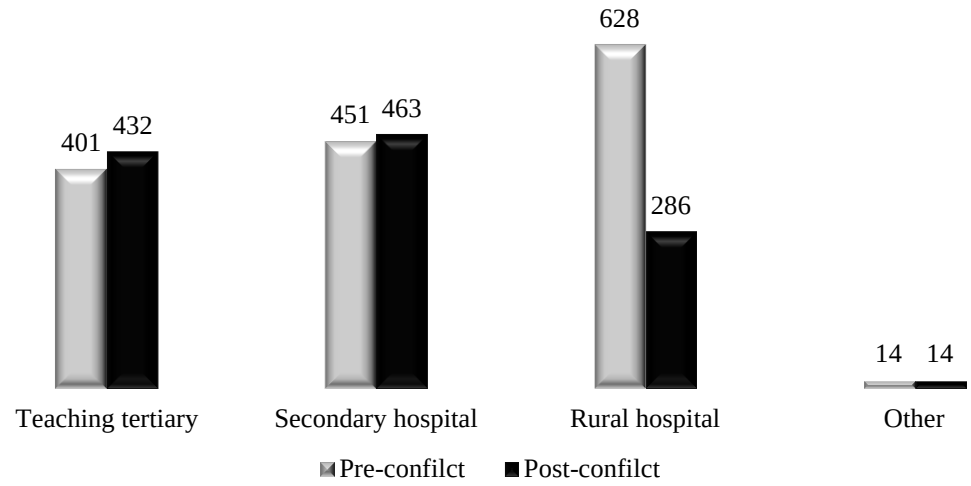
Figure 4.4 : Total number of pharmacists staff- Pre and post conflict



Results for the total number of pharmacists' assistant shows that the situation has improved post-conflict in comparison with pre-conflict where the number of assistant pharmacists has increased from 576 pre-conflict to 630 post-conflict. Unlike the number of pharmacists, the number of pharmacists' assistant has increased in rural hospitals from 123 pre-conflict to 129 post-conflict. By district, almost the same pattern for the number of professional pharmacists was observed.

On the contrary, the total number of other pharmacy technical staff has declined from 1494 pre-conflict to 1195 post-conflict. By type of hospital, it's clear that the decline was among only rural hospitals where the number of other pharmacy technical staff has declined dramatically from 628 pre-conflict to 286 post-conflict. By district, the main decline was in Derna (from 341 to 222), Al-Gebal-Alakhdar (from 120 to 0), and Sirte (from 100 to 44). Other districts showed very minor decline or almost no change in the number of other technical staff.

Figure 4.5: Total number of other pharmcolgy technical staff Pre and post-conflict by type of hospital



5. Financing

5.1 Availability of Annual Budget and Division of Budget

The questionnaire of the Libya hospital survey 2012 included questions related to availability of budgets and the amount of annual budget. Results of these questions will be presented in this chapter.

Table A.5.1 presents the percentage of hospitals that have annual budget. Overall, 94% of hospitals reported that they have annual budget. By type of hospital all teaching tertiary hospitals reported having annual budget compared with 95% of secondary hospitals and 87% of rural hospitals. By district, it is clear from the table that all hospitals in the different district have annual budget except Sebha.

The average amount of known annual budget is also presented in Table A.5.1. Overall, the average amount of annual budget was reported to be LYD 23.2 million. By type of hospital, the highest average amount of annual budget was among teaching tertiary hospitals which were more than 10 times the annual budget among rural hospitals (LYD 47.7 million versus LYD 4.4 million). By district, the highest average amount of annual budget was among Tripoli while the lowest was among Al-Kufra (LYD 95.2 million versus LYD 2.1 million).

Figure 5.1: Average annual budget by type of hospital in Million Libyan Diinar

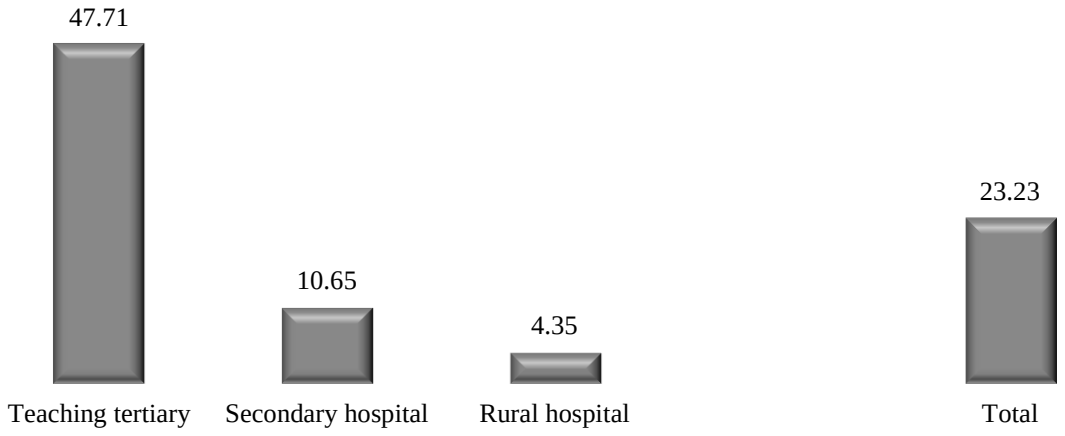


Table A.5.1 shows also the minimum and maximum ranges of annual budgets. Overall, the maximum annual budget is LYD 779 million (teaching tertiary hospital in Tripoli) while the minimum annual budget is LYD 1 million. Regarding the minimum and maximum ranges by type of hospital, data shows that the wider range was among teaching tertiary hospitals (LYD 779 million and LYD 3.3 million respectively) followed by rural hospitals (LYD 26 million and LYD 1 million respectively). By district, the wider range was in Tripoli (LYD 779 million and LYD 3.3 million respectively).

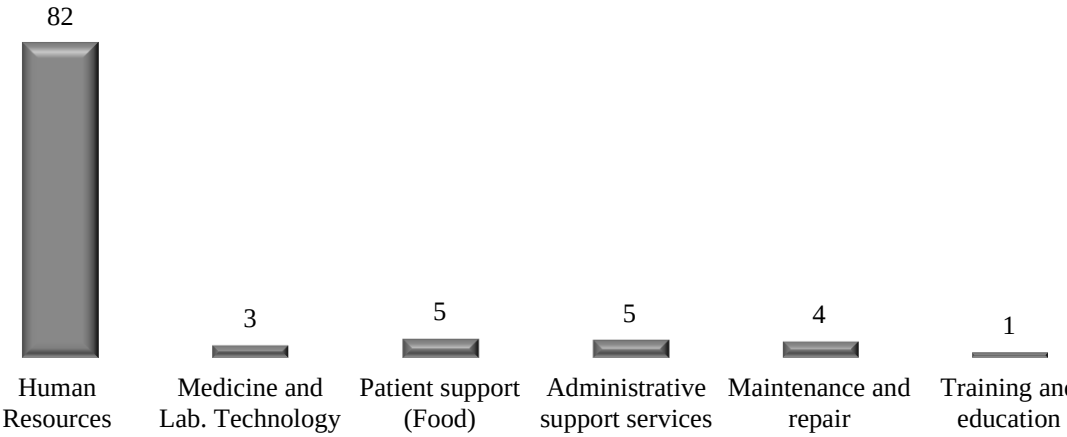
Distribution of budget among key areas of services

Hospitals with available budget were asked about the percentage of annual budget spent on human resources, medicine and lab technology, patient support, administrative support services, maintenance and repair, and training and education. Results will be presented in the following.

Table A.5.2 presents the distribution of budget among key areas. Overall, data show that 82% of the budget is spent on human resources; about 5% is spent on patient support (food),

administrative support, and maintenance and repair. Only 3% is spent on medicine and lab technology and 1% is spent on training and education.

Figure 5.2: Percentage distribution of total annual budget spent by key areas



Results varied by type of hospital. Rural hospitals were the least likely to spend budget on human resources (74%) compared with other types of hospitals. Were 94% of the budget of teaching tertiary hospital and 85% of the budget of secondary hospital were spent on human resources.

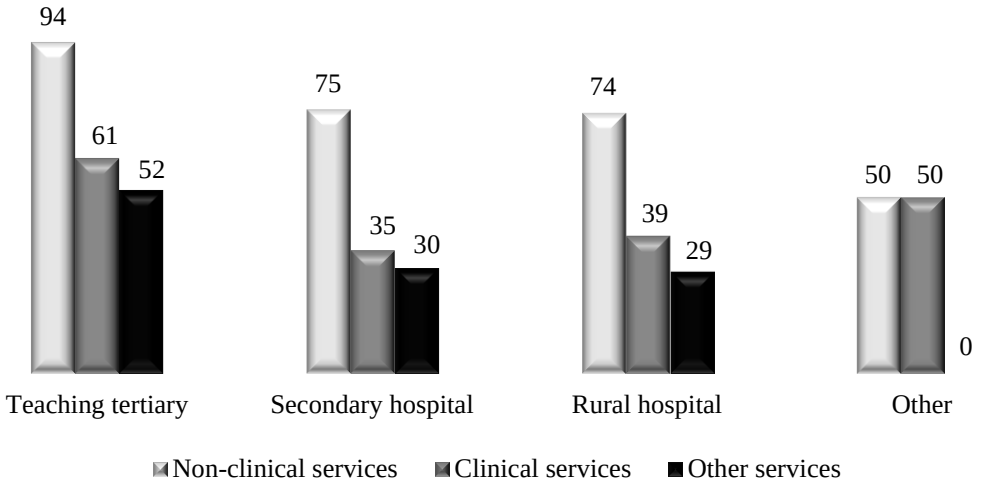
Results varied also by district. Only 51% of the budget of hospitals in Al-Gebal-Elgharbi is spent on human resources. On the contrary, all hospitals in Al-Gebal-Alakhdar, Al-Wahat, al-Kufra, Sirte, Wadi-Alshati, and Misurata have their budgets spent only on human resources. However, 22% of the budget of the hospitals in Derna is spent on medicine and laboratory technology while 12% of the budget of the hospitals in Naloot is spent on patient support. Moreover, 15% of the budget of the hospitals in Al-Gebal-Elgharbi is spent on administrative support services, while 22% of the budget of the hospitals in Morzig is spent on maintenance and repair.

5.2 Outsourcing of Services

Table A.5.3 presents the number and percentage of hospitals that finance outsource of non-clinical services, clinical services and other services. Overall, results show that 81% of hospitals finance outsource of non-clinical services with the highest percentage among teaching tertiary hospital (94%). Also, around three-quarter of secondary hospitals and rural hospitals reported that they finance outsource of non-clinical services. However, the percentage was much lower for clinical services where only 47% of hospitals reporting that they finance outsourcing of clinical services. By type of hospital, 61% of teaching tertiary hospitals reported that they finance outsourcing of clinical services compared with slightly more than one-third of secondary hospitals and rural hospitals and half of other hospitals.

Regarding financing outsourcing of other services, results showed that 37% of hospitals finance outsourcing of other services. Results by hospital type show that, more than half teaching tertiary hospitals reported that they finance outsourcing of other services compared with less than one-third of secondary hospitals and rural hospitals.

Figure 5.3:Percentage of outsourcing services by type of hospital

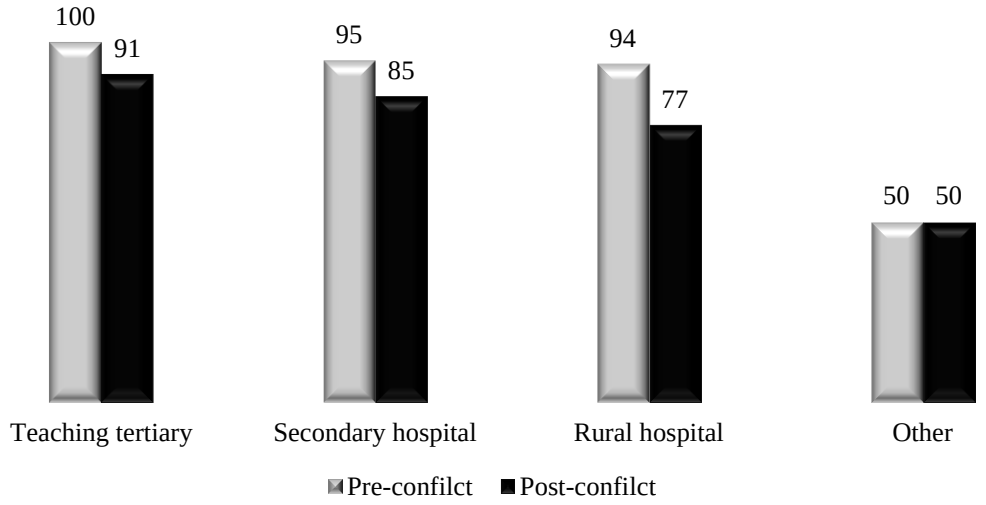


6. Pharmaceutical Sector and Drugs

Availability of drugs and medicines in hospitals is of great importance. The questionnaire of the Libya Hospital Survey 2012 included a series of questions related to the availability of pharmacy department, pharmacy outlets serving in the hospital, of the pharmacy have the budget to purchase drugs from local market, and if the pharmacy has been frequently facing shortage in drugs/supply. Results of these questions will be presented in the following.

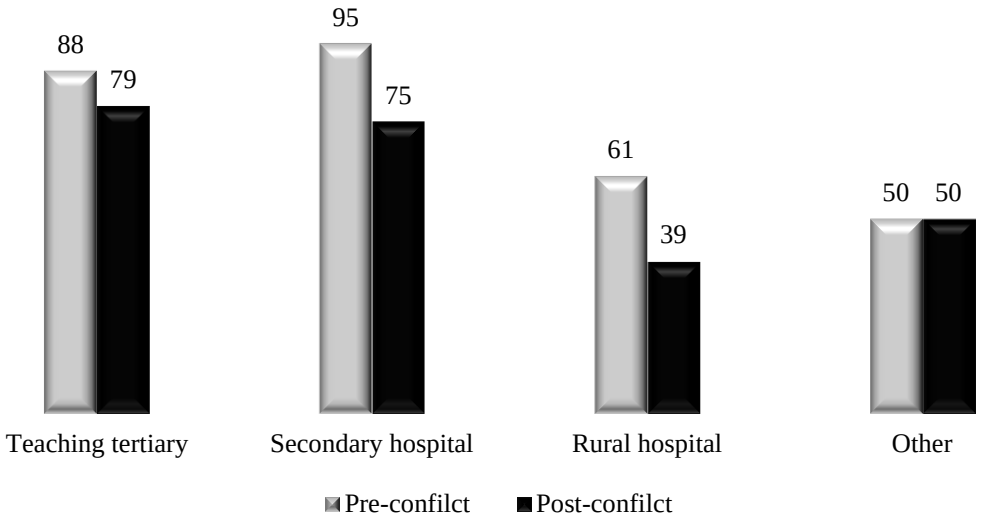
Table A.6.1 shows hospitals that have pharmacy departments and those with shortage of drugs. Overall, results showed that pre-conflict 82 out of the 86 hospitals (95%) had a pharmacy department available, however, post-conflict this number declined to 72 hospitals (84%). Looking at results by type of hospital, results show that pre-conflict the pharmacy department was available in all teaching tertiary hospitals, more than 90% of secondary hospitals and rural hospitals, and half the others hospitals. These results declined post-conflict to reach 91% of teaching tertiary hospitals, 85% of secondary hospitals, 77% of rural hospitals, while it remained the same for other hospitals. Looking at results by district, it's clear from the table that the availability of pharmacy department has declined post-conflict in 9 district in comparison with pre-conflict. In Derna, there was a pharmacy department available in all 3 hospitals in the district pre-conflict while post-conflict data show that the pharmacy department is available in only 1 hospital in the district.

Figure 6.1: Percentage of hospitals with availability of pharmacy department- Pre and post-conflict by type of hospital



During the survey, question was addressed to hospitals were asked if they have shortage in the availability of drugs. Overall, results showed that 79% of the hospitals had shortage in drugs pre-conflict, however, post-conflict the situation has improved where slightly less than two-third of hospitals had shortage in drugs. Results by type of hospitals show that pre-conflict, 95% of secondary hospitals had shortage in drugs compared with 88% of teaching tertiary hospitals, 61% of rural hospitals and half the other hospitals. Post-conflict the situation has improved especially among rural hospitals (39%). By district, the situation has much improved in Albentan (pre-conflict all hospitals had shortage in drugs while post-conflict none had). On the contrary the situation has worsen in Al-Kufra (pre-conflict half the hospitals had shortage in drugs while post-conflict all hospitals had shortage in drugs).

Figure 6.2: Percentage of hospitals with shortage of drugs- Pre and post-conflict



7. Service Delivery and Utilization

Strengthening service delivery is a key strategy to achieve the Millennium Development Goals. Ensuring availability and access to health services is one of the main functions of a health system. Such services should meet a minimum quality standard. Different terms such as access, utilization, availability and coverage are often used interchangeably to reflect on whether people are receiving the services they need. Access is a broad term with different dimensions. Comprehensive measurement of access requires a systematic assessment of physical, financial and socio-psychological access to services.

This section discus services delivery and utilization of different medical services provided by the hospitals department.

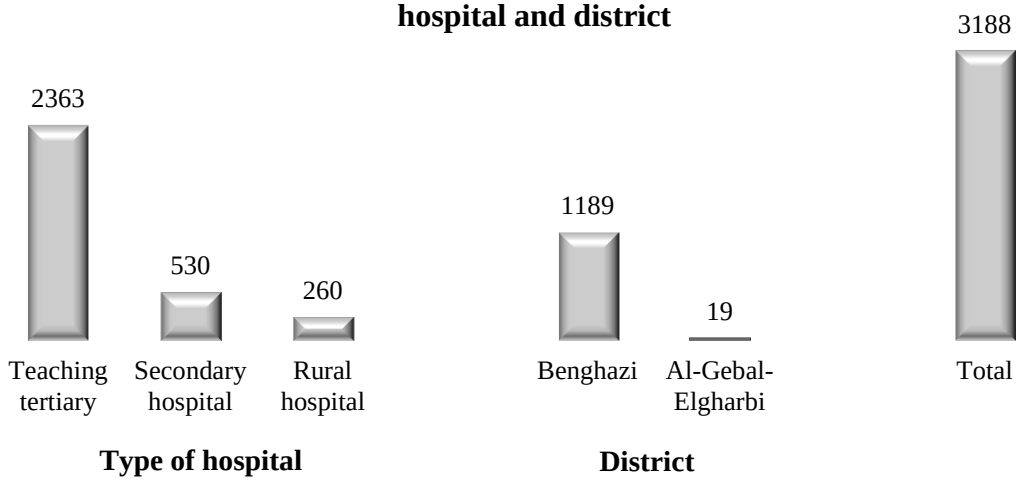
7.1 Internal Medicine

7.1.1 Infrastructure of internal medicine departments

Table A.7.1 shows number of internal medicine beds, staff availability and number of utilization of internal medicine services by type of hospitals and by district. The number of hospitals in Libya that provide internal medicine services is 83 hospitals.

The total number of internal medicine beds in Libya is 3188. More than 90% of these internal medicine beds are located in both teaching tertiary hospitals and secondary hospitals. More than two thirds of the beds are located only in 3 districts (Benghazi, Tripoli and Misurata).

Figure 7.1: Number of internal medicine beds by type of hospital and district



There is almost one quarter increase in the total number of internal medicine staff in the post-conflict phase. There is no internal medicine staff in 3 districts in the post-conflict phase compared to 4 districts during the pre-conflict phase. Almost half of the internal medicine staff is working only in 2 districts (Benghazi and Tripoli).

In general, the increase in the number of staff is reflected on the increase in the number of the outpatient visits; however there is a decrease in the number of the major procedures. There is almost 25% increase in the number of outpatient visits and around 30% decrease in the number of major procedures.

No outpatient visits were conducted in the post-conflict phase in 4 districts that have 7 hospitals in comparison to 5 districts in the pre-conflict phase. More than half of the outpatient visits were conducted only in 3 districts (Zwara, Joufara and Tripoli).

No major procedures were conducted in the post-conflict phase in 10 districts that have 30 hospitals which is the same number of district (10 districts) that have 30 hospitals in the pre-conflict phase, the only change were in Joufara and Morzig district. More than 80% of the major procedures were conducted only in 4 districts (Benghazi, Wadi Alshati, Tripoli and Zwara).

Almost all major procedures were done in both secondary and tertiary teaching hospitals. No major procedures were conducted in the post-conflict phase in all rural hospitals in comparison to 3 rural hospitals during the pre-conflict phase.

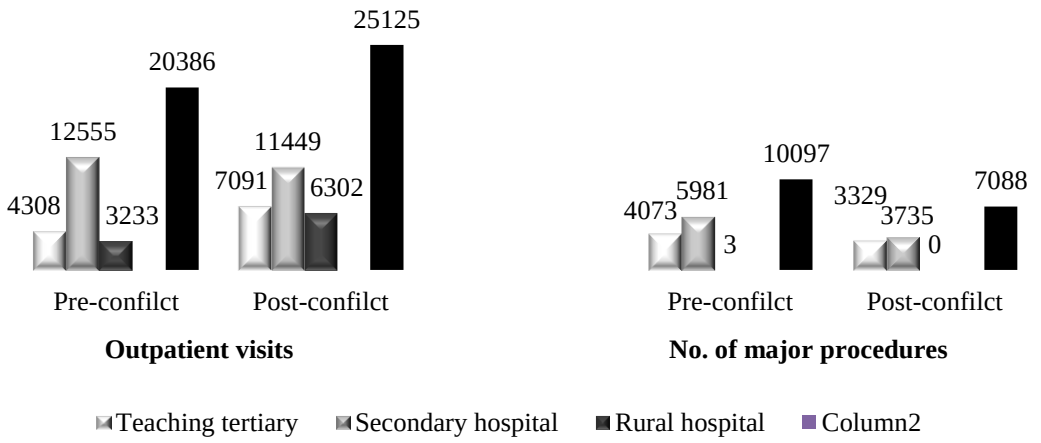
Table A.7.2.shows percentage of internal medicine services per professional staff during pre and post-conflict phases by type of hospitals and by district.

The table shows that the total percentage of the outpatient visits per professional staff is almost the same during the pre and post-conflict phases, however percentage of major procedures was significantly less during the post-conflict phase. Around 24 outpatient visits per professional staff were done during both pre and post-conflict phases. Less than 7 major procedures per professional staff were done during the post-conflict phase while it was almost 12 procedures during the pre-conflict phase.

Percentage of internal medicine services per professional staff during pre and post-conflict phases by type of hospitals shows that:

- In teaching hospitals, the outpatient visits per professional staff were generally low and slightly higher during the post-conflict than the pre-conflict phases (9.4 visits Vs 7 visits respectively). There is a decrease in the percentage of the professional staff doing major procedures during the post-conflict phase (4.4 major procedures) in relation to the pre-conflict phase (6.6 major procedures).
- In secondary hospitals, the outpatient visits per professional staff were generally high and this percentage is less during the post-conflict phase than during the pre-conflict phase (64 visits Vs 74 visits respectively). There is also a decrease in the percentage of the professional staff doing major procedures during the post-conflict phase (21 major procedures) in relation to the pre-conflict phase (35 major procedures).
- In rural hospitals, the outpatient visits per professional staff were generally high and almost equal during both pre and post-conflict phases (94.0 visits vs 94.6 visits respectively) there were no major procedures conducted in the rural hospitals.
- In the "other" hospitals, neither outpatient visits nor major procedures were recorded.

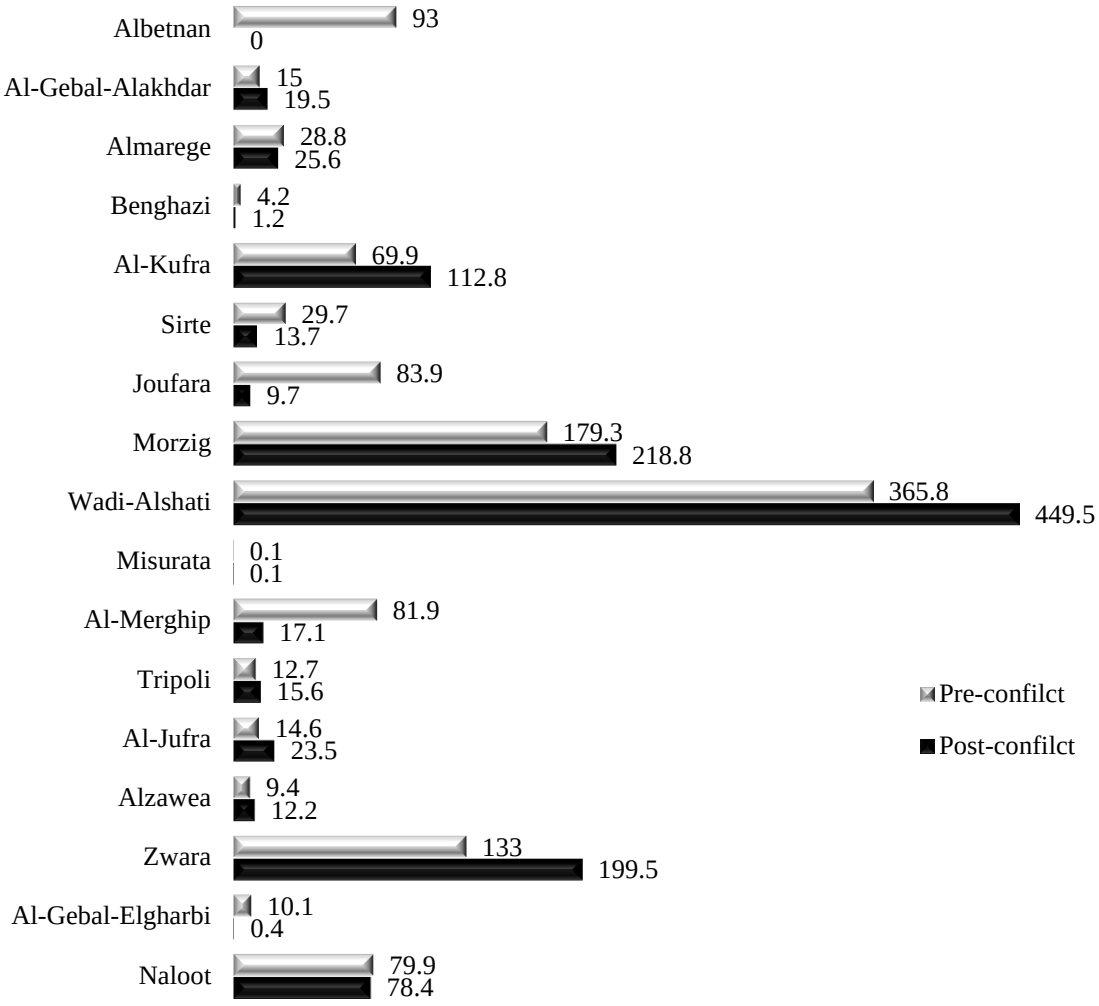
Figure 7.2: Number of outpatient visits and major procedures by type of hospital and district



Percentage of internal medicine services per professional staff during pre and post-conflict phases by districts shows that:

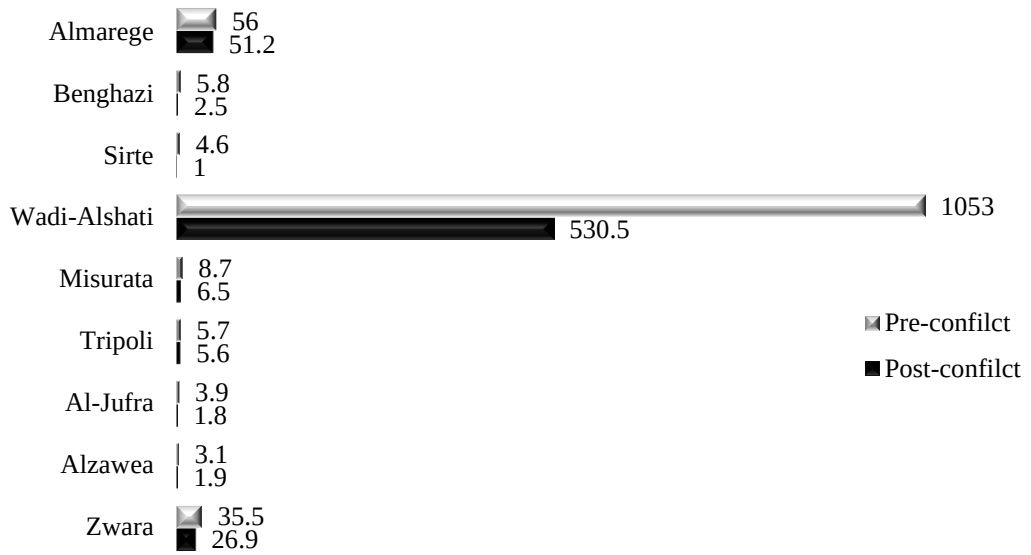
- Figure 7.3 shows that the percentage of outpatient visits per professional staff during the post-conflict phase is highest in Wadi Alshati (366 visits), Morzig (179 visits) and Zwara (133 visits). However this percentage decreased significantly in the previously mentioned three districts during the post-conflict phase in relation to the pre-conflict one. Percentage of outpatient visits per professional staff during the post-conflict phase is significantly law in Misurata, Benghazi, Alzawea, Al-Gebal Elgharbi and Tripoli. This percentage of the outpatient visits per professional staff during the post-conflict phase is zero in 6 districts. Surprisingly enough, this percentage was zero during the pre-conflict phase in Albetnan district and becomes 93 during the post-conflict phase.

Figure 7.3: Outpatient visits in internal medicine per professional staff by district



- Figure 7.4 shows that the percentage of major procedures per professional staff during the post-conflict phase is highest in Wadi Alshati (531 procedures), Almarege (51 procedures) and Zwara (27 procedures). Percentage of major procedures per professional staff during the post-conflict phase is zero in almost all other districts.

Figure 7.4: Major procedures in internal medicine per professional staff by district



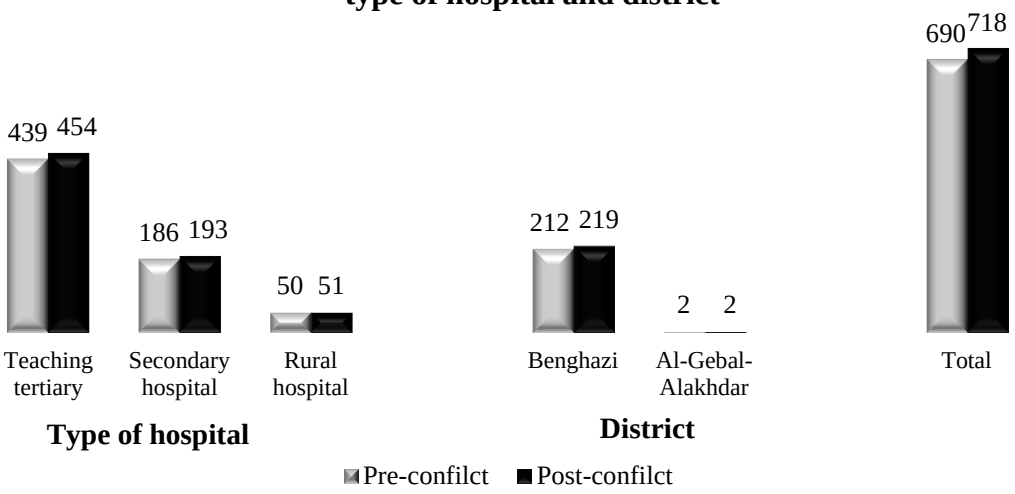
There is minimal increase in the total number of medical units related services staff in the post-conflict phase. The number of the staff during the pre-conflict phase was 690 and during the post-conflict phase was 718. There is no staff in 5 districts in the post-conflict phase compared to 6 districts during the pre-conflict phase. Slightly less than half of medical units' related services staff is working only in 2 districts (Benghazi and Zwara).

In spite of the minimal increase in the number of staff, there is a significant increase in the number of the outpatient visits; however there is a decrease in the number of the major procedures. There is more than 4 times increase in the number of outpatient visits during the post-conflict phase.

More than 80% of the outpatient visits were done teaching tertiary hospitals in only and most of the rest were done in Secondary hospitals.

No outpatient visits were conducted neither during the pre nor the post-conflict phase in 10 districts that have 32 hospitals. Four out of five outpatient visits were done in only Benghazi and Joufara. The number of the outpatient visits significantly increased in the previously mentioned 2 districts.

Figure 7.5: Number of staff in medical units related beds by type of hospital and district



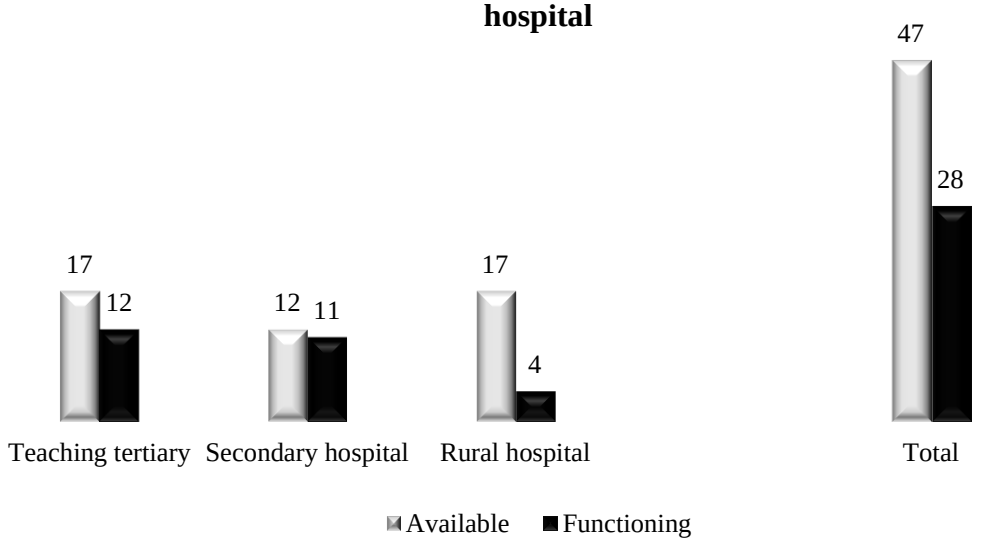
7.1.2 Availability of equipment of internal medicine departments

Table A.7.4 shows numbers of hospitals that have basic internal medicine department equipment and their functional state by hospital type.

The table shows that no single hospital type has all the basic internal medicine department equipment, also not all the available equipment is functioning.

Measuring tape-height board/stadio-meter are available in 47 hospitals of the 86 hospitals and functioning in only 28 hospitals. Out of the 33 teaching tertiary hospitals, measuring tape-height board/stadio-meter are available in half of them (17 hospitals) and functioning only in 12 hospitals. Out of the 20 secondary hospitals, measuring tape-height board/stadio-meter is available in 60% of them (12 hospitals) and functioning only in 11 hospitals. Out of the 31 rural hospitals, measuring tape-height board/stadio-meter are available in 17 hospitals and functioning only in 4 hospitals. Measuring tape-height board/stadio-meter are available and functioning in one hospital out of the 2 other hospitals.

Figure 7.6: Number of hospitals with available and function of measuring tape-height board/stadiometre by type of hospital



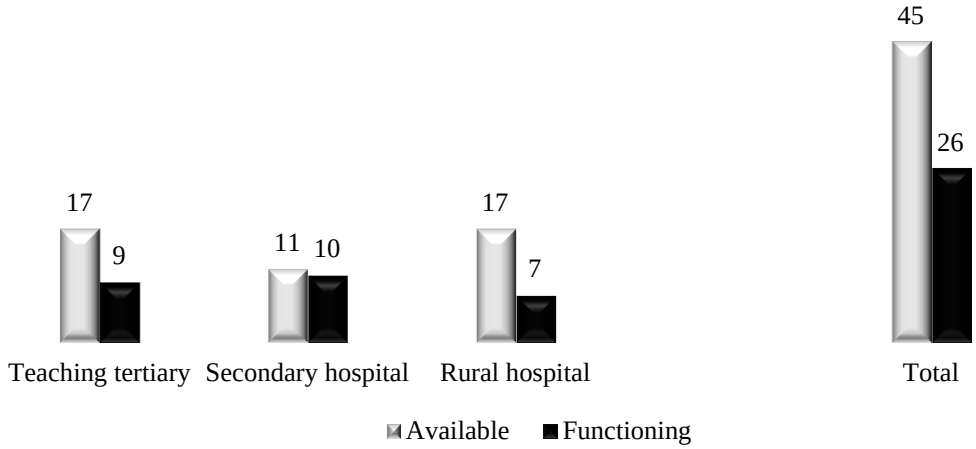
Peak flow meter is available in 40 hospitals of the 86 hospitals and functioning in only 23 hospitals. Out of the 33 teaching tertiary hospitals, Peak flow meter is available in half of them (16 hospitals) and functioning only in 10 hospitals. Out of the 20 secondary hospitals, peak flow meter is available in 50% of them (10 hospitals) and functioning in the 10 hospitals. Out of the 31 rural hospitals, Peak flow meter is available in less than half of them (14 hospitals) and functioning only in 3 hospitals. Peak flow meter is not available in any of the 2 other hospitals.

Number of hospitals with available and function of peak flow meters

Type of hospitals	Available	Functioning
Teaching tertiary	16	10
Secondary hospital	10	10
Rural hospital	14	3
Other	0	0
Total	40	23

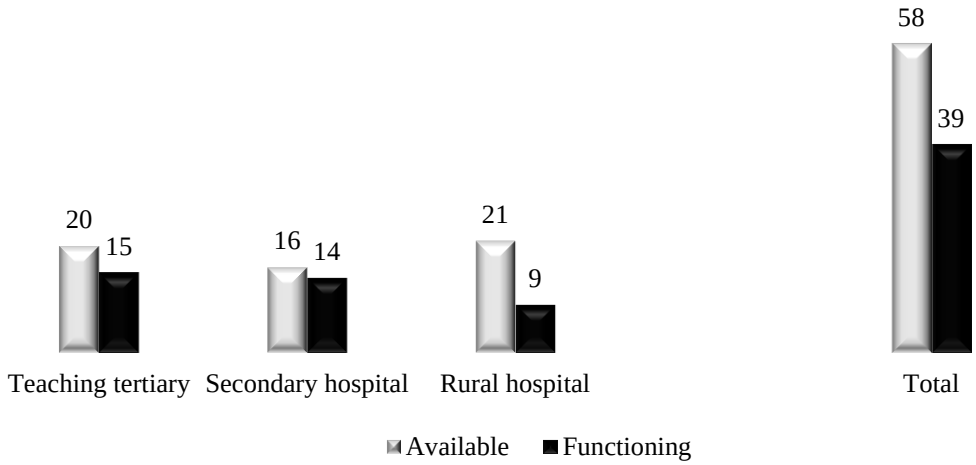
Spacers for inhalers are available in more than half (45 hospitals) of the 86 hospitals and functioning in 26 hospitals. Out of the 33 teaching tertiary hospitals, spacers for inhalers are available in half of them (17 hospitals) and functioning only in 9 hospitals. Out of the 20 secondary hospitals, spacers for inhalers are available in 55% of them (11 hospitals) and functioning only in 10 hospitals. Out of the 31 rural hospitals, spacers for inhalers are available in more than half of them (17 hospitals) and functioning only in 7 hospitals. Spacers for inhalers are not available in any of the 2 other hospitals.

Figure 7.7: Number of hospitals with available and function of spacers for inhalers by type of hospital



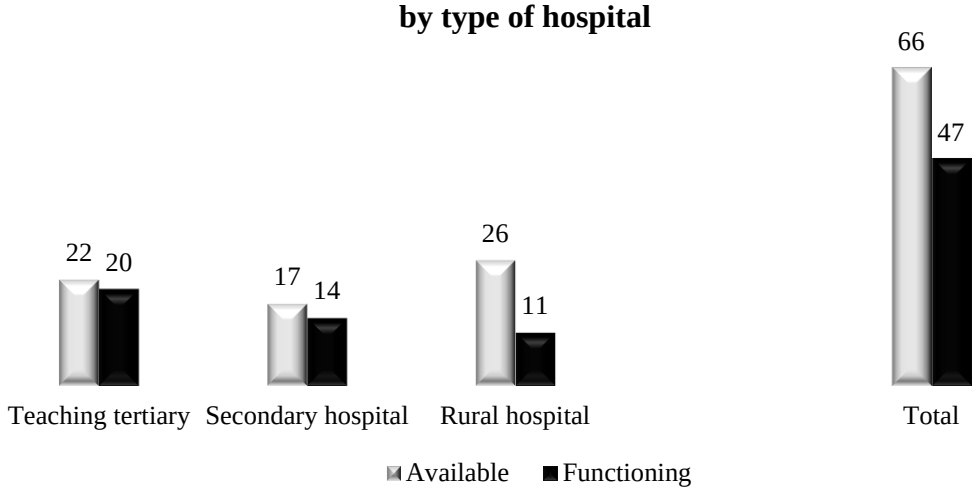
Adult weighing scales are available in more than two thirds (58 hospitals) of the 86 hospitals and functioning in only 39 hospitals. Out of the 33 teaching tertiary hospitals, adult weighing scales are available in more than 60% of them (20 hospitals) and functioning only in 15 hospitals. Out of the 20 secondary hospitals, Adult weighing scales are available in 80% of them (16 hospitals) and functioning only in 14 hospitals. Out of the 31 rural hospitals, Adult weighing scales are available in more than two thirds of them (21 hospitals) and functioning only in 9 hospitals. Adult weighing scales are available and functioning in one hospital out of the 2 other hospitals.

Figure 7.8: Number of hospitals with available and function of adult weighing scale by type of hospital



Stethoscope, thermometer and blood pressure apparatus (may be digital or manual sphygmomanometer with stethoscope) are available in more than three quarters (66 hospitals) of the 86 hospitals and functioning in only 47 hospitals. Out of the 33 teaching tertiary hospitals, Stethoscope, thermometer and blood pressure apparatus are available in two thirds of them (22 hospitals) and functioning only in 20 hospitals. Out of the 20 secondary hospitals, Stethoscope, thermometer and blood pressure apparatus are available in 85% of them (17 hospitals) and functioning only in 14 hospitals. Out of the 31 rural hospitals, Stethoscope, thermometer and blood pressure apparatus are available in more than three quarters of them (26 hospitals) and functioning only in 11 hospitals. Stethoscope, thermometer and blood pressure apparatus are available and functioning in the 2 other hospitals.

Figure 7.9: Number of hospitals with available and function of stethoscope, thermometer and blood pressure apparatus by type of hospital



7.1.3 Problems facing of internal medicine departments

Out of scale of five, heads of internal medicine departments were asked to indicate their opinions about the degree of severity of the problems they are facing at the time of the survey (where five indicates a very severe problem and one indicates a very mild problem). They were asked about their opinions in the severity of the problem regarding the following:

1. Human resources,
2. Technical equipment,
3. Budget allocation,
4. Number of offices administration/personnel staff/premises,
5. Drugs and other consumable supplies.

A mean score for these items was calculated ranged from 1 to 5. If the mean score close to 5 mean that there is a sever problem and if less than three mean that there is a mild problem.

Table A.7.5 shows the mean score of the opinion of the internal medicine departments' heads regarding of severity of the problems they are facing at the time of the survey.

The table shows that the mean score of the degree of each of the above mentioned problems is between moderate and severe in the opinion of the heads of the internal medicine departments of all hospitals

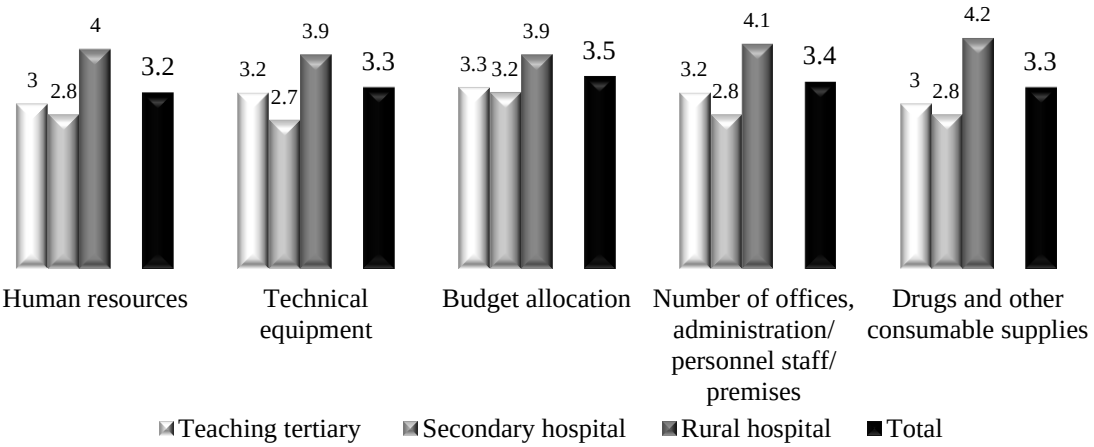
The heads of the internal medicine departments of the tertiary teaching hospitals indicated that – in their opinion - they are facing moderate problems regarding all of the above categories. The degree of severity of the above mentioned problems is almost similar to the mean score of all hospitals.

Similarly, the heads of the internal medicine departments of the secondary hospitals indicated that– in their opinion-they are facing moderate problems. This degree of severity of the above mentioned problems is generally less than the mean score of all hospitals.

The problems are severe in the opinion of the heads of the internal medicine departments of the rural hospitals, and are much more than the mean score of all hospitals.

The degree of each of the above mentioned problems is considered mild in the opinion of the heads of the internal medicine departments of the "other" hospitals. This degree of severity of each of the above mentioned problems is much less than the mean score of all hospitals.

Figure 7.10: Mean score of severity problem of facing internal medicine department services per to problem by type of hospital



From the previous results one can conclude that show that, the total number of internal medicine professional and internal medicine supportive staff increased post-conflict. The outpatient visits increased post-conflict, while the number of major procedures decreased post conflict. However, there are severe shortages in the basic equipment that are either available or functional in internal medicine departments. This shortage affects all hospitals but it is very critical especially in rural hospitals.

7.2 General surgery

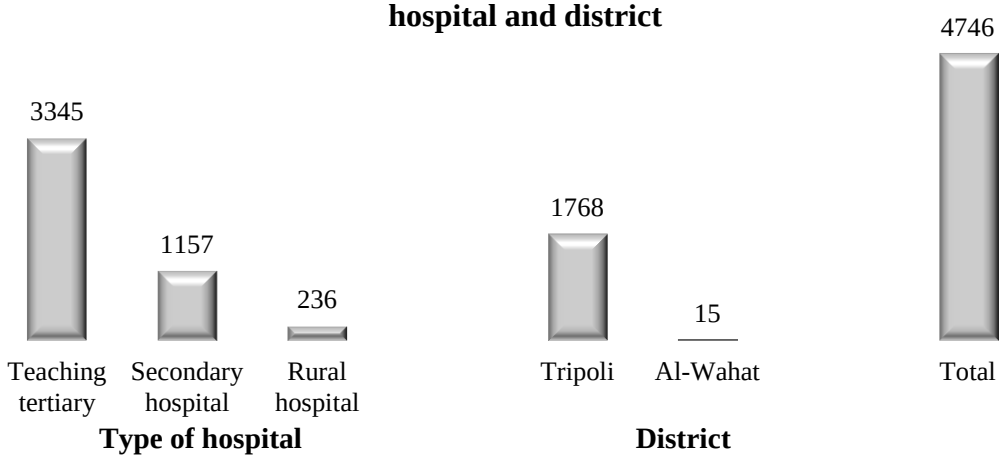
The questionnaire of general surgery department included set of questions about, infrastructure of the department (number of beds, outpatients visits,….., availability of equipment necessary to provide general surgery services).

7.2.1 Infrastructure of general surgery departments

Table A.7.6 shows the current number of general surgery beds. It also shows pre and post-conflict staff availability and general surgery services utilization by type of hospitals and by district.

Number of the hospitals that provide general surgery service in Libya is 85 hospitals, where the hospital in Sebha districts does not provide general surgery service.

Figure 7.11: Number of general surgery beds by type of hospital and district



The total number of general surgery beds in Libya is 4746. Almost 95% of these general surgery beds is located in both teaching tertiary hospitals and secondary hospitals. More than half of the

beds are located only in 2 districts (Tripoli and Al- Benghazi).

There is more than 17% increase in the total number of general surgery staff in the post-conflict phase. This increase is slightly more than 21% in the professional staff and around 13% in the other staff categories. Almost half of the general surgery staff is working only in Tripoli and Benghazi.

In general, the increase in the number of the professional staff is reflected on the increase in the number of outpatient visits and admissions; however, there is decrease in the number of operation sessions. There is almost 25% increase in the number of outpatient visits and there is also increase by more than 45% in the number of admissions. However, the number of operation sessions decreased by almost 40%.

During the post-conflict phase, almost 90% of the operations sessions were conducted in both Secondary and teaching tertiary hospitals and remaining 10% were conducted in the rural hospitals. While during the pre-conflict phase, almost 95% of the operations sessions were conducted in both Secondary and teaching tertiary hospitals and remaining 5% were conducted in the rural hospitals.

No operation sessions were conducted during the post-conflict phase in 9 districts that have 24 hospitals. Almost two thirds of the operation sessions were conducted only in 3 districts (Tripoli, Mozig and Al- Benghazi). However, the number of the operation sessions was decreased significantly in the previous three Districts during the post-conflict phase compared to the pre-conflict one.

During the post-conflict phase, almost 80% of the admissions were conducted in both Secondary and teaching tertiary hospitals and remaining 20% were conducted in the rural hospitals. While during the pre-conflict phase, more than 90% of the operations sessions were conducted in both Secondary and tertiary teaching hospitals and remaining which is less than 10% were conducted in the rural hospitals.

No admissions were reported in 5 Districts both in the pre and post-conflict phases. Almost two thirds of the admissions were reported only in 3 Districts (Joufara, Tripoli and Benghazi). During the post-conflict phase, number of admissions increased significantly compared to the pre-conflict phase in Albetnan, Benghazi, Sirt and Joufara.

During the post-conflict phase, almost three quarters of the outpatient visits were conducted in both secondary and teaching tertiary hospitals and remaining one quarter was conducted in the rural hospitals. While during the pre-conflict phase, more than 82% of the outpatient visits were conducted in both Secondary and tertiary teaching hospitals and remaining which is less than 18% were conducted in the rural hospitals.

No outpatient visits were conducted in the post-conflict phase in 4 districts that have 7 hospitals in comparison to 7 districts in the pre-conflict phase. More than half of the outpatient visits were conducted only in 3 districts (Zwara, Joufara and Tripoli). During the post-conflict phase, number of outpatient visits increased significantly compared to the pre-conflict phase in Albetnan, Benghazi, Sirt, Joufara and Naloot.

Table A.7.7.shows percentage of general surgery services per professional staff during pre and post-conflict phases by type of hospitals and by district.

The table shows that the total percentage of the operation sessions per professional staff was less by 50% during the post-conflict than the pre-conflict phase. This percentage was reduced in all hospital types. This percentage was 3.6 operation sessions per professional staff were conducted during the pre-conflict phase in comparison to 1.6 sessions during the post-conflict phase.

The table also shows that the total percentage of the admissions per professional staff increased by 1% during the post-conflict than the pre-conflict phase; it was 5.3 admissions conducted during the pre-conflict phase in comparison to 6.4 sessions during the post-conflict phase. This increase in the

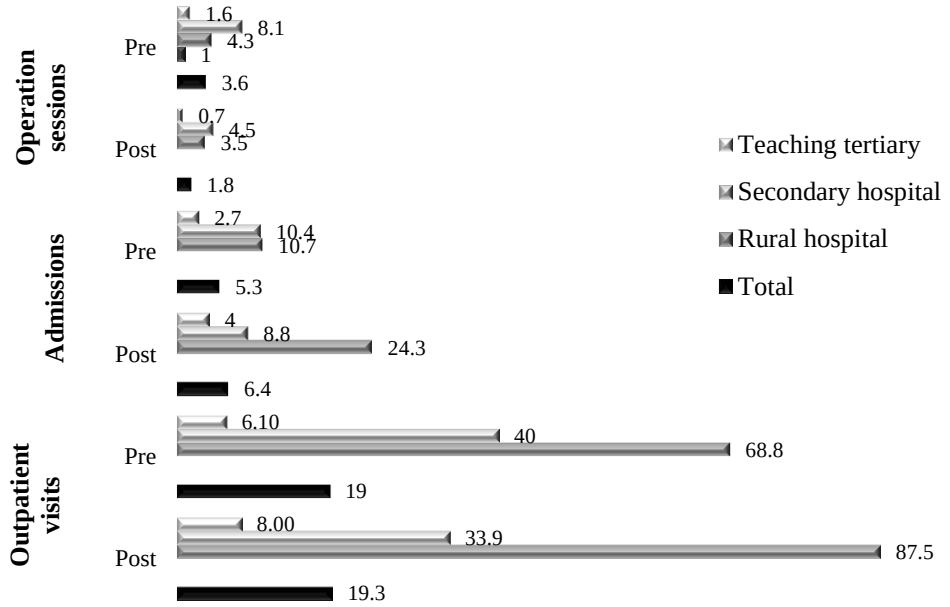
percentage was significant in the rural hospitals (from 10.4 to 24.3), while it was less in the teaching tertiary hospitals (only from 2.7 to 4.0).

The table shows also that the total percentage of the outpatient visits per professional staff was almost the same during the pre and post-conflict phases (19 visits). There were increases in the percentage during the post-conflict phase in the rural hospitals. The percentage was only 2% in the teaching tertiary hospitals, while it decreases in secondary hospitals.

Percentage of general surgery services per professional staff during pre and post-conflict phases by type of hospitals shows that:

- In teaching hospitals, the outpatient visits per professional staff were generally low and slightly higher during the post-conflict than the pre-conflict phases (8 visits Vs 6 visits respectively). There is a decrease in the percentage of the professional staff doing operation sessions during the post-conflict phase (0.7 sessions) in relation to the pre-conflict phase (1.6 sessions). The admissions per professional staff were generally low and slightly higher during the post-conflict than the pre-conflict phases (4 admissions Vs 3 admissions respectively).
- In secondary hospitals, the outpatient visits per professional staff were generally high and this percentage is less during the post-conflict phase than during the pre-conflict phase (34 visits Vs 40 visits respectively). There is also a decrease in the percentage of the professional staff doing operation sessions during the post-conflict phase (4.5 sessions) in relation to the pre-conflict phase (8 sessions). The admissions per professional staff slightly lower during the post-conflict than the pre-conflict phases (9 admissions Vs 10 admissions respectively).

Figure 7.12: Percentage of general surgery services per professional staff by type of hospital



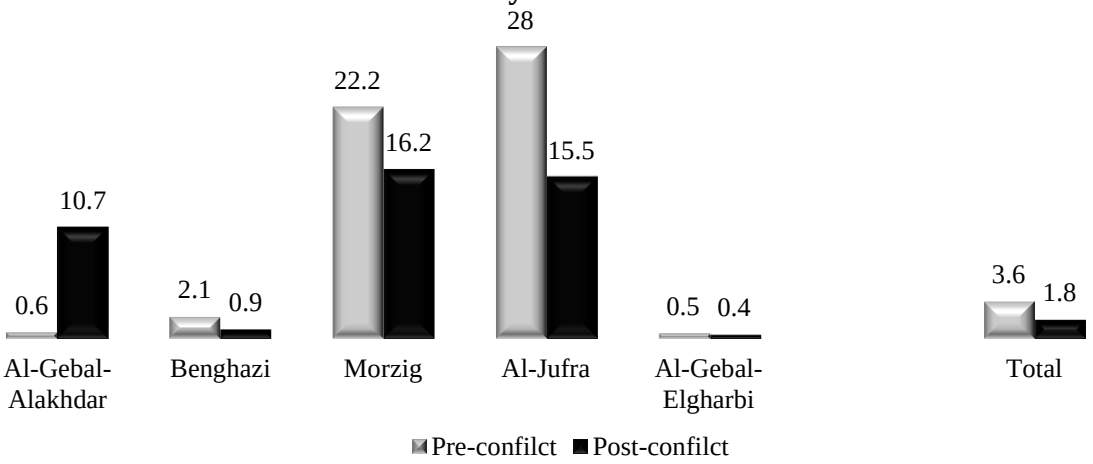
- In rural hospitals, the outpatient visits per professional staff were generally high and higher during the post-conflict than the pre-conflict phases (88 visits Vs 69 visits respectively). There is a decrease in the percentage of the professional staff doing operation sessions during the post-conflict phase (3.7 sessions) in relation to the pre-conflict phase (4.3 sessions). The admissions per professional staff were generally high and it was higher during the post-conflict than the pre-conflict phases (24 admissions Vs 11 admissions respectively).
- In the "other" hospitals, the outpatient visits per professional staff were generally high and higher during the post-conflict than the pre-conflict phases (94 visits Vs 73 visits

respectively). There were no operation sessions conducted during the pre-conflict phase, while the percentage of the professional staff doing operation sessions during the post-conflict phase was 1.7. No admissions were reported during both pre and post-conflict phases.

Percentage of general surgery services per professional staff during pre and post-conflict phases by districts shows that:

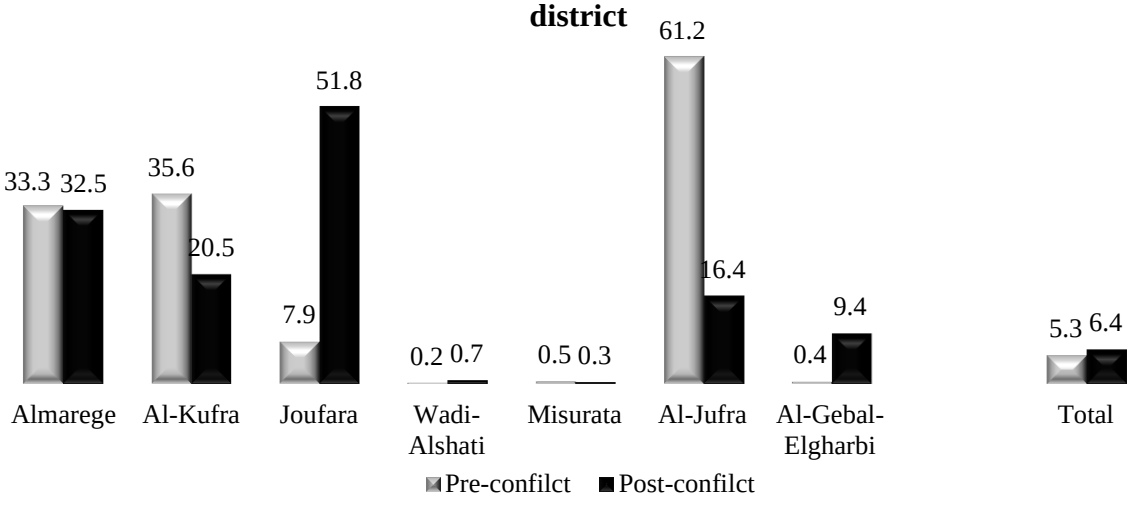
- Percentage of operation sessions per professional staff during the post-conflict phase is highest in Morzig (16 sessions), Al-Jufra (15.5 sessions) and Almarege (12.5 procedures). Percentage of operation sessions per professional staff during the post-conflict phase is zero in 9 districts.

Figure 7.13: Percentage of operation sessions per professional staff by district



- Percentage of admissions per professional staff during the post-conflict phase is highest in Joufara (52 admissions) and Almarege (33 admissions). This percentage of the admissions per professional staff during the post-conflict phase is zero in 5 districts. Percentage of admissions per professional staff during the post-conflict phase is significantly law in most of the other districts. Surprisingly enough, this percentage was zero during the pre-conflict phase in Albetnan district and becomes 13 during the post-conflict phase.

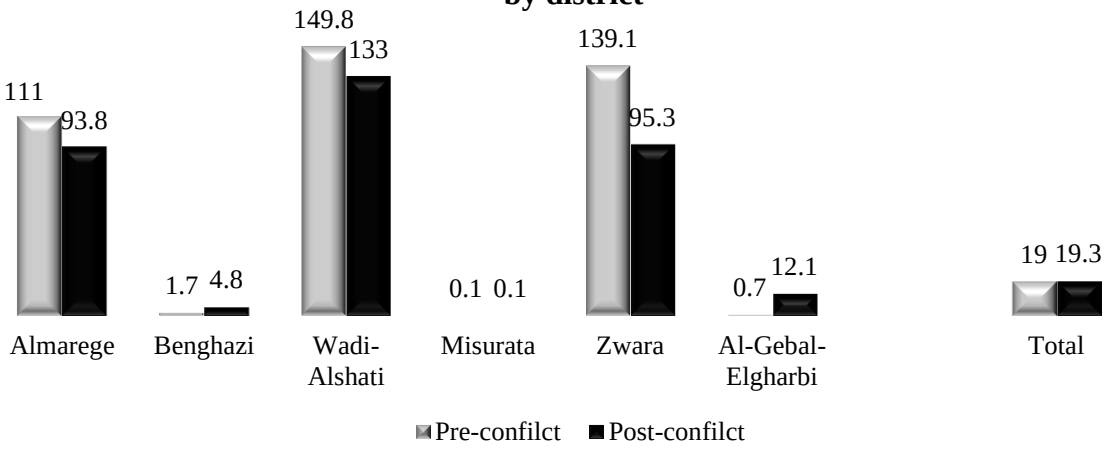
Figure 7.14: Percentage of admissions per professional staff by district



- Percentage of outpatient visits per professional staff during the post-conflict phase is highest in Wadi Alshati (133 visits), Zwara (95 visits) and Almarege (94 visits). However this percentage decreased significantly in the previously mentioned three districts during the post-conflict phase compare to the pre-conflict one. Percentage of outpatient visits per

professional staff during the post-conflict phase is significantly law in Misurata and Benghazi. This percentage of the outpatient visits per professional staff during the post-conflict phase is zero in 6 districts. Surprisingly enough, this percentage was zero during the pre-conflict phase in Albetnan district and becomes 52 during the post-conflict phase.

Figure 7.15: Percentage of outpatient visits per professional staff by district



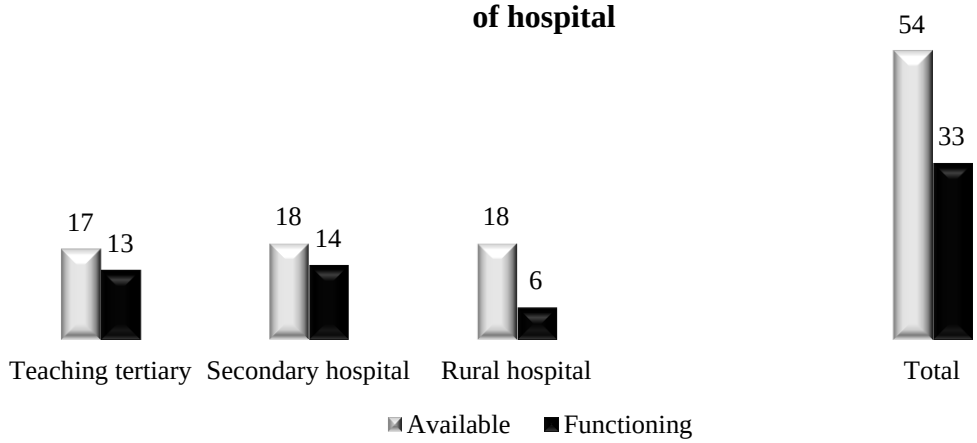
7.2.2 Availability of equipment of general surgery departments

Table A.7.8 shows numbers of hospitals that have basic general surgery department equipment and their functional state by hospital type.

The table shows that no single hospital type has all the basic general surgery department equipment, also not all the available equipment is functioning.

Out of 86 hospitals, less than two thirds of them (54 hospitals) have self-inflating bag and mask adults and pediatric with only mask 33 of them are functioning. Out of the 33 teaching tertiary hospitals, the self-inflating bag and adult and pediatric is available in almost half of them (17 hospitals) and only in 13 hospitals are functioning. Out of the 20 secondary hospitals, the self-inflating bag and adults and pediatric mask is available in 90% of them (18 hospitals) and are functioning in only 14 hospitals. Out of the 31 rural hospitals, the self-inflating bag and adults and pediatric mask is available in less than60% of them of them (18 hospitals) and functioning only in 6 hospitals. The self-inflating bag and mask adult and pediatric is available and not functioning in one hospital out of the 2 other hospitals.

Figure 7.16: Number of hospitals with available and function of self-inflating bag and mask- adult and pediatrics by type of hospital



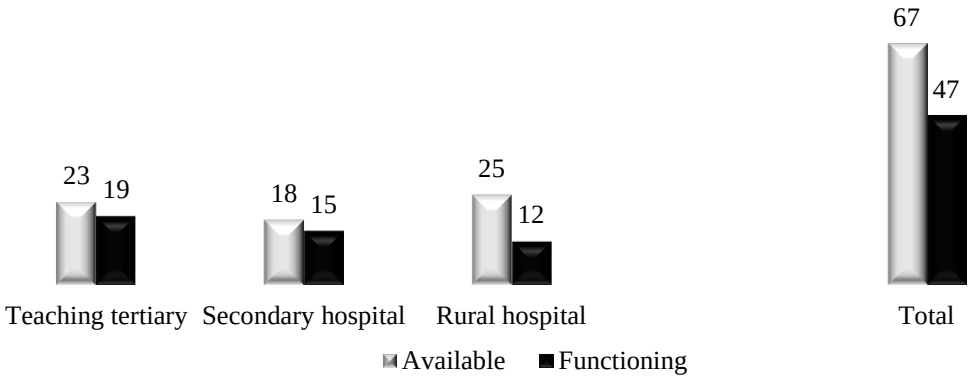
More than three quarters of the 86 hospitals (66 hospitals) have needle holders, stitches and clips removal sets with only 44 of them are functioning. Out of the 33 teaching tertiary hospitals, the needle holders, stitches and clips removal sets are available in two thirds of them (22 hospitals) and functioning only in 18 hospitals. Out of the 20 secondary hospitals, the needle holders, stitches and clips removal sets are available in 90% of them (18 hospitals) and functioning only in 15 hospitals. Out of the 31 rural hospitals, the needle holders, stitches and clips removal sets are available in almost 80% of them of them (25 hospitals) and functioning only in 10 hospitals. The needle holders, stitches and clips removal sets are available and functioning in one hospital out of the 2 other hospitals.

Number of hospitals with available and function off needle holders, stitches and clips removal sets

Type of hospitals	Available	Functioning
Teaching tertiary	22	18
Secondary hospital	18	15
Rural hospital	25	10
Other	1	1
Total	66	44

More than three quarters of the 86 hospitals (67 hospitals) have scalpel handle with blades with only 47 of them are functioning. Out of the 33 teaching tertiary hospitals, scalpel handle with blades are available in almost 70% of them (23hospitals) and functioning only in 19 hospitals. Out of the 20 secondary hospitals, the scalpel handle with blades are available in 90% of them (18 hospitals) and functioning only in 15 hospitals. Out of the 31 rural hospitals, the scalpel handle with blades are available in almost 80% of them of them (25 hospitals) and functioning only in 12 hospitals. The scalpel handle with blades are available and functioning in one hospital out of the 2 other hospitals.

Figure 7.17: Number of hospitals with available and function of scalpels, handle with blades by type of hospital



Skin and soft tissue retractors are available in two thirds of the 86 hospitals (58 hospitals) with only 34 of them are functioning. Out of the 33 teaching tertiary hospitals, skin and soft tissue retractors are available in two thirds of them (22 hospitals) and functioning only in 16 hospitals. Out of the 20 secondary hospitals, the skin and soft tissue retractors are available in 85%of them (17 hospitals) and functioning only in 14 hospitals. Out of the 31 rural hospitals, the skin and soft tissue retractors are available in almost 58% of them (18 hospitals) and functioning only in 4 hospitals. Skin and soft tissue retractors are available and not functioning in one hospital out of the 2 other hospitals.

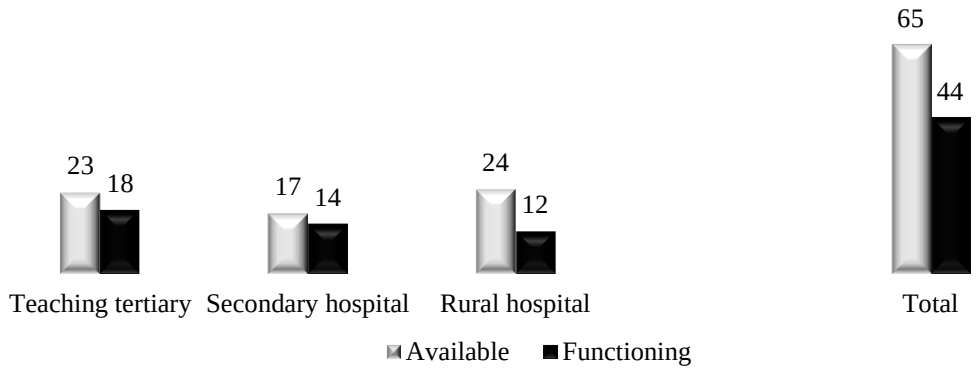
Number of hospitals with available and function of skin, soft tissue and lang. Retractor

Type of hospitals	Available	Functioning
Teaching tertiary	22	16
Secondary hospital	17	14
Rural hospital	18	14
Other	1	0
Total	58	34

Different surgical and tissue scissors are available in almost three quarters (65 hospitals) of the 86 hospitals and functioning in 44 hospitals. Out of the 33 teaching tertiary hospitals, the surgical and tissue scissors are available in almost 70% of them (23 hospitals) and functioning only in 18 hospitals. Out of the 20 secondary hospitals, the surgical and tissue scissors are available in 85% of them (17 hospitals) and functioning only in 14 hospitals. Out of the 31 rural hospitals, the surgical and tissue scissors are available in more than three quarters of them (24 hospitals) and functioning

only in 12 hospitals. Surgical and tissue scissors are available and not functioning in one hospital out of the 2 other hospitals.

Figure 7.18: Number of hospitals with available and function of different surgical and tissue scissors by type of hospital



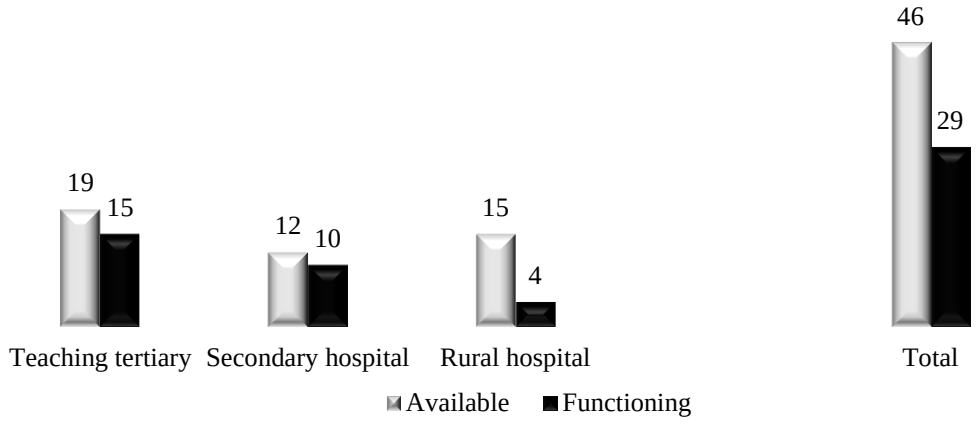
Urinary catheter, naso-gastric tubes (10 – 16G) and chest tubes are available in almost three quarters (63 hospitals) of the 86 hospitals and functioning in 44 hospitals. Out of the 33 teaching tertiary hospitals, urinary catheter, naso-gastric tubes (10 – 16G) and chest tubes are available in more than 70% of them (24 hospitals) and functioning only in 19 hospitals. Out of the 20 secondary hospitals, urinary catheter, naso-gastric tubes (10 – 16G) and chest tubes are available in 90% of them (18 hospitals) and functioning only in 15 hospitals. Out of the 31 rural hospitals, urinary catheter, naso-gastric tubes (10 – 16G) and chest tubes are available in almost two thirds of them (20 hospitals) and functioning only in 9 hospitals. Urinary catheter, naso-gastric tubes (10 – 16G) and chest tubes are available and functioning in one hospital out of the 2 other hospitals.

Number of hospitals with available and function of urinary catheters, Nasog-astric tube (10-16G) and chest tubes

Type of hospitals	Available	Functioning
Teaching tertiary	24	19
Secondary hospital	18	15
Rural hospital	20	9
Other	1	1
Total	63	44

Complete rectal tray and tourniquet are available in more than half (46 hospitals) of the 86 hospitals and functioning in 29 hospitals. Out of the 33 teaching tertiary hospitals, complete rectal tray and tourniquet are available in less than 60% of them (19 hospitals) and functioning only in 15 hospitals. Out of the 20 secondary hospitals, complete rectal tray and tourniquet are available in 60% of them (12 hospitals) and functioning only in 10 hospitals. Out of the 31 rural hospitals, complete rectal tray and tourniquet are available in less than half of them (15 hospitals) and functioning only in 4 hospitals. Complete rectal tray and tourniquet are not available in any of the 2 other hospitals.

Figure 7.19: Number of hospitals with available and function of complete rectal tray, tourniquet by type of hospital



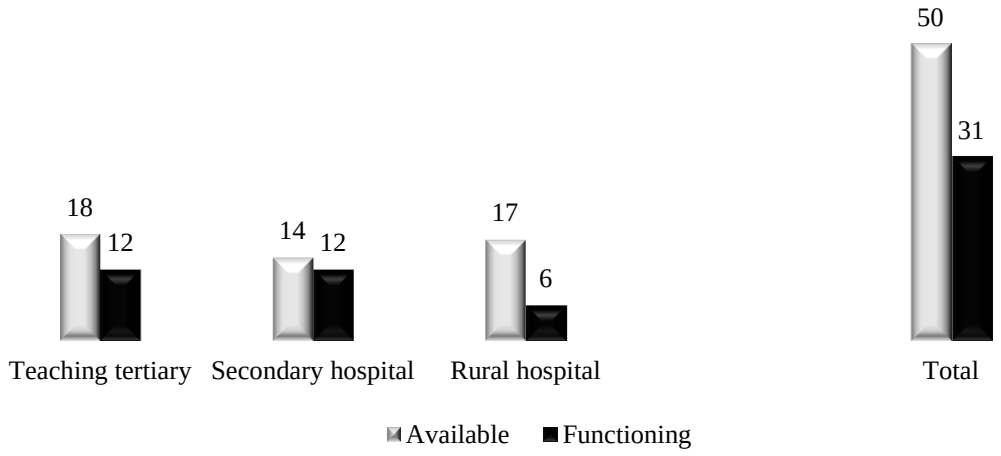
Suction apparatus (manual or electric) is available in more than three quarters (66 hospitals) of the 86 hospitals and functioning in 43 hospitals. Out of the 33 teaching tertiary hospitals, suction apparatus (manual or electric) is available in two thirds of them (22 hospitals) and functioning only in 16 hospitals. Out of the 20 secondary hospitals, suction apparatus (manual or electric) is available in 90% of them (18 hospitals) and functioning only in 15 hospitals. Out of the 31 rural hospitals, suction apparatus (manual or electric) is available in almost 80% of them (25 hospitals) and functioning only in 12 hospitals. Suction apparatus (manual or electric) is available but not functioning in one hospital out of the 2 other hospitals.

Number of hospitals with available and function of suction apparatus (manual or electric sucker)

Type of hospitals	Available	Functioning
Teaching tertiary	22	16
Secondary hospital	18	15
Rural hospital	25	12
Other	1	0
Total	66	43

Full set of central venous lines and sungstaken tubes are available in almost 60% (50 hospitals) of the 86 hospitals and functioning in 31 hospitals. Out of the 33 teaching tertiary hospitals, full set of central venous lines and sungstaken tubes are available in more than half of them (18 hospitals) and functioning only in 12 hospitals. Out of the 20 secondary hospitals, full set of central venous lines and sungstaken tubes are available in 70% of them (14 hospitals) and functioning only in 12 hospitals. Out of the 31 rural hospitals, full set of central venous lines and sungstaken tubes are available in more than half of them (17 hospitals) and functioning only in 6 hospitals. Full set of central venous lines and sungstaken tubes are available and functioning in one hospital out of the 2 other hospitals.

Figure 7.20: Number of hospitals with available and function of full set of central venous lines, sungs-taken tubes by type of hospital



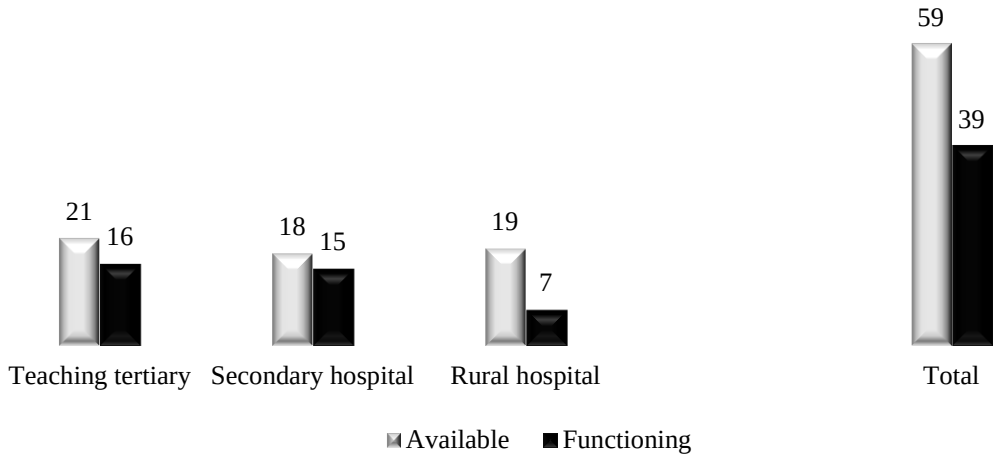
Oro-pharyngeal airway for adults and tracheostomy sets are available in more than two thirds (58 hospitals) of the 86 hospitals and functioning in 39 hospitals. Out of the 33 teaching tertiary hospitals, oro-pharyngeal airway for adults and tracheostomy sets are available in more than half of them (19 hospitals) and functioning only in 13 hospitals. Out of the 20 secondary hospitals, oro-pharyngeal airway for adults and tracheostomy sets are available in 85% of them (17 hospitals) and functioning only in 14 hospitals. Out of the 31 rural hospitals, oro-pharyngeal airway for adults and tracheostomy sets are available in more than two thirds of them (21 hospitals) and functioning only in 11 hospitals. Oro-pharyngeal airway for adults and tracheostomy sets are available and functioning in one hospital out of the 2 other hospitals.

Number of hospitals with available and function of oro-pharyngeal airway- adult, tracheostomy set

Type of hospitals	Available	Functioning
Teaching tertiary	19	13
Secondary hospital	17	14
Rural hospital	21	11
Other	1	1
Total	58	39

Endo-tracheal tube- cuffed sizes 5.5 to 9.0 are available in more than two thirds (59 hospitals) of the 86 hospitals and functioning in 39 hospitals. Out of the 33 teaching tertiary hospitals, endo-tracheal tube- cuffed sizes 5.5 to 9.0are available in more than two thirds of them (21 hospitals) and functioning only in 17 hospitals. Out of the 20 secondary hospitals, endo-tracheal tube- cuffed sizes 5.5 to 9.0 are available in 90% of them (18 hospitals) and functioning only in 15 hospitals. Out of the 31 rural hospitals, endo-tracheal tube- cuffed sizes 5.5 to 9.0 are available in more than 60% of them (19 hospitals) and functioning only in 7 hospitals. Endo-tracheal tube- cuffed sizes 5.5 to 9.0 are available and functioning in one hospital out of the 2 other hospitals.

Figure 7.21: Number of hospitals with available and function of endotracheal tube- cuffed sizes 5.5 to 9.0 by type of hospital



Laryngoscope handle and blade for adults are available in more than two thirds (60 hospitals) of the 86 hospitals and functioning in 41 hospitals. Out of the 33 teaching tertiary hospitals, laryngoscope handle and blade for adults are available in almost two thirds of them (21 hospitals) and functioning only in 17 hospitals. Out of the 20 secondary hospitals, Laryngoscope handle and blade for adults are available in 90% of them (18 hospitals) and functioning only in 15 hospitals. Out of the 31 rural hospitals, Laryngoscope handle and blade for adults are available in almost two thirds of them (20 hospitals) and functioning only in 8 hospitals. Laryngoscope handle and blade for adults are available and functioning in one hospital out of the 2 other hospitals.

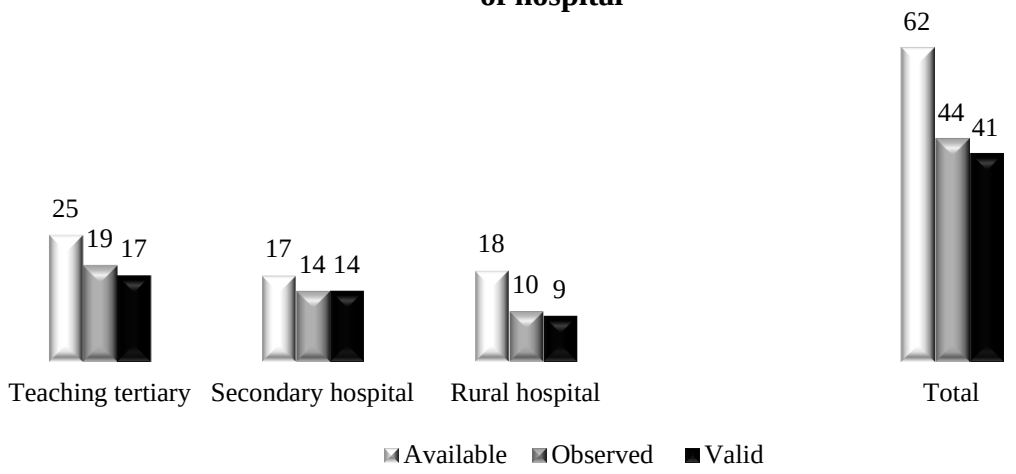
Number of hospitals with available and function of laryngoscope handle and blade- adult

Type of hospitals	Available	Functioning
Teaching tertiary	21	17
Secondary hospital	18	15
Rural hospital	20	8
Other	1	1
Total	60	41

Figure 7.22 (Table A.7.8a) shows the availability of sutures (different types and sizes) and skin disinfectants/antiseptic solutions in general surgery departments. The table shows also the validity of these items based on their expiry date.

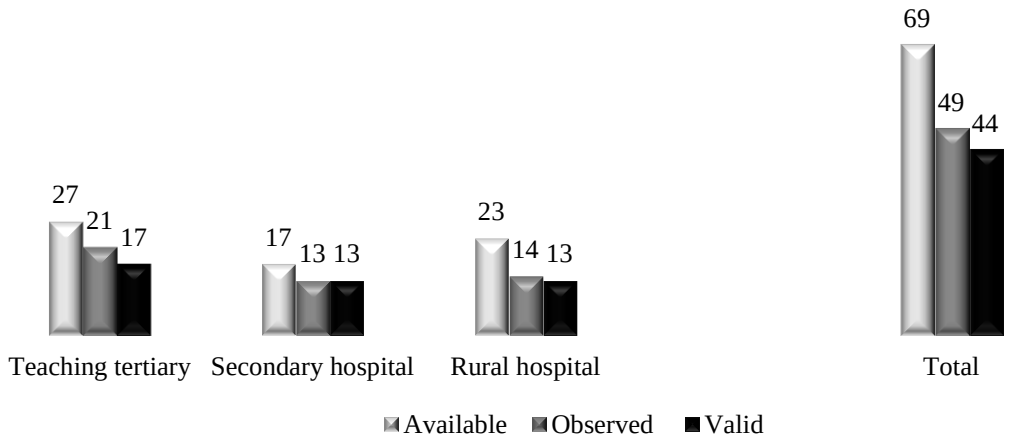
Different types and sizes of absorbable and non-absorbable suture materials were reported available in slightly less than three quarters (62 hospitals) of the 86 hospitals; however, sutures were observed in only 44 hospitals and were valid in 41 hospitals. Out of the 33 teaching tertiary hospitals, suture materials were reported available in slightly more than three quarters (25 hospitals); however, sutures were observed in only 19 hospitals and were valid in 17 hospitals.. Out of the 20 secondary hospitals, suture materials were reported available in 85% (17 hospitals) of the 20 hospitals; however, sutures were observed and valid in only 14 hospitals. Out of the 31 rural hospitals, suture materials were reported available in slightly less than 60% (18 hospitals) of the 31 hospitals; however, sutures were observed in only 10 hospitals and were valid in 9 hospitals. Suture materials were reported available in the two "other hospitals"; however, sutures were observed and valid in only one hospital.

Figure 7.22: Number of hospital has different types and sizes of absorbable and non-absorbable suture materials by type of hospital



Skin disinfectants/antiseptic solutions were reported available in more than 80% (69 hospitals) of the 86 hospitals; however, solutions were observed in only 49 hospitals and were valid in 44 hospitals. Out of the 33 teaching tertiary hospitals, skin disinfectants/antiseptic solutions were reported available in slightly more than 80% (27 hospitals); however, solutions were observed in only 21 hospitals and were valid in 17 hospitals.. Out of the 20 secondary hospitals, skin disinfectants/antiseptic solutions were reported available in 85% (17 hospitals) of the 20 hospitals; however, solutions were observed and valid in only 13 hospitals. Out of the 31 rural hospitals, skin disinfectants/antiseptic solutions were reported available in three quarters (23 hospitals) of the 31 hospitals; however, solutions were observed in only 14 hospitals and were valid in 13 hospitals. Skin disinfectants/antiseptic solutions were reported available in the two "other hospitals"; however, sutures were observed and valid in only one hospital.

Figure 7.23: Number of hospital has skin disinfectant fluids and antiseptic sol by type of hospital



7.2.3 Problems facing of general surgery departments

The heads of general surgery departments were asked to indicate in their opinions the degree of severity the problems they are facing at the time of the survey (where five indicates a very severe problem and one indicates a very mild problem) for the items that were asked in the other departments.

Table A.7.9 shows that the mean score of the degree of each of the above mentioned problems is moderate in the opinion of the heads of the general surgery departments of all hospitals

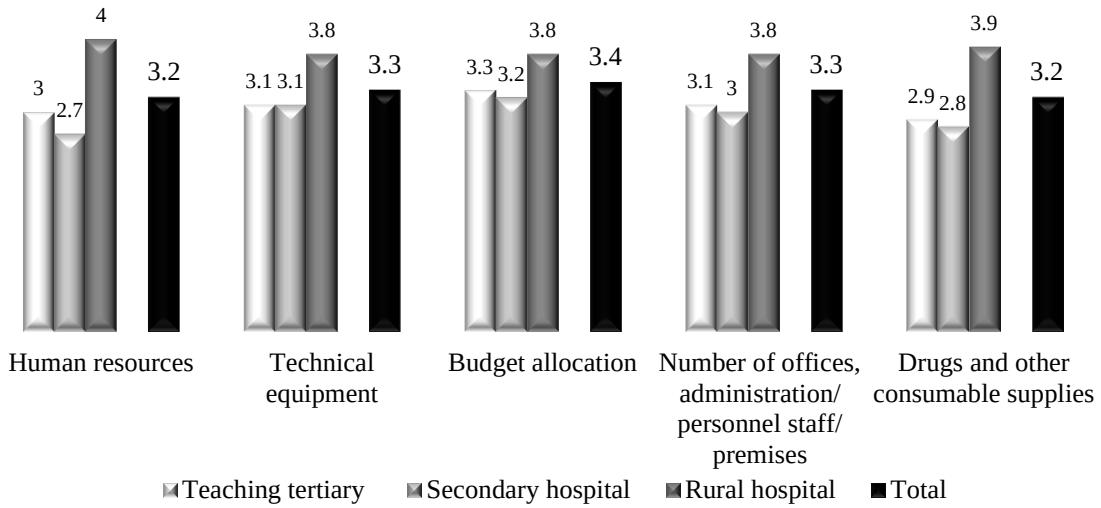
The heads of the general surgery departments of the tertiary teaching hospitals indicated that – in their opinion - they are facing moderate problems regarding all of the above categories. This degree of severity of the above mentioned problems is almost similar to the mean score of all hospitals.

Similarly, the heads of the internal medicine departments of the secondary hospitals indicated that – in their opinion - they are facing moderate problems. This degree of severity of the abovementioned problems is generally less than the mean score of all hospitals.

The problems are severe in the opinion of the heads of the general surgery departments of the rural hospitals, and are much more than the mean score of all hospitals.

The degree of each of the above mentioned problems is considered mild to moderate in the opinion of the heads of the internal medicine departments of the "other" hospitals. This degree of severity of each of the above mentioned problems is much less than the mean score of all hospitals.

Figure 7.24: Mean score of severity problem of facing general surgery department services per to problem by type of hospital



From the previous data we can conclude that, the total number of general surgery professional and surgery supportive staff increased post-conflict. The number of admissions as well as the number of outpatient visits increased post-conflict, while the number of operation sessions decreased post conflict. General Surgery departments have severe shortages in the basic equipment that are either available or functional in general surgery departments. This shortage affects the function of general hospitals departments in all hospitals, but it is very serious in rural hospitals.

7.3 Obstetrics & Gynecology (OB/GYN)

This section discus services delivery and utilization of different medical services provided by the OB/GYN departments.

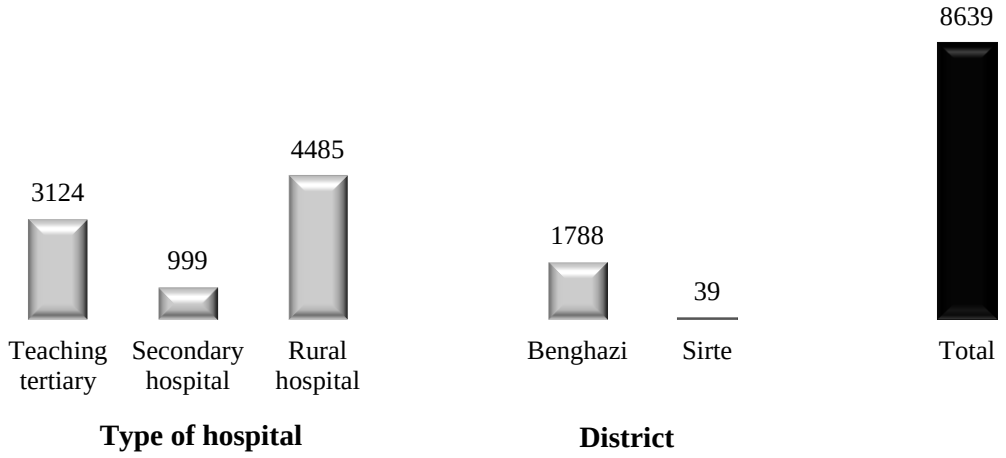
7.3.1 Infrastructure of OB/GYN departments

Table A.7.10 shows number of OB/GYN beds, staff availability and number of utilization of OB/GYN services by type of hospitals and by district.

All hospitals provide OB/GYN in Libya (86 hospitals). The total number of OB/GYN beds in Libya is 8639. Rural hospitals only host more than half of OB/GYN beds. More than one third of

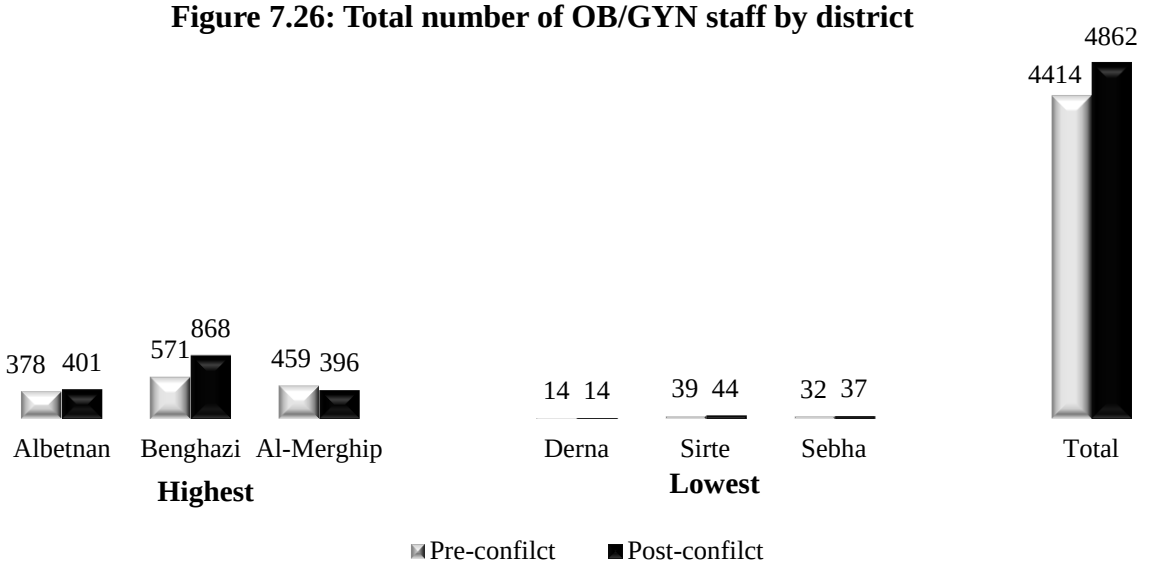
these OB/GYN beds are located in teaching tertiary hospitals. Around 45% of the beds are located only in 3 districts (Benghazi, Naloot and Al-Kufra).

Figure 7.25: Number of OB/GYN beds by type of hospital and district



There an increase (10%) in the total number of OB/GYN staff during the post-conflict phase. However, the increase in number of total staff was mainly in teaching and secondary hospitals. Almost 40% of the OB/GYN staff is working only in 3 districts (Benghazi, Albetnan and Al-Merghip). Naloot that has the biggest number of OB/GYN beds (1083 beds) has only 142 total staff.

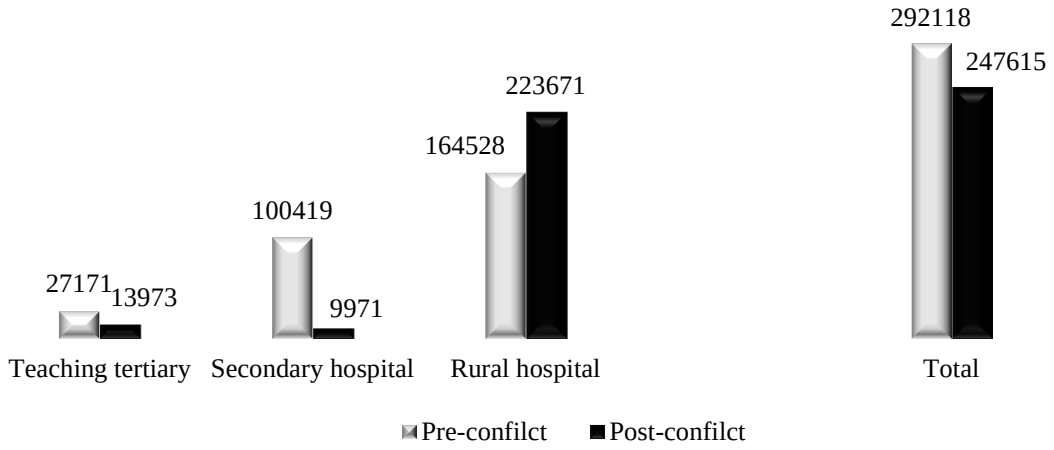
Figure 7.26: Total number of OB/GYN staff by district



In spite of the small change in the number of OB/GYN staff during the post-conflict phase, there is more than 40% increase in the numbers of the major procedures and around 50% increase in the numbers of admissions, while there is a 15% decrease in the number of outpatient visits.

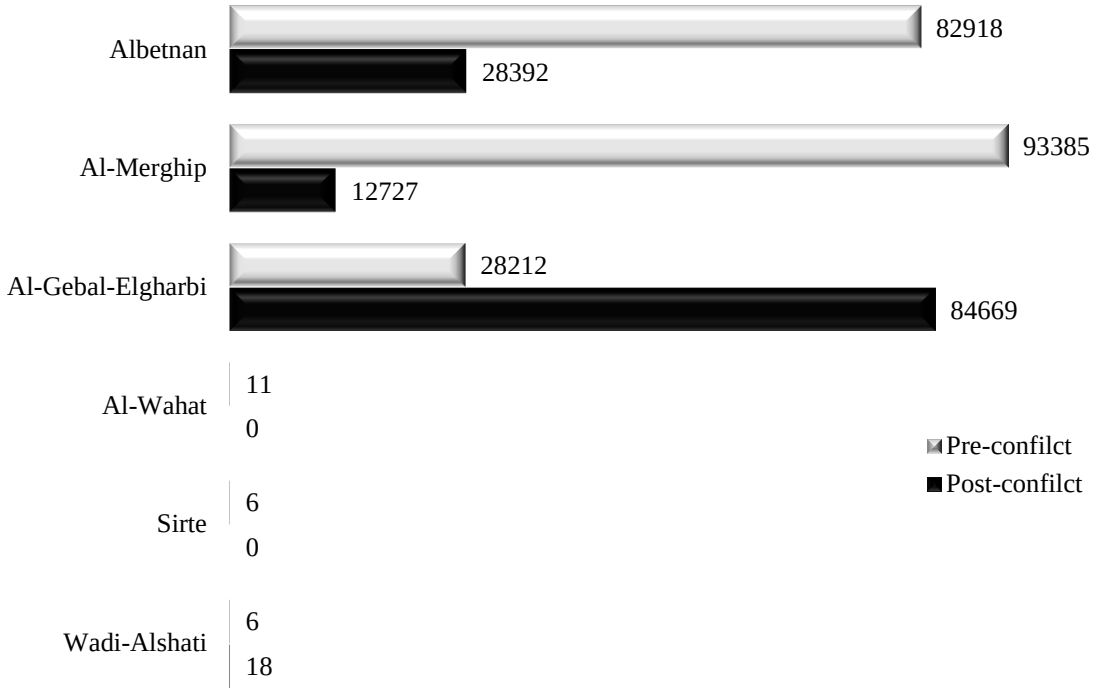
More than 90% of the outpatient visits were done in the rural hospitals. Number of the visits decreases significantly during the post-conflict phase in secondary and tertiary hospitals in comparison to the pre-conflict phase. No outpatient visits or major procedures conducted in the other hospitals.

Figure 7.27: Number of outpatient visits of OB/GYN services by type of hospital



More than two thirds of the outpatient visits were conducted only in 2 districts (Al-Gebal-Elgharbi and Naloot). Also the number of the outpatient visits increased significantly in the previously mentioned 2 districts during the post-conflict phase. However, the number of the outpatient visits decreased significantly during the post-conflict phase in Albetnan, Joufara, Al-Merghip and Benghazi. There were no outpatient visits during the post-conflict phase in 4 distric (Derna, Al-wahat, Sirte and Al-jufra) and only one visit in Sebha.

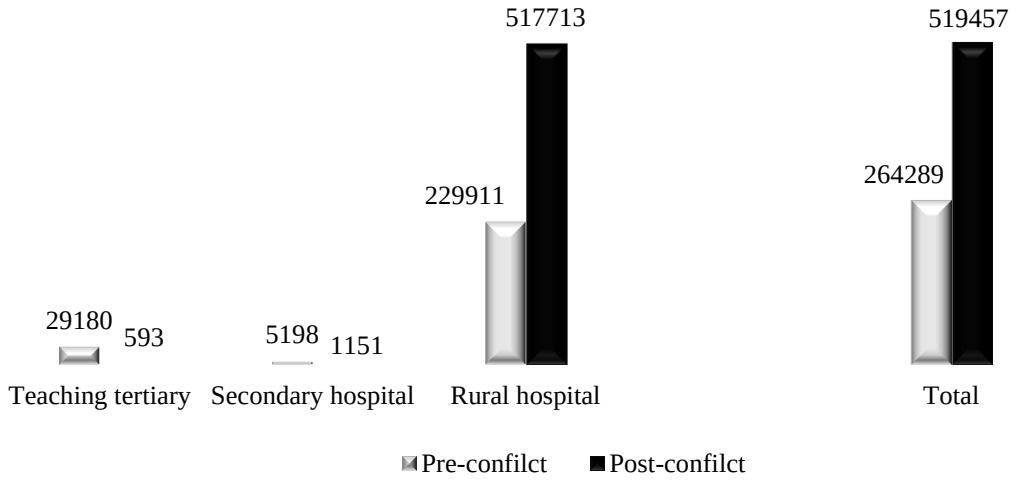
Figure 7.28: Number of outpatient visits of OB/GYN services by district



During the post-conflict phase, almost all of the major procedures were done in the rural hospitals. Number of the major procedures decreased significantly during the post-conflict phase in secondary and tertiary hospitals in comparison to the pre-conflict phase. No major procedures were conducted in the other hospitals.

More than half of the major procedures were conducted only in 2 districts (Wadi Alshati and Al-Gebal-Elgharbi). Also the number of the major procedures increased significantly in the previously mentioned 2 districts during the post-conflict phase. However, the number of the major procedures decreased significantly during the post-conflict phase in Alkufra, Sirte, Al-Merghip, and Zwara. There were no major procedures during the post-conflict phase in 3 districts (Derna, Morzig and Tripoli).

Figure 7.29: Number of major procedures of OB/GYN services by type of hospital



Number of the admissions increased during the post-conflict phase in rural, secondary and tertiary hospitals in comparison to the pre-conflict phase. During the post-conflict phase, more than 80% of the admissions were done in the rural hospitals.

Number of admissions of OB/GYN services

Type of hospitals	Pre	Post
Teaching tertiary	13525	25704
Secondary hospital	2599	23534
Rural hospital	185660	241021
Other	173	131
Total	201957	290390

Almost three quarters of the admissions were conducted only in 2 districts (Wadi Alshati and Al-Gebal-Elgharbi). Also the number of the admissions increased significantly in the previously mentioned 2 districts during the post-conflict phase. Also the increase in the number of admissions during the post-conflict phase was significant in Joufara, Al-Merghip and Tripoli. However, the number of the admissions decreased significantly during the post-conflict phase in Albetnan, Morzig and Benghazi. There were no admissions during the post-conflict phase in 2 districts (Derna and Alwahat).

Table A.7.11 shows the number of utilization of OB/GYN units related services availability in the pre-and post-conflict phase in different hospital types. There is almost 50% increase in the total number of OB/GYN unit's related services staff in the post-conflict phase. The number of the staff during the pre-conflict phase was 58 and during the post-conflict phase became 85. There is no staff in 14 districts in the post-conflict phase compared to 17 districts during the pre-conflict phase. Slightly less than half of OB/GYN units' related services staff is working only in 2 districts (Albetnan and Wadi Alshati).

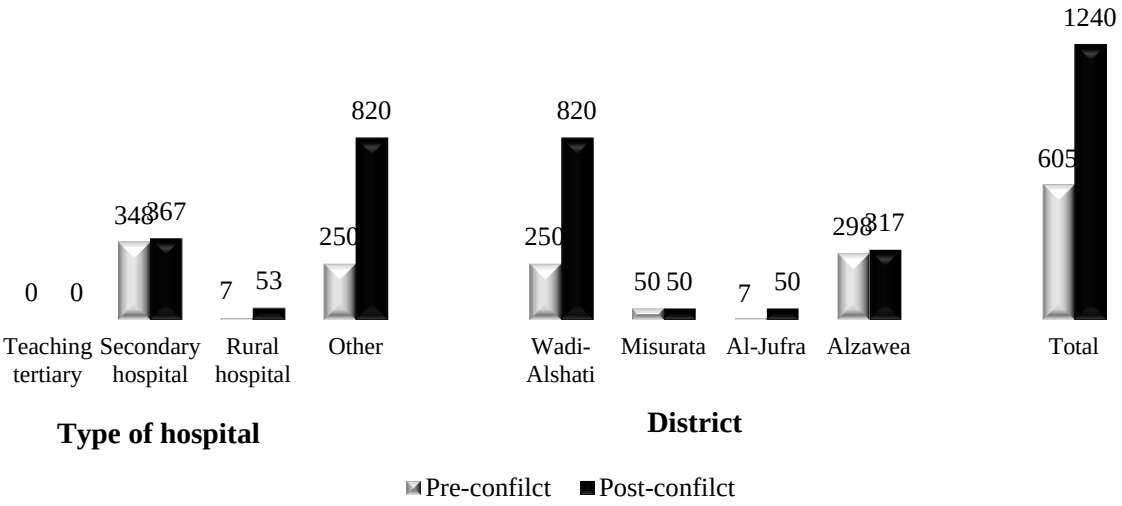
Number of staff of OB/GYN services

Type of hospitals	Pre	Post
Teaching tertiary	20	0
Secondary hospital	38	60
Rural hospital	0	7
Other	0	18
Total	58	85

The increase in the number of staff was reflected on the significant increase in the number of the outpatient visits and number of major procedures; however there is a dramatic decrease in the

number of the patients served. There is more than 2 times increase in the number of outpatient visits and number of major procedures during the post-conflict phase.

Figure 7.30: Number of outpatient visits of OB/GYN units related services by type of hospital and district



Two thirds of the outpatient visits were done in the other hospitals and most of the rest were done in the secondary hospitals.

No outpatient visits were conducted neither during the pre nor the post-conflict phase in 17 districts. Two thirds of the outpatient visits were done in only Wadi Alshati. The number of the outpatient visits significantly increased in the previously mentioned district.

Almost 90% of the patients were served in the secondary hospitals and the rest were served in the rural hospitals. All patients were served in only 3 districts (Almarege, Misurata and Wadi Alshati).

Two thirds of the major procedures were done in the other hospitals and most of the rest were done in the secondary hospitals.

No major procedures were conducted during the post-conflict phase in 16 districts. Two thirds of the major procedures were done in only Wadi Alshati. The number of the major procedures significantly increased in the previously mentioned district during the post-conflict phase.

Table A.7.12 shows percentage of OB/GYN services per professional staff during pre and post-conflict phases by type of hospitals and by district.

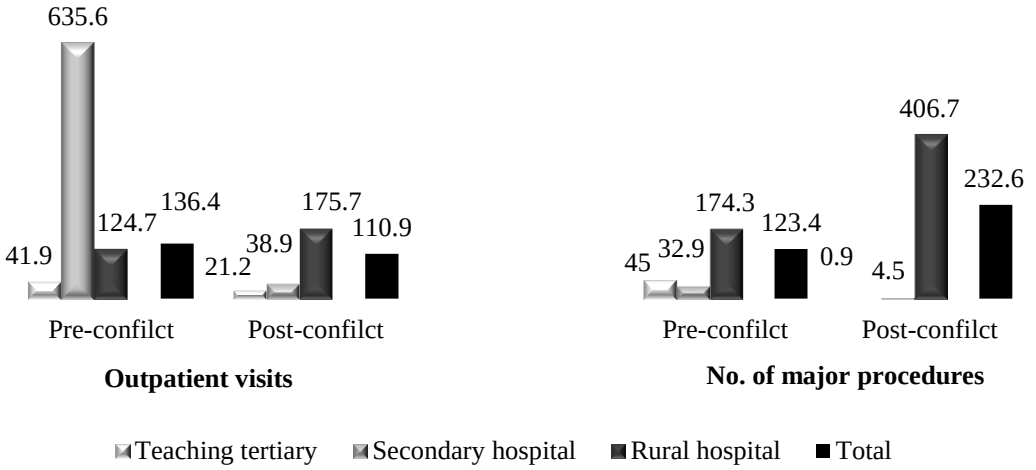
The table shows that the total percentage of the outpatient visits per professional staff was decreased by more than 15% during the post-conflict phases, however percentage of major procedures was increased by 90% and also percentage of admissions was increased by almost 40% during the post-conflict phase.

Percentage of OB/GYN services per professional staff during pre and post-conflict phases by type of hospitals shows that:

- In general, the percentage of OB/GYN services per professional staff is law in the teaching hospitals. The percentage of the outpatient visits per professional staff decreased by 50% during the post-conflict than the pre-conflict phases (41.9 visits Vs 21.2 visits respectively). There was a dramatic decrease in the percentage of the professional staff doing major procedures during the post-conflict phase (0.9 major procedures) in relation to the pre-conflict phase (45 major procedures). There was an increase in the percentage of the professional staff doing admissions during the post-conflict phase (39 admissions) in relation to the 21 admissions during the pre-conflict phase.

- In general, the percentage of OB/GYN services per professional staff is law in the secondary hospitals. The percentage of the outpatient visits per professional staff was much less during the post-conflict phase than during the pre-conflict phase (39 visits Vs 636 visits respectively). There is also a significant decrease in the percentage of the professional staff doing major procedures during the post-conflict phase (5 major procedures) in relation to the pre-conflict phase (33 major procedures). There was an increase in the percentage of the professional staff doing admissions during the post-conflict phase (92 admissions) in relation to the 16 admissions during the pre-conflict phase.
- In general, the percentage of OB/GYN services per professional staff is high in the rural hospitals. The percentage of the outpatient visits per professional staff was higher during the post-conflict phase than during the pre-conflict phase (176 visits Vs 125 visits respectively). There is also a significant increase in the percentage of the professional staff doing major procedures during the post-conflict phase (407 major procedures) in relation to the pre-conflict phase (174 major procedures). There was an increase in the percentage of the professional staff doing admissions during the post-conflict phase (189 admissions) in relation to the 141 admissions during the pre-conflict phase.
- In the "other" hospitals, neither outpatient visits nor major procedures were recorded both during pre and post-conflict phases. There was an decrease in the percentage of the professional staff doing admissions during the post-conflict phase (3 admissions) in relation to the 11 admissions during the pre-conflict phase.

Figure 7.31: Percentage of OB/GYN services per professional staff during pre and post-conflict phases by type of hospital



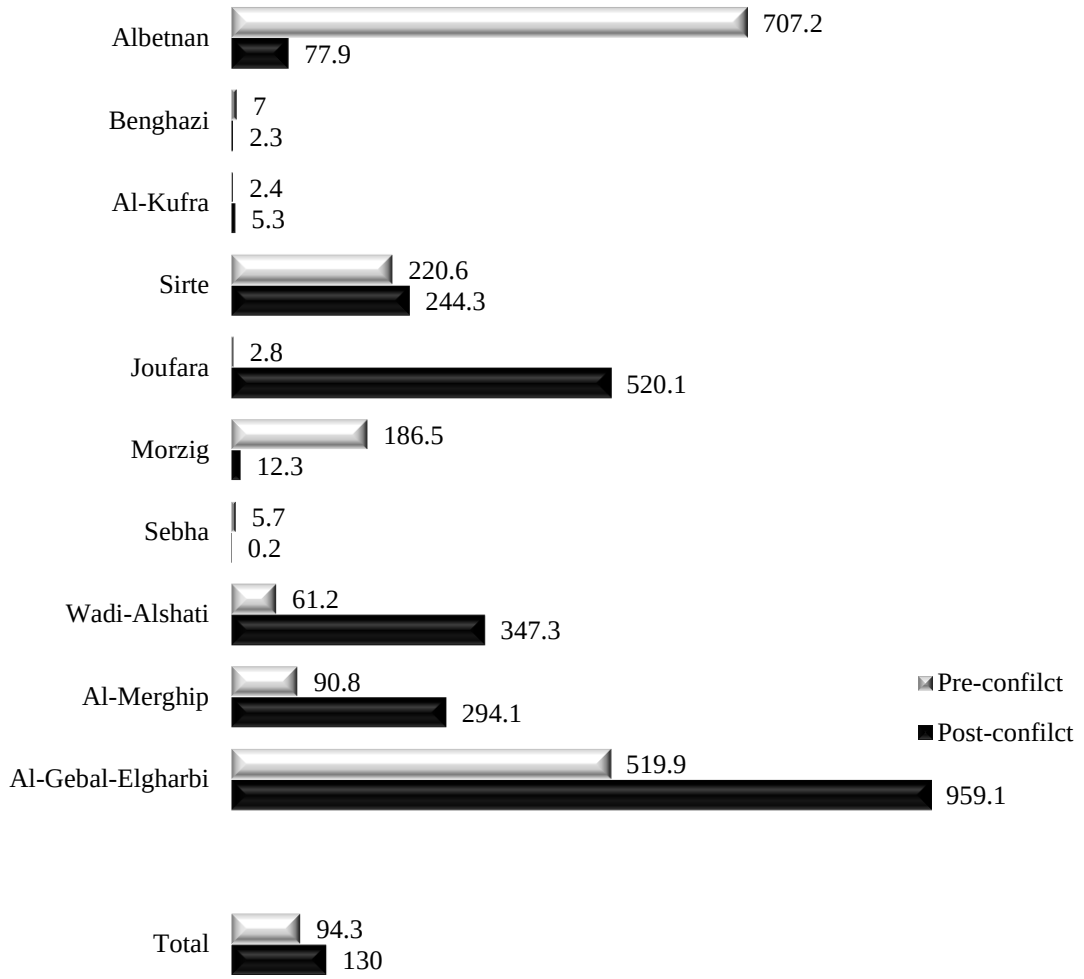
Percentage of OB/GYN services per professional staff during pre and post-conflict phases by district (Table A.7.12) shows that:

- Percentage of outpatient visits per professional staff during the post-conflict phase is highest in Naloot (2063 visits) and Al-Gebal-Elgharbi (632 visits). This percentage increased significantly in the previously mentioned two distric during the post-conflict phase in relation to the pre-conflict one. Percentage of outpatient visits per professional staff during the post-conflict phase is significantly law in Misurata, Benghazi and Tripoli. This percentage of the outpatient visits per professional staff during the post-conflict phase is zero in 5 district. Surprisingly enough, in Sebha and Al-Jufra, the percentage of outpatient visits per professional staff was high during the pre-conflict phase and became zero during the post-conflict one.
- Percentage of major procedures per professional staff during the post-conflict phase is highest in Al-Jufra (1089 procedures), Al-Gebal-Elgharbi (769 procedures) and Wadi Alshati (693 procedures). Percentage of major procedures per professional staff during the

post-conflict phase is very law in Benghazi, Misurata and Zwara while it was zero in 4 district including Tripoli.

- Percentage of admissions per professional staff during the post-conflict phase is highest in Al-Gebal-Elgharbi (959 admissions) Al-Jufra (520 admissions), and Wadi Alshati (347 admissions). Percentage of major procedures per professional staff during the post-conflict phase is very law in Al-Jufra, Sebha, Ajdabis, Benghazi, and Zwara while it was zero in 3 distric including Misurata.

Figure 7.32: Percentage of OB/GYN services per professional staff during pre and post-conflict phases by district



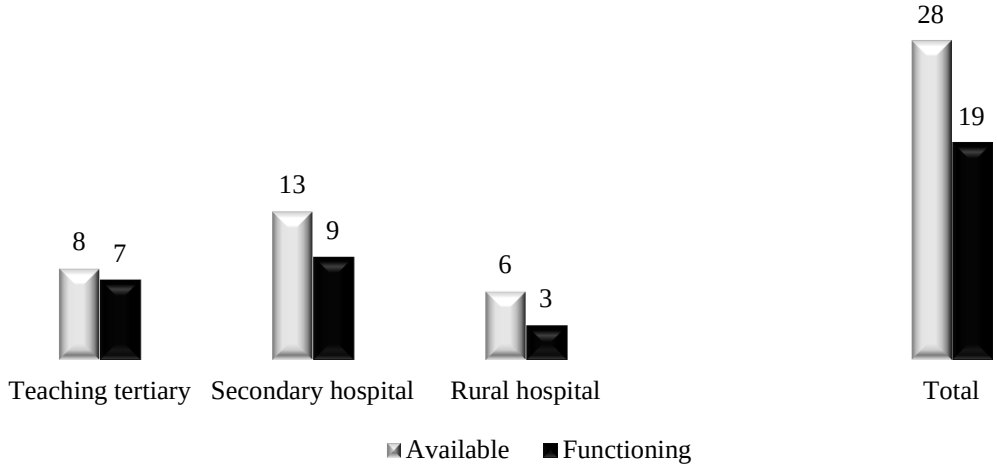
7.3.2 Availability of equipment in OB/GYN departments

Table A.7.13 shows numbers of hospitals that have basic OB/GYN department equipment and their functional state by hospital type.

The table shows that no single hospital type has all the basic OB/GYN department equipment, also not all the available equipment is functioning.

Examining lights are available in one third (28 hospitals) of the 86 hospitals and functioning only in 19 hospitals. Out of the 33 teaching tertiary hospitals, examining lights are available in one quarter of them (8 hospitals) and functioning only in 7 hospitals. Out of the 20 secondary hospitals, examining lights are available in 65% of them (13 hospitals) and functioning only in 9 hospitals. Out of the 31 rural hospitals, examining lights are available in less than 20% of them (6 hospitals) and functioning only in 3 hospitals. Examining lights are available and not functioning in one hospital out of the 2 other hospitals.

Figure 7.33: Number of hospitals with available and function of examination light by type of hospital



Delivery packs are available in less than 30% (24 hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, Delivery packs are available in less than one quarter (7 hospitals). Out of the 20 secondary hospitals, Delivery packs are available in 60% of them (12 hospitals). Out of the 31 rural hospitals, Delivery packs are available in less than one eighth (4 hospitals). Delivery packs are available in only one hospital out of the 2 other hospitals.

Number of hospitals with available of delivery pack

Type of hospitals	Available
Teaching tertiary	7
Secondary hospital	12
Rural hospital	4
Other	1
Total	24

Cord clamps are available in less than 30% (24hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, Cord clamps are available in less than one quarter (7 hospitals). Out of the 20 secondary hospitals, Cord clamps are available in 60% of them (12 hospitals). Out of the 31 rural hospitals, Cord clamps are available in less than one eighth (4 hospitals). Cord clamps are available in only one hospital out of the 2 other hospitals.

Number of hospitals with available of episiotomy scissors

Type of hospitals	Available
Teaching tertiary	8
Secondary hospital	13
Rural hospital	6
Other	1
Total	28

Episiotomy scissors are available in less than one third (28hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, Episiotomy scissors are available in less than one quarter (8 hospitals). Out of the 20 secondary hospitals, Episiotomy scissors are available in 65% of them (13 hospitals). Out of the 31 rural hospitals, Episiotomy scissors are available in less than one fifth (6 hospitals). Episiotomy scissors are available in only one hospital out of the 2 other hospitals.

Scissors or blades to cut the cord are available in less than one third (28hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, Scissors or blades to cut the cord are available in less than one quarter (8 hospitals). Out of the 20 secondary hospitals, Scissors or blades to cut the cord are available in 65% of them (13 hospitals). Out of the 31 rural hospitals, Scissors or blades to cut the cord are available in less than one fifth (6 hospitals). Scissors or blades to cut the cord are available in only one hospital out of the 2 other hospitals.

Suture materials with needles are available in 30% (26hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, Suture materials with needles are available in less than one quarter (8 hospitals). Out of the 20 secondary hospitals, Suture materials with needles are available in 65% of them (13 hospitals). Out of the 31 rural hospitals, Suture materials with needles are available in less than one eighth (4 hospitals). Suture materials with needles are available in only one hospital out of the 2 other hospitals.

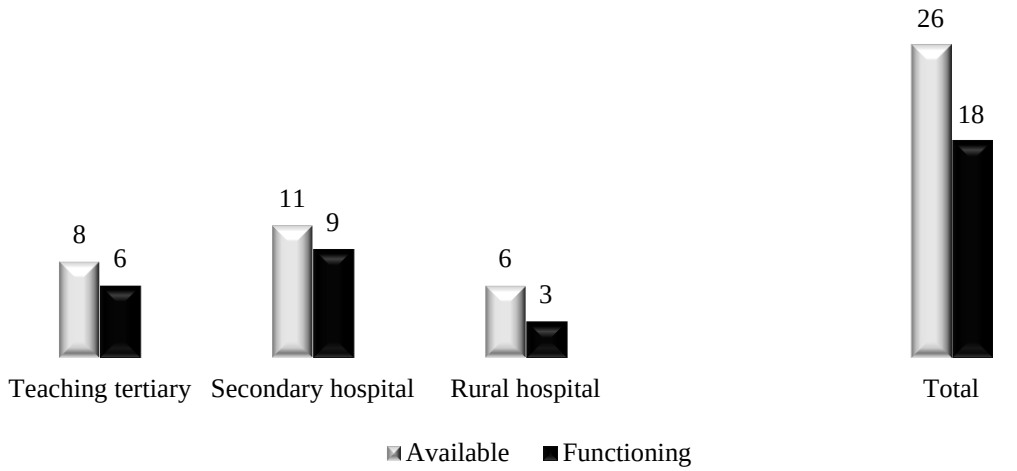
Needle holders and tissue forceps are available in less than one third (28hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, Needle holders and tissue forceps are available in less than one quarter (8 hospitals). Out of the 20 secondary hospitals, Needle holders and tissue forceps are available in 65% of them (13 hospitals). Out of the 31 rural hospitals, Needle holders and tissue forceps are available in less than one fifth (6 hospitals). Needle holders and tissue forceps are available in only one hospital out of the 2 other hospitals.

Number of hospitals with available of needle holders and tissue forceps

Type of hospitals	Available
Teaching tertiary	8
Secondary hospital	13
Rural hospital	6
Other	1
Total	28

Suction apparatus are available in 30% (26 hospitals) of the 86 hospitals and functioning only in 18 hospitals. Out of the 33 teaching tertiary hospitals, Suction apparatus are available in less than one quarter (8 hospitals) and functioning only in 6 hospitals. Out of the 20 secondary hospitals, Suction apparatus are available in 55% of them (11 hospitals) and functioning only in 9 hospitals. Out of the 31 rural hospitals, Suction apparatus are available in less than one fifth (6 hospitals) and functioning only in 3 hospitals. Suction apparatus are available and not functioning in only one hospital out of the 2 other hospitals.

Figure 7.34: Number of hospitals with available and function of suction apparatus by type of hospital



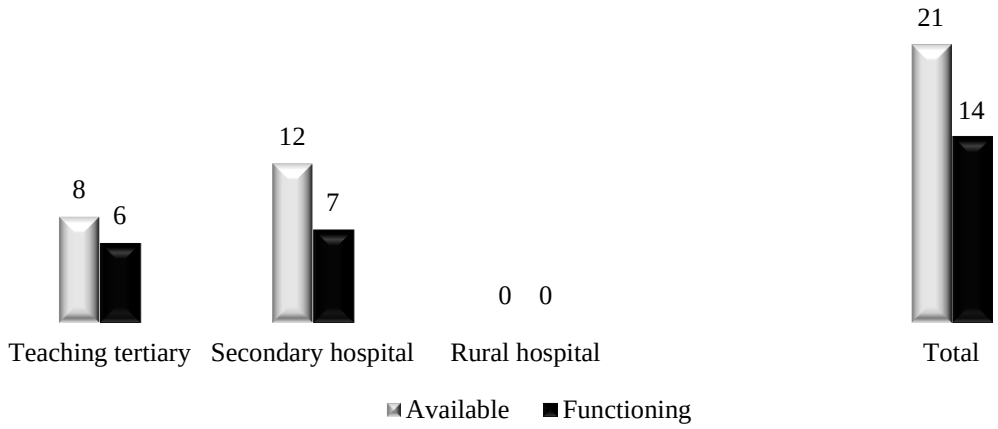
Manual vacuum extractors are available in one quarter (22 hospitals) of the 86 hospitals and functioning only in 15 hospitals. Out of the 33 teaching tertiary hospitals, Manual vacuum extractors are available in less than one quarter (8 hospitals) and functioning only in 6 hospitals. Out of the 20 secondary hospitals, Manual vacuum extractors are available in 55% of them (11 hospitals) and functioning only in 8 hospitals. Out of the 31 rural hospitals, Manual vacuum extractors are available in less than 7% (2 hospitals) and functioning only in 1 hospital. Manual vacuum extractors are available and not functioning in only one hospital out of the 2 other hospitals.

Number of hospitals with available and function of manual vacuum extractor

Type of hospitals	Available	Functioning
Teaching tertiary	8	6
Secondary hospital	11	8
Rural hospital	2	1
Other	1	0
Total	22	15

Vacuum aspirator or D&C kits are available in less than one quarter (21 hospitals) of the 86 hospitals and functioning only in 14 hospitals. Out of the 33 teaching tertiary hospitals, Vacuum aspirator or D&C kits are available in less than one quarter (8 hospitals) and functioning only in 6 hospitals. Out of the 20 secondary hospitals, Vacuum aspirator or D&C kits are available in 60% of them (12 hospitals) and functioning only in 7 hospitals. Out of the 31 rural hospitals, Vacuum aspirator or D&C kits are not available. Vacuum aspirator or D&C kits are available and functioning in only one hospital out of the 2 other hospitals.

Figure 7.35: Number of hospitals with available and function of vacuum aspirator or D&C kit by type of hospital



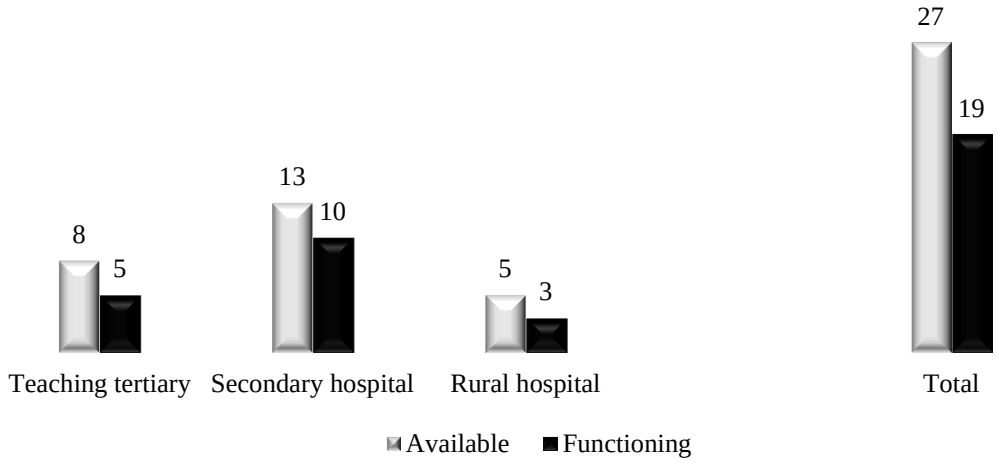
Neonatal bag and masks are available in less than one quarter (22 hospitals) of the 86 hospitals and functioning only in 18 hospitals. Out of the 33 teaching tertiary hospitals, Neonatal bag and masks are available in slightly more than one quarter (9 hospitals) and functioning only in 7 hospitals. Out of the 20 secondary hospitals, Neonatal bag and masks are available in 55% of them (11 hospitals) and functioning only in 9 hospitals. Out of the 31 rural hospitals, Neonatal bag and masks are available and functioning in only in 1 hospital. Neonatal bag and masks are available and functioning in only one hospital out of the 2 other hospitals.

Number of hospitals with available and function of neonatal bag and mask

Type of hospitals	Available	Functioning
Teaching tertiary	9	7
Secondary hospital	11	9
Rural hospital	1	1
Other	1	1
Total	22	18

Incubators are available in less than one third (27 hospitals) of the 86 hospitals and functioning only in 19 hospitals. Out of the 33 teaching tertiary hospitals, Incubators are available in less than one quarter (8 hospitals) and functioning only in 5 hospitals. Out of the 20 secondary hospitals, Incubators are available in 65% of them (13 hospitals) and functioning only in 10 hospitals. Out of the 31 rural hospitals, Incubators are available in less than one sixth (5 hospitals) and functioning in only in 3 hospital. Incubators are available and functioning in only one hospital out of the 2 other hospitals.

Figure 7.36: Number of hospitals with available and function of incubator by type of hospital



Cardio-tocography are available in less than one quarter (20 hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, Cardio-tocography is available in less than 30% (9 hospitals). Out of the 20 secondary hospitals, Cardio-tocography is available in 45% of them (9 hospitals). Out of the 31 rural hospitals, Cardio-tocography is available in only 2 hospitals. Cardio-tocography are not available in any of the 2 other hospitals.

Number of hospitals with available of cardio-tocography (CTG)

Type of hospitals	Available
Teaching tertiary	9
Secondary hospital	9
Rural hospital	2
Other	0
Total	20

Blank partographs are available in less than 20% (16 hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, Blank partographs are available in less than one quarter (7 hospitals). Out of the 20 secondary hospitals, Blank partographs are available in 30% of them (6 hospitals). Out of the 31 rural hospitals, Blank partographs are available in only 2 hospitals. Blank partographs are available in only one hospital out of the 2 other hospitals.

Number of hospitals with available delivery bed

Type of hospitals	Available
Teaching tertiary	11
Secondary hospital	13
Rural hospital	6
Other	1
Total	31

Delivery beds are available in slightly more than one third (31hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, Delivery beds are available in one third (11 hospitals). Out of the 20 secondary hospitals, Delivery beds are available in 65% of them (13 hospitals). Out of the 31 rural hospitals, Delivery beds are available in less than one fifth (6 hospitals). Delivery beds are available in only one hospital out of the 2 other hospitals.

7.3.3 Problems facing of OB/GYN departments

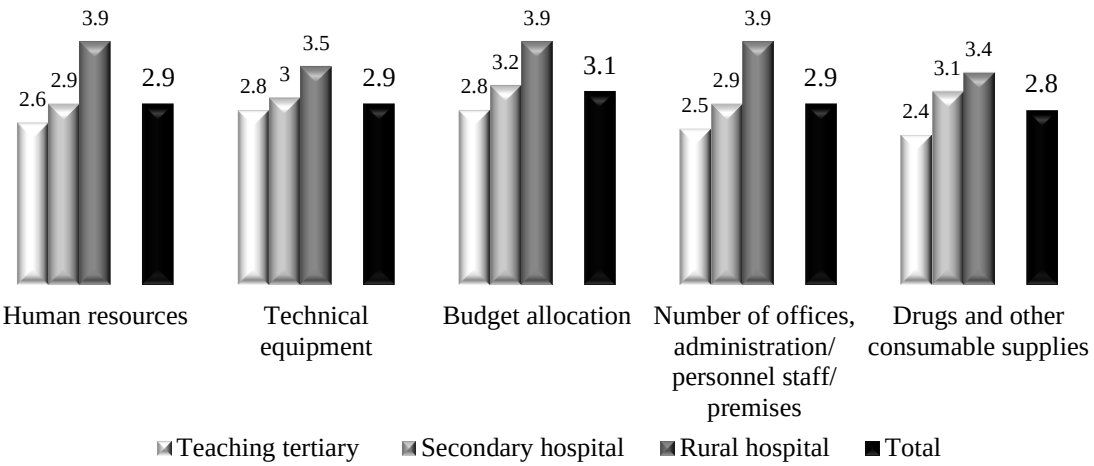
The heads of OB/GYN departments were asked to indicate in their opinions the degree of severity the problems they are facing at the time of the survey.

Table A.7.14 shows the mean score of the opinion of the OB/GYN departments' heads regarding the severity of the problems they are facing at the time of the survey.

The table shows that the mean score of the degree of each of the above mentioned problems is moderate in the opinion of the heads of the OB/GYN departments of all hospitals

The heads of the OB/GYN departments of the tertiary teaching hospitals indicated that – in their opinion - they are facing toward mild problems regarding all of the above categories except for the problem of drugs and other consumable supplies, they considered it mild. This degree of severity of the above mentioned problems is slightly less than the mean score of all hospitals.

Figure 7.37: Mean score of severity problem of facing OB/GYN department services per to problem by type of hosital



Similarly, the heads of the OB/GYN departments of the secondary hospitals indicated that – in their opinion - they are facing moderate problems. This degree of severity of the above mentioned problems is almost equal to the mean score of all hospitals.

The problems are severe in the opinion of the heads of the OB/GYN departments of the rural hospitals except for the problem of drugs and other consumable supplies, they considered it moderate. The degree of severity of the above mentioned problems is significantly higher than the mean score of all hospitals and higher than teaching and secendary.

The degree of each of the above mentioned problems is considered mild to moderate in the opinion of the heads of the OB/GYN departments of the "other" hospitals. This degree of severity of each of the above mentioned problems is less than the mean score of all hospitals.

The previous results show that, the total number OB/GYN professional and supportive staff increased post-conflict. The number of outpatient visits decreased post-conflict, while the number of admissions to OB/GYN departments and number of major procedures increased post conflict. Regarding the basic equipment that are either available or functional in OB/GYN departments, the available data shows that there are critical shortage in these basic equipment in all hospitals.

7.4 Pediatrics

This section discus services delivery and utilization of different medical services provided by the pediatric departments.

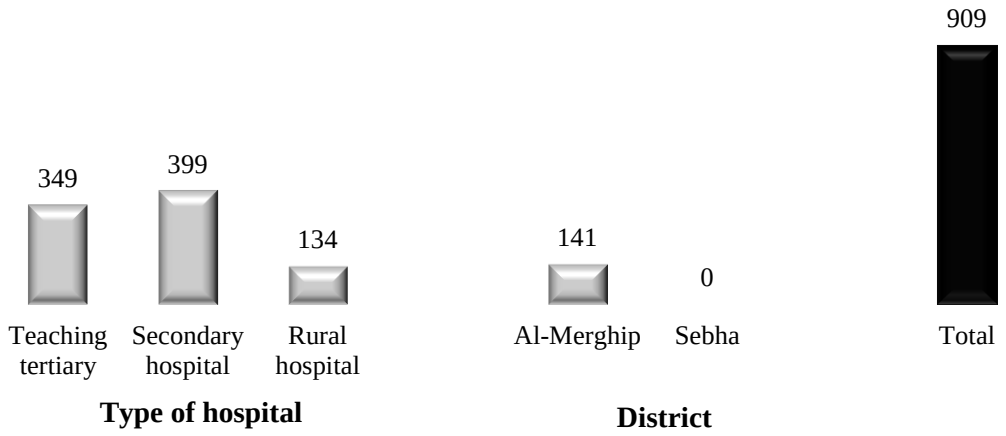
7.4.1 Infrastructure of pediatrics departments

Table A.7.15 shows the current number of pediatric beds. It also shows pre and post-conflict staff availability and pediatric services utilization by type of hospitals and by district.

Number of the hospitals that provide pediatrics service in Libya is 84 hospitals.

According to data collected, the total number of pediatrics beds in Libya is 995. Almost four fifth of these pediatric beds is located in both teaching tertiary hospitals and secondary hospitals. Almost 40% of the beds are located only in 3 districts (Misurata, Al-Mirghip and Al-Gebal Elgharbi).

Figure 7.38: Number of pediatrics beds by type of hospital and district



There is more than 11% increase in the total number of pediatrics staff in the post-conflict phase. This increase was less in the professional staff (10%) and more in the other staff categories (14%).

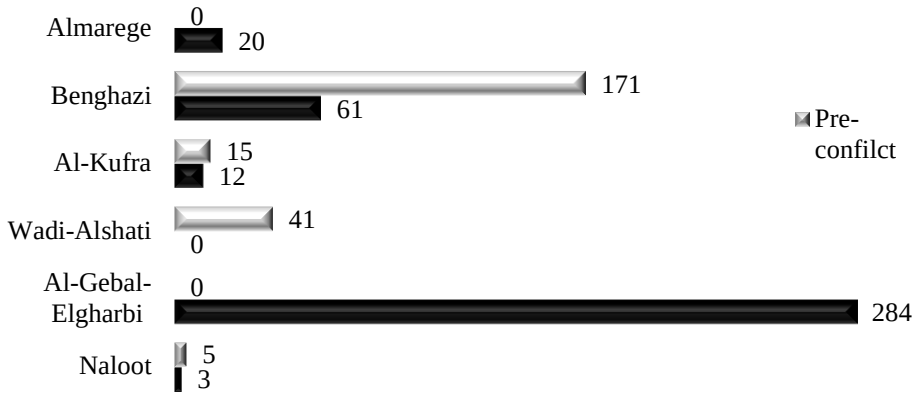
There is no pediatric staff in 5 districts both during the pre and the post-conflict phases. More than three quarters of the pediatric staff is working only in 7 districts.

In general, the increase in the number of the professional staff is reflected on the increase in the number of utilization of pediatric services. There is more than 25% increase in the number of outpatient visits, more than 60% increase in the number of major procedures and there is also increase by more than one third in the number of admissions.

No outpatient visits were conducted in the post-conflict phase in 7 districts that have 18 hospitals in comparison to 10 districts in the pre-conflict phase. Almost 60% of the outpatient visits were conducted only in 4 districts.

No major procedures were conducted in 16 districts both in the pre and post-conflict phases. More than 90% of the major procedures were conducted only in 2 districts (Benghazi and Al-Gebal Elgharbi).

Figure 7.39: Number of major procedures in pediatrics by district



No admissions were reported in 8 districts both in the pre and post-conflict phases. More than two thirds of the admissions were reported only in 2 districts (Benghazi and Joufara).

Figure 7.40: Number of admission in pediatrics by district

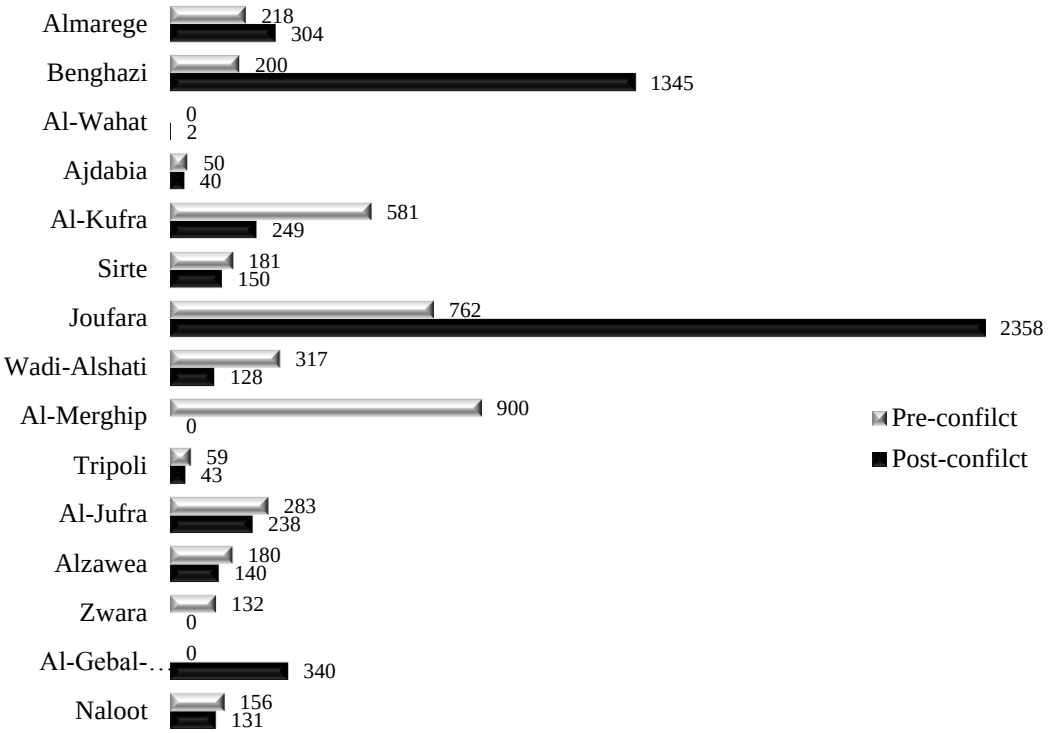
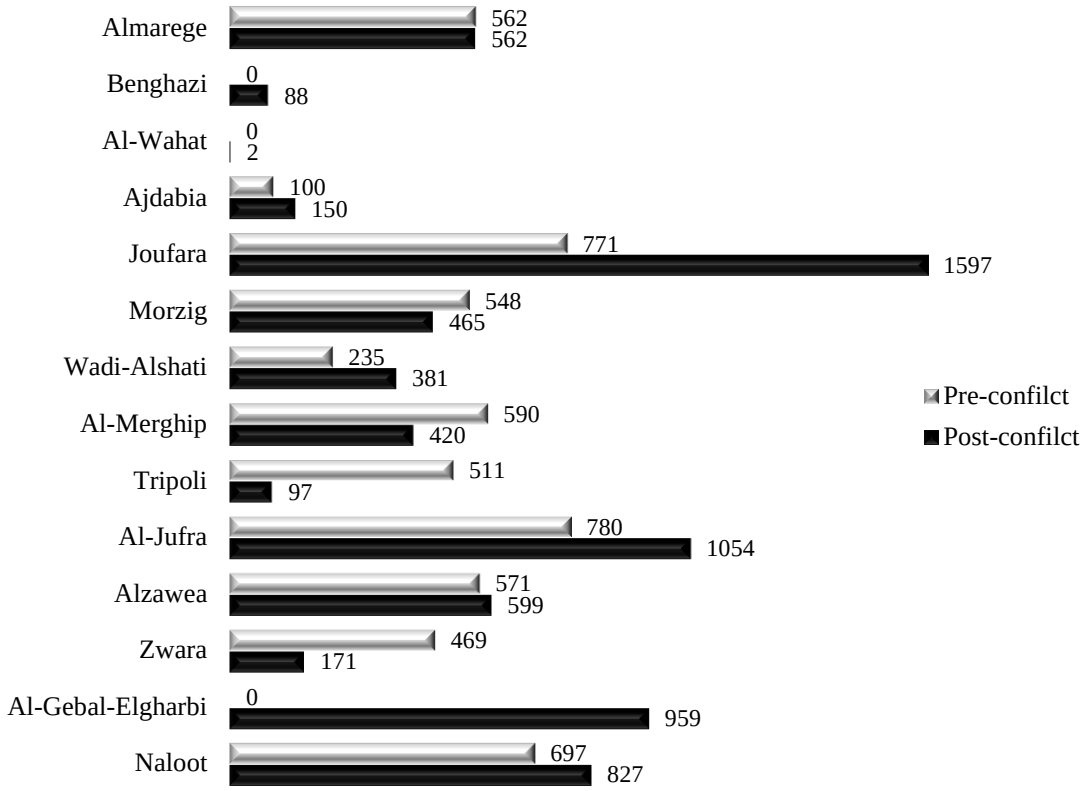


Table A.7.16 shows percentage of pediatric services per professional staff during pre and post-conflict phases by type of hospitals and by district.

In general, the table shows that the total percentage of pediatric services per professional staff is higher during the post-conflict than the pre-conflict phase. More than 19 outpatient visits per professional staff were done during the post-conflict phase while it was less than 17 visits during the pre-conflict phase. One major procedure per professional staff was done during the post-conflict phase while it was less than one during the pre-conflict phase. More than 14 admissions per professional staff were done during the post-conflict phase while it was less than 12 admissions during the pre-conflict phase.

Figure 7.41: Number of outpatient visits in pediatrics per professional staff by district



Percentage of pediatric services per professional staff during pre and post-conflict phases by type of hospitals shows that:

- In teaching hospitals, the outpatient visits per professional staff were generally low and almost equal during the post-conflict and the pre-conflict phases (5.5 visits Vs 5.4 visits respectively). There is a decrease in the percentage of the professional staff doing major procedures during the post-conflict phase (0.2 major procedures) in relation to the pre-conflict phase (0.8 major procedures). On the contrary, there is an increase in the percentage of the professional staff doing admissions during the post-conflict phase (10 admissions) in relation to the pre-conflict phase (less than 3 admissions).
- In secondary hospitals, the outpatient visits per professional staff were generally high and almost equal during the post-conflict and the pre-conflict phases (45.4 visits Vs 45 visits respectively). There is an increase in the percentage of the professional staff doing major procedures during the post-conflict phase (0.3 major procedures) in relation to the pre-conflict phase (0.1 major procedures). Also, there is an increase in the percentage of the professional staff doing admissions during the post-conflict phase (25 admissions) in relation to the pre-conflict phase (16 admissions).

- In rural hospitals, the outpatient visits per professional staff were generally high and increased significantly during the post-conflict (74 visits) in contrast to less than 26 visits during the pre-conflict phase. There is an also a marked increase in the percentage of the professional staff doing major procedures during the post-conflict phase (12 major procedures) in relation to the less than one major procedures during the pre-conflict phase. However, there is a decrease in the percentage of the professional staff doing admissions during the post-conflict phase (28 admissions) in relation to 69 admissions during the pre-conflict phase.
- In the "other" hospitals, the outpatient visits per professional staff during the post-conflict was 19 visits in contrast to less than 12 visits during the pre-conflict phase. There are no major procedures recorded during the post-conflict phase while the percentage of the professional staff doing major procedures during pre-conflict phase was 2. There is a marked decrease in the percentage of the professional staff doing admissions during the post-conflict phase (6 admissions) in relation to 16 admissions during the pre-conflict phase.

Percentage of pediatric services per professional staff during pre and post-conflict phases by districts shows that:

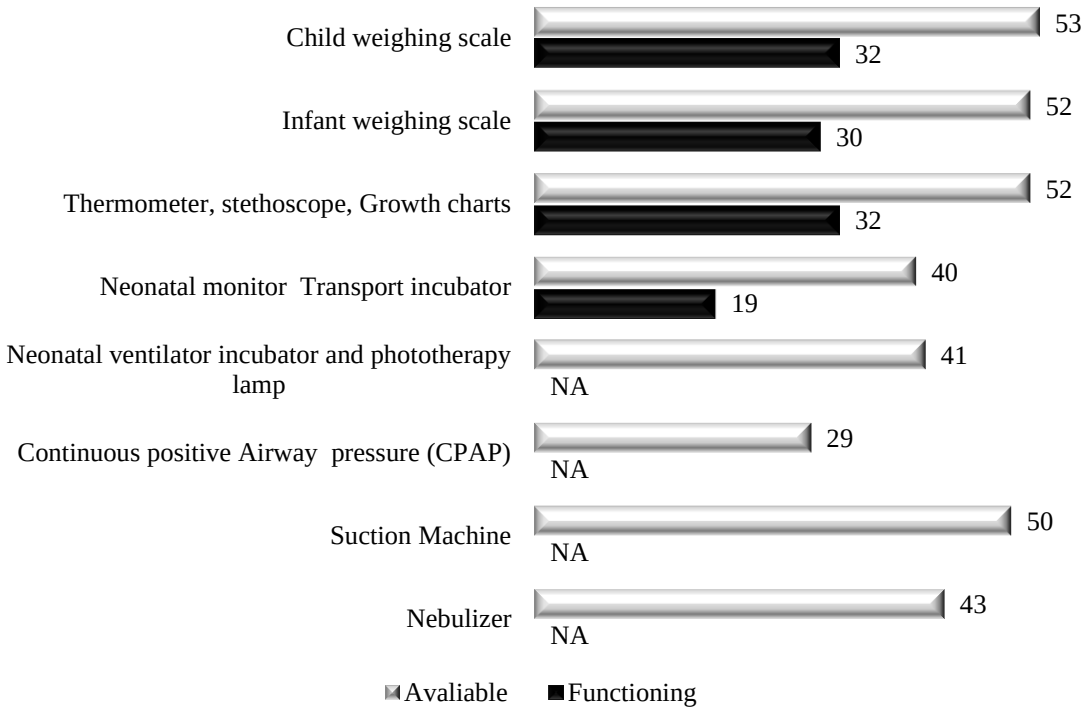
- Percentage of outpatient visits per professional staff during the post-conflict phase is highest in Al-Jufra (211 visits), Naloot (138 visits) and Ajdabia (75 visits). Also this percentage increased significantly in the previously mentioned three districts during the post-conflict phase in relation to the pre-conflict one. Percentage of outpatient visits per professional staff during the post-conflict phase is significantly low in Tripoli, Zwara and Benghazi. This percentage of the outpatient visits per professional staff during the post-conflict phase is zero in 11 districts.
- Percentage of major procedures per professional staff during the post-conflict phase is highest in Al-Gebal Elgharbi (9 procedures), Al-Kufra and Benghazi (4 procedures). Percentage of major procedures per professional staff during the post-conflict phase is zero in almost all other districts.
- Percentage of admissions per professional staff during the post-conflict phase is highest in Benghazi (84 admissions), Al-Kufra (83 admissions), Joufara (54 admissions) and Al-Jufra (48 admissions). This percentage increased significantly in Benghazi and Joufara, while it decreased significantly in Al-Kufra during the post-conflict phase in relation to the pre-conflict one. The percentage of the admissions per professional staff during the post-conflict phase is zero in 11 districts.

7.4.2 Availability of equipment in pediatric departments

The Table A.7.17 shows numbers of hospitals that have basic pediatric department equipment and the functional state of some of these equipment by hospital type.

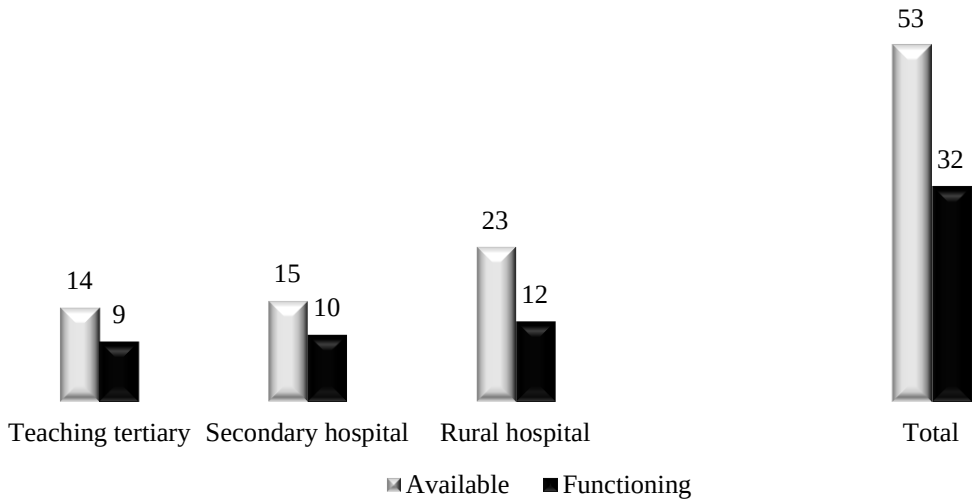
The table shows that no single hospital type has all the basic pediatric department equipment, also not all the available equipment is functioning.

Figure 7.42: Number of hospitals with available and function of basic pediatric department services by type of hospital



Out of 86 hospitals, less than two thirds of them (53 hospitals) have child weighing scale with only 32 of them are functioning. Out of the 33 teaching tertiary hospitals, the child weighing scale is available in less than 42% of them (14 hospitals) and functioning only in 9 hospitals, while in secondary hospitals, the scale is available in three quarters of them (15 hospitals) and functioning only in 10 hospitals. The child weighing scale is available in almost three quarters of them of them (23 hospitals) and functioning only in 12 hospitals. The child weighing scale is available and functioning in one hospital out of the 2 other hospitals.

Figure 7.43: Number of hospitals with available and function of child weighing scale in hospital



Almost 60% of the 86 hospitals (52 hospitals) have infant weighing scale with only 30 of them are functioning. The infant weighing scale is available in less than 40% of teaching hospitals (13

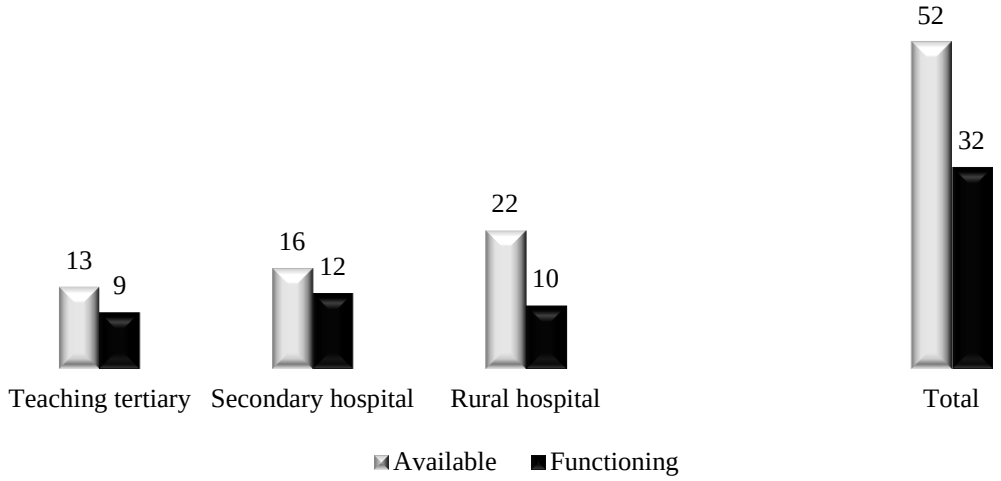
hospitals, secondary hospitals and functioning only in 7 hospitals), and three quarters of secondary hospital (15 hospital and functioning only in 11 hospitals), and in almost three quarters of them of them (23 hospitals) and functioning only in 11 rural hospitals. The infant weighing scale is available and functioning in one hospital out of the 2 other hospitals.

Number of hospitals with available and function of infant weighing scale in hospitals

Type of hospitals	Available	Functioning
Teaching tertiary	13	7
Secondary hospital	15	11
Rural hospital	23	11
Other	1	1
Total	52	30

Almost 60% of all hospitals (52 hospitals) have thermometer, stethoscope and growth chart with only 32 of them are functioning. The thermometer, stethoscope and growth chart are available in less than 40% of teaching hospitals (13 hospitals and functioning only in 9 hospitals), in four fifth of secondary hospitals (16 hospitals and functioning only in 12 hospitals), and in slightly less than three quarters of them (22 hospitals and functioning only in 10 hospitals). The thermometer, stethoscope and growth chart are available and functioning in one hospital out of the 2 other hospitals.

Figure 7.44: Number of hospitals with available and function of thermometer, stethoscope, Growth charts by type of hospital



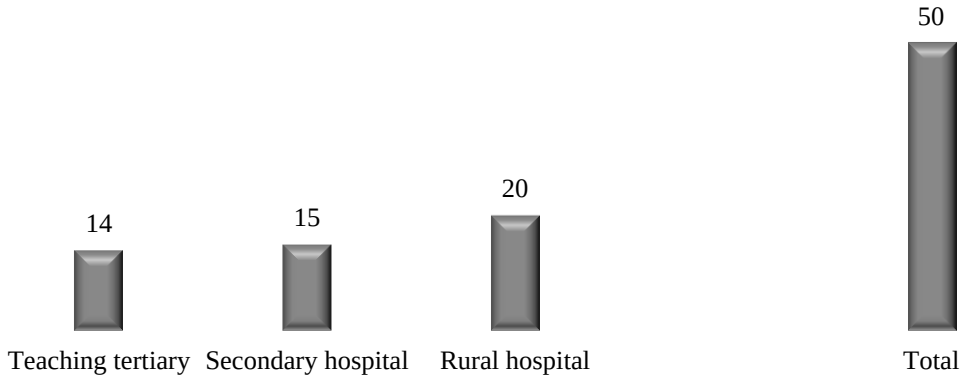
Neonatal monitors/ transport incubators are available in less than half of the 86 hospitals (40 hospitals) with only 19 of them are functioning. Out of the 33 teaching tertiary hospitals, the Neonatal monitors/ transport incubators are available in almost 36% of them (12 hospitals and functioning only in 7 hospitals). Half of secondary hospitals have the-Neonatal monitors/transport incubators available (10 hospitals and functioning only in 7 hospitals). and in almost 58% of rural hospitals the-Neonatal monitors/transport are available (18 hospitals and functioning only in 5 hospitals).

Number of hospitals with available and function of neonatal monitor/transport incubator

Type of hospitals	Available	Functioning
Teaching tertiary	12	7
Secondary hospital	10	7
Rural hospital	18	5
Other	0	0
Total	40	19

Suction machines are available in almost 60% (50 hospitals) of the 86 hospitals. The suction machines are available in almost 42% of teaching hospitals (14 hospitals), in three quarters of secondary hospitals (15 hospitals), and in almost two thirds of rural hospitals (20 hospitals). Suction machine is available in one hospital out of the 2 other hospitals.

Figure 7.45: Number of hospitals with available of suction machines by type of hospital

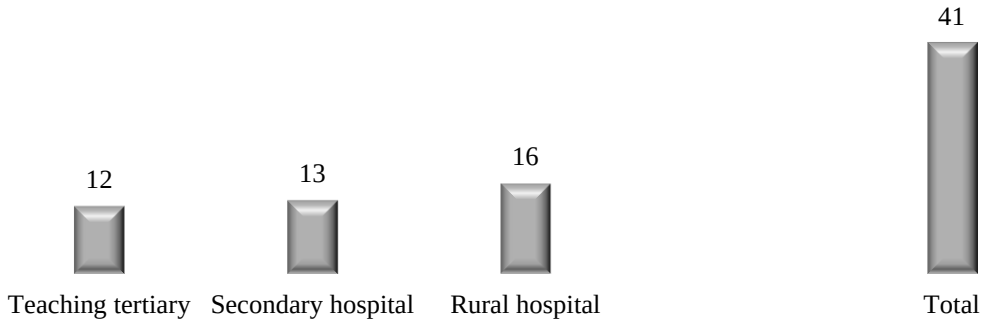


Nebulizers are available in half (43 hospitals) of the 86 hospitals. Tweleve of the teaching tertiary hospitals have the nebulizers available (36%), 15 secondary hospitals have the nebulizers available (75%), and rural hospitals have the nebulizers available in (less than one half). Nebulizer is available in one hospital out of the 2 other hospitals.

Number of hospitals with available of nebulizers	
Type of hospitals	Available
Teaching tertiary	12
Secondary hospital	15
Rural hospital	15
Other	1
Total	43

Incubators and phototherapy lamps/neonatal ventilators are available in less than half (41 hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, the incubators and phototherapy lamps/neonatal ventilators are available in almost 36% of them (12 hospitals). Out of the 20 secondary hospitals, the incubators and phototherapy lamps/neonatal ventilators are available in almost two thirds of them (13 hospitals). Out of the 31 rural hospitals, the incubators and phototherapy lamps/neonatal ventilators are available in slightly more than one half of them (16 hospitals).

Figure 7.46: Number of hospitals with available of incubator and phototherapy lamp in hospital



Continuous positive airway pressure (CPAP) is only available in almost one third (29 hospitals) of the 86 hospitals. Out of the 33 teaching tertiary hospitals, the continuous positive airway pressure (CPAP) is available in one third of them (11 hospitals). Out of the 20 secondary hospitals, the continuous positive airway pressure (CPAP) is available in 40% of them (8 hospitals). Out of the 31 rural hospitals, the Continuous positive airway pressure (CPAP) is available in slightly less than one third of them (10 hospitals).

Number of hospitals with available of continuous positive airway pressure	
Type of hospitals	Available
Teaching tertiary	11
Secondary hospital	8
Rural hospital	10
Other	0
Total	29

7.4.3 Problems facing of pediatric departments

Table A.7.18 shows the mean score of the opinion of the pediatric departments' heads regarding the severity of the problems they are facing at the time of the survey.

The table shows that the mean score of the degree of each of the above mentioned problems is moderate in the opinion of the heads of the departments of all hospitals

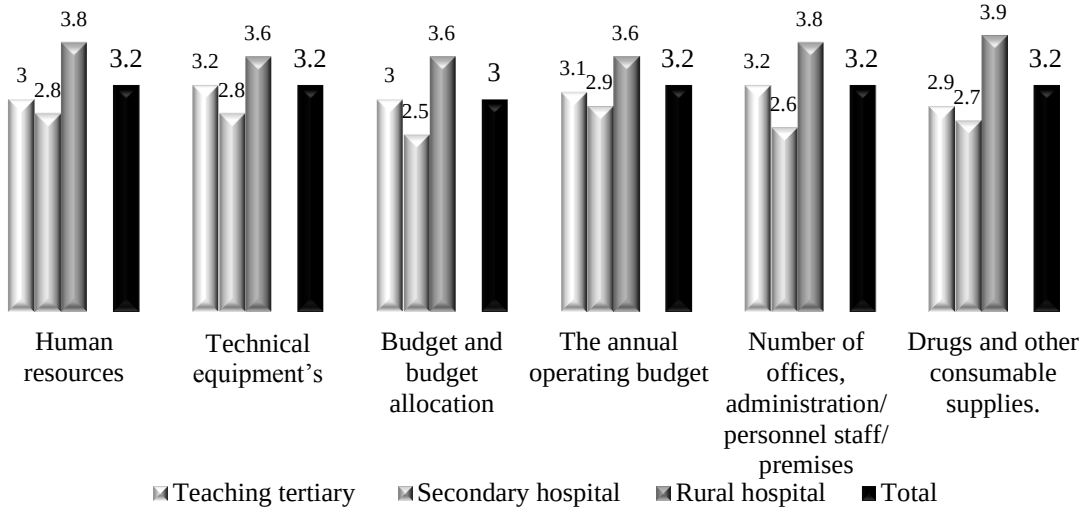
The heads of the pediatric departments of the tertiary teaching hospitals indicated that – in their opinion - they are facing moderate problems regarding all the above categories. This degree of severity of the above mentioned problems is almost similar to the mean score of all hospitals.

While the heads of the pediatric departments of the secondary hospitals indicated that – in their opinion - they are facing mild to moderate problems. This degree of severity of the above mentioned problems is slightly less than the mean score of all hospitals.

The problems are severe in the opinion of the heads of the departments of the rural hospitals, and are much more than the mean score of all hospitals.

The degree of each of the above mentioned problems is considered mild in the opinion of the heads of the pediatric departments of the "other" hospitals. This degree of severity of each of the abovem entioned problems is much less than the mean score of all hospitals.

Figure 7.47: Mean score of severity problem of facing pediatric department services per to problem by type of hosital



From the previous results it is obvious that, the total number pediatric professional and supportive staff is increased post-conflict. The number of outpatient visits, the number of admissions and number of major procedures increased post conflict. Regarding the basic equipment that are either available or functional in pediatric departments, the available data shows that there are critical shortage in these basic equipment in all hospitals.

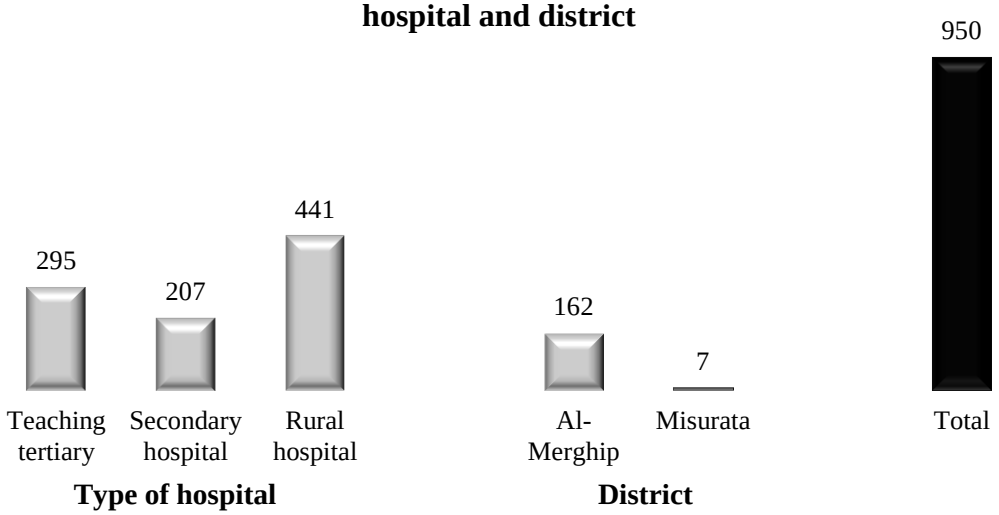
7.5 Operating Theatre

Table A.7.19 shows the current number of operating theater rooms. It also shows pre and post-conflict staff availability and operating theater services utilization by type of hospitals and by district.

All hospitals provide operating theater services in Libya (86 hospitals).

The total number of operating theater rooms in Libya is 950. Forty-six percent of these rooms are located in 3 districts (Benghazi, Al-Merghip, and Tripoli).

Figure 7.48: Number of operating theatre rooms by type of hospital and district



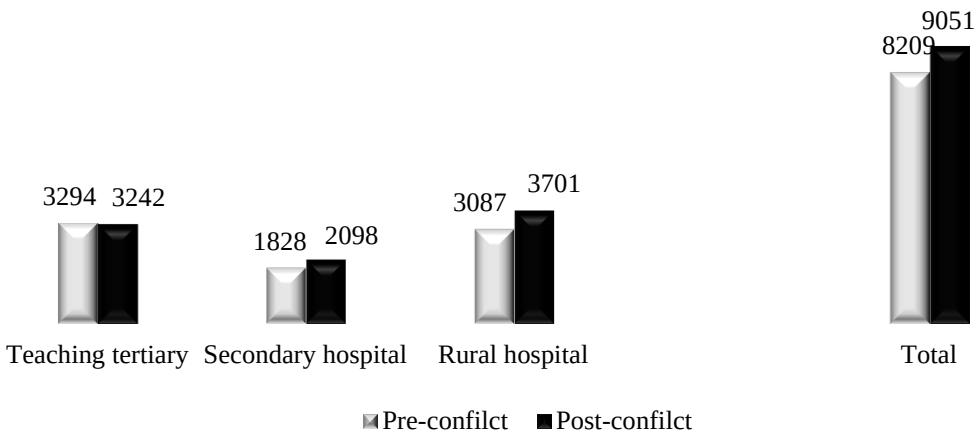
There is small increase in the total number of operating theater staff during the post-conflict phase (6%). This increase was reflected on the number of staff of all types of hospitals exception to teaching hospitals where staff delivered by around 10%.

There is no operating theater staff in Derna districts pre and post-conflict phase. The change of the total number of theatre staff differ by district, where these were increase in number of staff in 10 districts, while there was decrease in 8 districts. The increase was highest in Jaufara (from 389 to 214), while the decline was highest in Tripoli.

In general, the increase in the number of the professional staff is not reflected on the increase in the number of services provided. There is almost 10% increase in the number of elective surgery; however, the number of emergency surgery was decreased by almost 26%. The increase in the number of elective surgery was occurred secondary and rural hospital, while the decrease in the number of emergency surgery was significant in the tertiary hospitals and them in secondary hospitals.

During the post-conflict phase, almost three quarters of the number of elective and emergency surgery were conducted in both tertiary teaching and secondary hospitals and most of the rest was conducted in the rural hospitals.

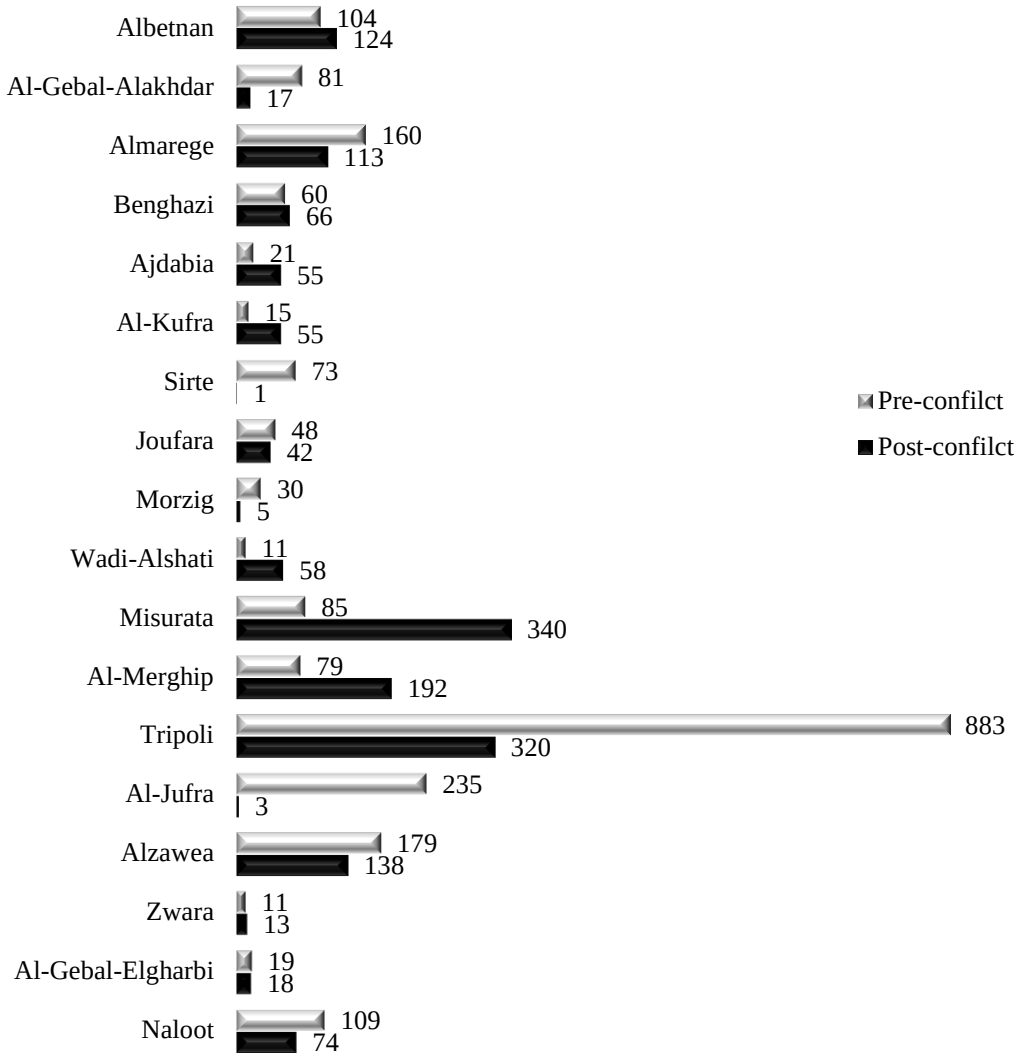
Figure 7.49: Number of elective surgery by type of hospital



No surgery was conducted during the post-conflict phase in 2 districts that have 4 hospitals. Around half of the elective surgeries were conducted only in 4 districts ((Joufara, Al-Jufra, Tripoli

and Benghazi). More than 60% of the emergency surgeries were conducted only in 5 districts ((Misurata, Tripoli, Alzawea, Benghazi, and Albetnan).Number of the operation sessions was increased significantly in Misurata and decreased significantly in Tripoli during the post-conflict phase compared to the pre-conflict one.

Figure 7.50: Number of emergency surgery by district



The results about the operation theaters in Libya shows that the number staff working in operation theaters increased post-conflict. While the number of elective surgery increased in post conflict, it was surprising that the number of emergency operation decreased post conflict.

7.6 Anesthesia Services

7.6.1 Infrastructure of anesthesia departments

Table A.7.20 shows pre and post-conflict staff availability and anesthesia services utilization by type of hospitals and by district.

Number of the hospitals that provide anesthesia services in Libya is 85 hospitals.

Total number of anesthesia staff did not change during the post-conflict phase; however there is a significant (60%) decrease in the number of procedures.

Although there is almost 10% increase in the total number of the tertiary hospitals staff during the

post-conflict phase, the number of procedures has decreased to almost one third of the number of the procedures that were done during the pre-conflict phase.

In the secondary hospitals, there is a 15% decrease in the total number of the staff during the post-conflict phase and the number of procedures has decreased by almost one fifth of the number of the procedures that were done during the pre-conflict phase.

There was decline in the number of anesthesia staff of the rural hospitals during the post-conflict phase by around 22% while there was around 40% decrease in the number of the procedures during the post-conflict phase.

Number of staff in anaesthesia

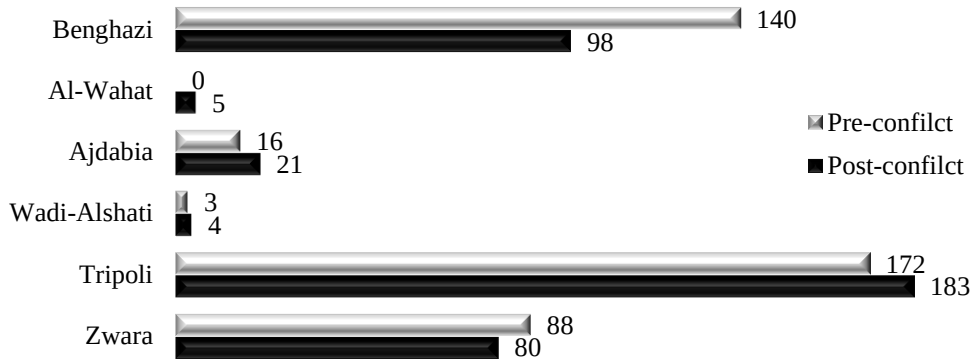
Type of hospitals	Pre	Post
Teaching tertiary	443	488
Secondary hospital	290	255
Rural hospital	57	42
Other	3	4
Total	793	789

More than 55% of the procedures were conducted only in 2 districts (Sirte and Joufara).

During the post-conflict phase, the number of procedures has increased significantly in Sirte while it has decrease drastically in both Benghazi and Tripoli.

There was only one pain control and analgesia clinic during the pre-conflict phase increased to post-conflict. The clinic was located in Al-Gebal-Alakhdar.

Figure 7.51: Number of staff in anesthesia by district



7.6.2 Problems facing of anesthesia departments

Table A.7.21 shows the mean score of the opinion of the operating theaters and anesthesia departments' heads regarding the severity of the problems they are facing at the time of the survey.

The table shows that the mean score of the degree of each of the above mentioned problems is moderate in the opinion of the heads of the operating theaters and anesthesia departments of all hospitals

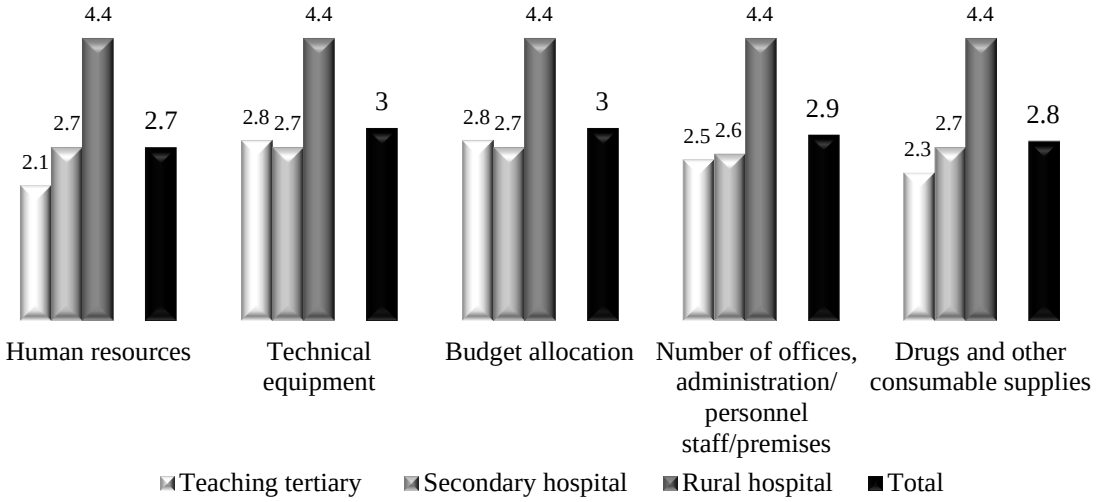
The heads of the operating theaters and anesthesia departments of the tertiary teaching hospitals indicated that – in their opinion - they are facing mild to moderate problems regarding all of the above categories except for the problems of human resources, drugs and other consumable supplies. This degree of severity of the above mentioned problems is less than the mean score of all hospitals.

Similarly, the heads of the operating theaters and anesthesia departments of the secondary hospitals indicated that – in their opinion - they are facing also mild to moderate problems. However, the problems are severe in the opinion of the heads of the operating theaters and anesthesia departments of the rural hospitals. The degree of severity of the above mentioned problems around 4.4 (which is close to 5) indicated very sever problems.

In the opinion of the heads of the operating theaters and anesthesia departments of the "other"

hospitals, the degree was very mild for technical equipment and budget allocation and it was mild for human resources and drugs and other consumable supplies. They considered number of offices administration/personnel staff/premises as moderate problem. The degree of severity of each of the abovementioned problems in the opinion of the heads of the operating theaters and anesthesia departments of the "other" hospitals is less than the mean score of all hospitals.

Figure 7.52: Mean score of severity problem of facing anesthesia department services per to problem by type of hospital



The results about the anesthesia departments in Libya shows that the number staff working in operation theaters slightly decreased post-conflict and the number of procedures decreased sharply in all hospitals.

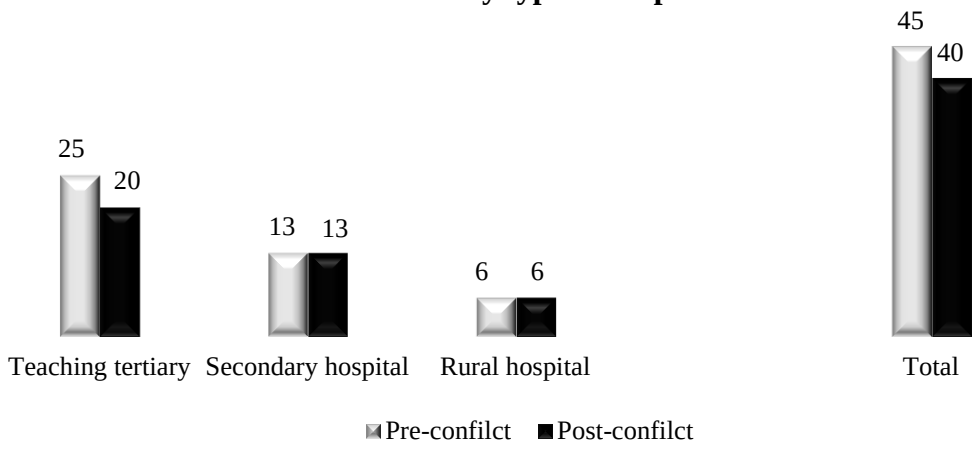
7.7 Radiology Services

7.7.1 Infrastructure of radiology departments

Table A.7.22 shows the number of hospitals in which the radiology services are available and number of served patients in these hospitals during the pre and post-conflict phases by type of hospitals. Table A.7.22 shows the availability of the staff in the radiology department and its related services. It also shows the total number of inpatients and outpatients served by this number of staff and number of functioning equipment in the hospitals radiology departments during the pre and post-conflict phases by type of hospitals.

The table shows that there is more than 10% decrease in the number of hospitals in which the radiology services are available. The table shows that only 40 out of 86 hospitals have the radiology services available during the post-conflict phase while the radiology services were available in 45 hospitals during the pre-conflict phase. The table shows also that this decrease in the number of hospitals was only in the tertiary teaching hospitals type, while there is no change in the number of the other types of hospitals in which the radiology services are available.

Figure 7.53: Number of hospitals in which lab services are available by type of hospital



In spite of the decrease in the number of hospitals in which the radiology services are available during the post-conflict phase, there was a little decrease (10%) in the total number of the patients served. The number of served patients in the rural hospitals was more than the number of patients that was served during the post-conflict phase. There is slightly increase in the number of served patients in the tertiary teaching hospitals. There is a significant decrease in the number of served patients in secondary and "other" hospitals. There was no change in the number of secondary, rural and "other" hospitals in which the radiology services are available during the post-conflict phase that may explain this significant decrease in the number of served patients.

The table shows that there is (8%) increase in the total number of the staff during the post-conflict phase. This increase in the number of staff affected rural and secondary hospitals.

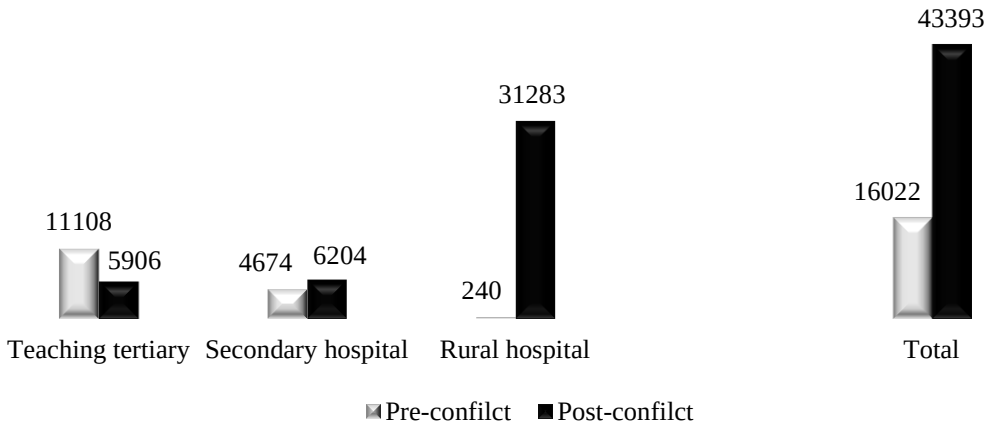
The number of outpatients served during the post-conflict phase was three times more than the number during the pre-conflict phase. There was a significant increase in the number of outpatient served by secondary hospitals, while most of this increase was in tertiary and rural hospitals.

Number of outpatient served

Type of hospitals	Pre	Post
Teaching tertiary	2496	6647
Secondary hospital	4150	10668
Rural hospital	829	4522
Other	0	12
Total	7475	21849

There was almost 3 times increase in the number of inpatients served during the post-conflict phase. There was a significant increase in the number of inpatient served by rural hospitals, while this decrease was in tertiary hospitals.

Figure 7.54: Number of inpatient served by type of hospital



There was almost (13%) increase in the number of the functioning equipment in the hospitals during the post-conflict phase. This increase affected rural and secondary hospitals, while there was an decrease in the number of the functioning equipment in the tertiary hospitals.

7.7.2 Availability and utilization of equipment in radiology department

No pre – post-conflict number of served patients. Brachy therapy is not available in secondary hospitals, but there is a functioning one.

Table A.7.23 shows the availability and functioning of radiation oncology services (Cobalt – 60, Linear Accelerator and Brachy Therapy) and their utilization.

The table shows that all over Libya there are 3 Cobalt – 60 are available and only one of them are functioning, there are also 3 Linear Accelerators, only 2 of them are functioning and there are only one Brachy Therapy, while it isn't functioning.

The functioning Cobalt – 60 is serving the tertiary hospitals patients in Tripoli. Where the other two not - functioning one located in teaching hospital in Benghazi and other one located in the other hospital in Zwara. The number of served patients by this divice was 222 patients.

The 2 functioning Linear Accelerators one is serving the tertiary and other one is serving the other hospitals patients, they are located in Benghazi and Tripoli districts. One of the not - functioning Linear Accelerators is located in Zwara.

No one of the functioning Brachy therapy is serving the hospitals patients, while this is located in Zwara.

From the previous results about radiology departments, one can conclude that, although the number of hospitals with available radiology services decreased post- conflict, the number of staff increased the number of outpatients as well as the number of inpatients increased.

7.8 Lab services

7.8.1 Infrastructure of lab department

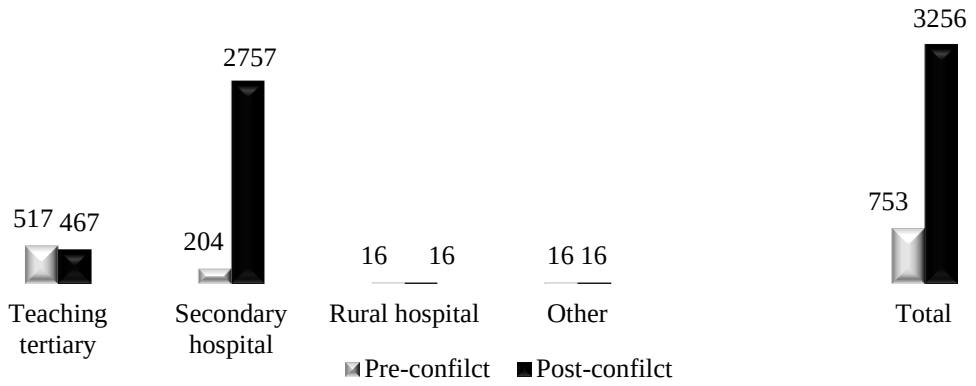
Table A.7.24 shows the number of hospitals in which the lab services are available and number of served patients in these hospitals during the pre and post-conflict phases by type of hospitals. The table shows the availability of the staff in the lab department and its related services. It also shows the total number of inpatients and outpatients served by this number of staff and number of functioning equipment in the hospitals lab departments during the pre and post-conflict phases by type of hospitals.

The table shows that there is inappreciable increase in the number of hospitals in which the lab services are available. The table shows that only 38 out of 86 hospitals have the lab services available during the post-conflict phase while the lab services were available in 45 hospitals during the pre-conflict phase.

In spite of the decrease in the number of hospitals in which the lab services are available during the post-conflict phase, there was more than 39% increase in the total number of the patients served. There is almost 97% increase in the number of served patients in the rural hospitals during the post-conflict phase in spite of the decrease in the number of hospitals. There is also slight increase in the number of served patients in the tertiary teaching hospitals in spite of the 20% decrease in the number of hospitals. There is a slight decrease in the number of served patients in secondary hospitals with only one hospital less during the post-conflict phase.

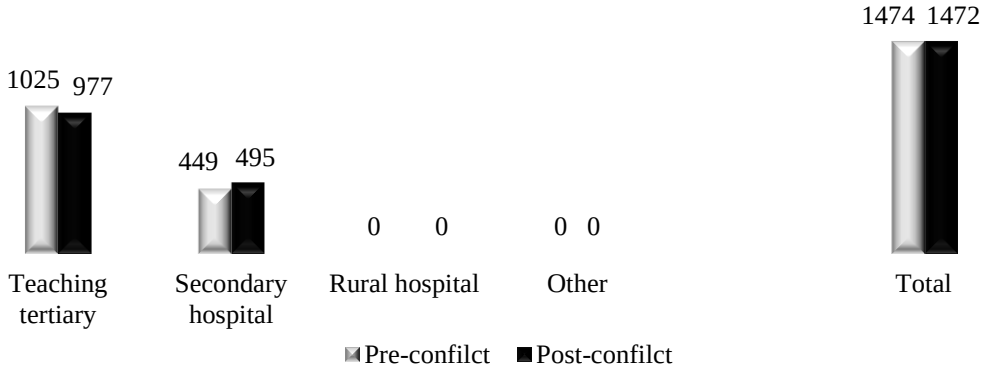
The table shows that there is a significant increase in the total number of the staff during the post-conflict phase. This increase in the number of staff affected the secondary hospitals, while there is almost 10% decrease in the staff of the tertiary hospitals. During the pre and post-conflict phases, the number of staff didn't change and it was 16 in both the rural hospitals and the "other" hospitals.

Figure 7.55: Number of lab department staff by type of hospital



In spite of the increase in the number of staff, the number of inpatients served during the post-conflict phase was almost the same number as during the pre-conflict phase. There was a minimal decrease in the number of inpatients served by tertiary hospitals, while there was a minimal increase in number of patients served by secondary hospitals. The table shows that there were no inpatients served by either rural or other hospitals during both pre and post-conflict phases.

Figure 7.56: Number of served inpatients by lad services by type of hospital



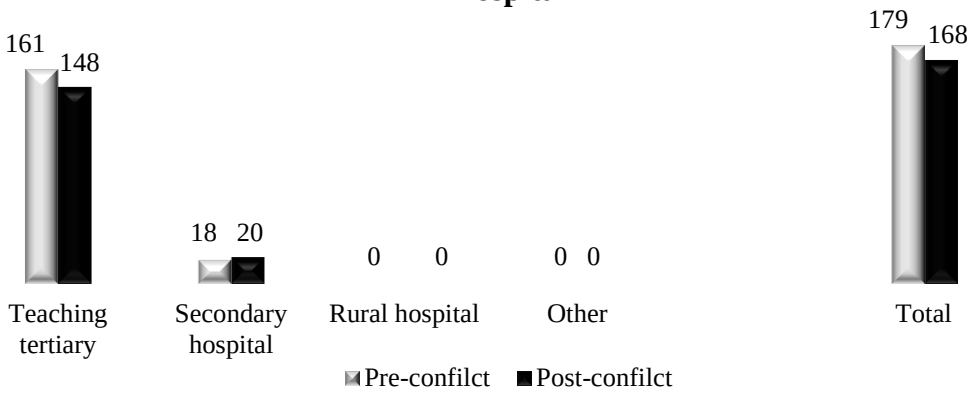
There was a little decrease in the number of outpatients served by laf services during the post-conflict phase, while there was a minimal increase in the number of outpatients served by tertiary hospitals. The table shows that there were no outpatients served by either rural or other hospitals during both pre-and post-conflict phases.

Number of outpatient

Type of hospitals	Pre	Post
Teaching tertiary	3566	3660
Secondary hospital	1274	883
Rural hospital	0	0
Other	0	0
Total	4840	4543

There was 6% decrease in the number of the functioning equipment in the hospitals during the post-conflict phase. This decrease affected only the tertiary hospitals, while there was a 11% increase in the number of the functioning equipment in secondary hospitals.

Figure 7.57: Number of functioning equipment by type of hospital

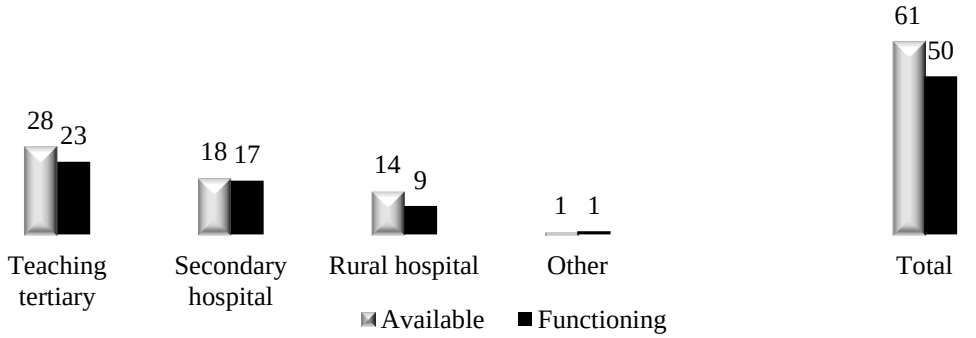


7.8.2 Availability of equipment in laboratory basic departmental

The table A.7.25 shows numbers of hospitals that have basic laboratory department equipment and their functional state by hospital type. The table shows that no single hospital type has all the basic laboratory department equipment, also not all the available equipment is functioning.

Out of 86 hospitals, almost 71% of them (61 hospitals) have automated hematology system only 50 of them are functioning. Out of the 33 teaching tertiary hospitals, the automated hematology system is available in almost 85% of them (28 hospitals) and functioning only in 23 hospitals. Out of the 20 secondary hospitals, the automated hematology system is available in 90% of them (18 hospitals) and functioning in 17 hospitals. Out of the 31 rural hospitals, the automated hematology system is available in 45% of them of them (14 hospitals) and functioning only in 9 hospitals. The Automated hematology system is available and functioning in 1 hospital out of the 2 other hospitals.

Figure 7.58: Number of hospitals with available and function of automated hematology system by type of hospital



Out of 86 hospitals, more than 63%of them (55 hospitals) have automated biochemistry system only 41 of them are functioning. Out of the 33 teaching tertiary hospitals, the automated biochemistry system is available in almost 79% of them (26 hospitals) and only 23 of them are functioning. Out of the 20 secondary hospitals, the automated biochemistry system is available in 80% of them (16 hospitals) and functioning in 15 hospitals. Out of the 31 rural hospitals, the automated biochemistry system is available in almost 39% of them (12 hospitals) and functioning only in 3 hospitals. The Automated biochemistry system is available and not functioning in one hospital out of the 2 other hospitals.

Number of hospitals with available and function of automated biochemistry system

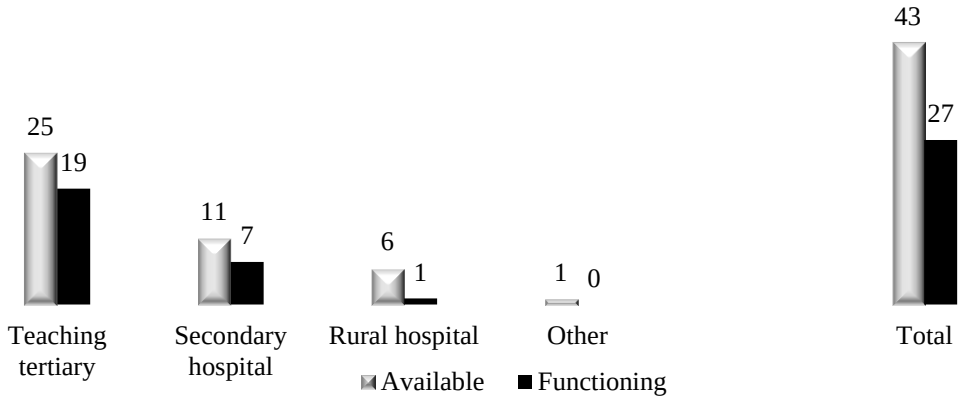
Type of hospitals	Available	Functioning
Teaching tertiary	26	23
Secondary hospital	16	15
Rural hospital	12	3
Other	1	0
Total	55	41

Out of 86 hospitals, half of them (43 hospitals) have automated immunology system only 27 of them are functioning. Out of the 33 teaching tertiary hospitals, the automated immunology system is available in 75% of them (25 hospitals) and only 19 of them are functioning. Out of the 20 secondary hospitals, the automated immunology system is available in 55% of them (11 hospitals) and only 7 of them are functioning. Out of the 31 rural hospitals, the automated immunology system is available in almost one fifth of them of them (6 hospitals) and functioning only in 1 hospital. The automated immunology system is available and not functioning in one hospital out of the 2 other hospitals.

Number of hospitals with available and function of automated ELISA system

Type of hospitals	Available	Functioning
Teaching tertiary	21	15
Secondary hospital	15	11
Rural hospital	8	1
Other	1	0
Total	45	27

Figure 7.59: Number of hospitals with available and function of automated immunology system by type of hospital

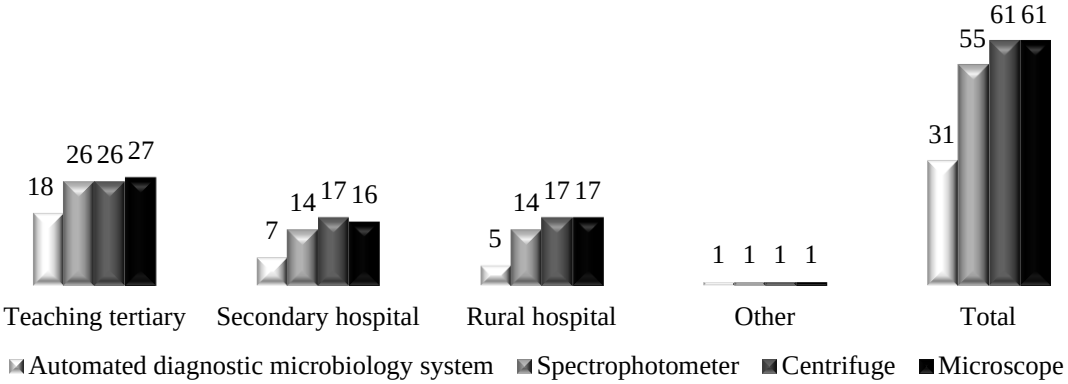


Out of 86 hospitals, more than half of them (45 hospitals) have fully automated ELISA system only 27 of them are functioning. Out of the 33 teaching tertiary hospitals, the fully automated ELISA system is available in almost two third of them (21 hospitals) and only 15 of them are functioning. Out of the 20 secondary hospitals, the fully automated ELISA system is available in 70% of them (15 hospitals) and only 11 of them are functioning. Out of the 31 rural hospitals, the fully automated ELISA system is available in more than 20% of them of them (8 hospitals) and functioning only in only one hospital. The fully automated ELISA system is available and not functioning in one hospital out of the 2 other hospitals.

Out of 86 hospitals, more than one third of them (31 hospitals) have automated diagnostic microbiology system. Out of the 33 teaching tertiary hospitals, the automated diagnostic microbiology system is available in almost 55% of them (18 hospitals). Out of the 20 secondary hospitals, the automated diagnostic microbiology system is available in 35% of them (7 hospitals). Out of the 31 rural hospitals, the automated diagnostic microbiology system is available in less than 20% of them (5 hospitals). The automated diagnostic microbiology system is available in only one of the other hospitals.

Out of 86 hospitals, 64% of them (55 hospitals) have spectrophotometers. Out of the 33 teaching tertiary hospitals, the spectrophotometers are available in 79% of them (26 hospitals). Out of the 20 secondary hospitals, the spectrophotometers are available in 70% of them (14 hospitals). Out of the 31 rural hospitals, the spectrophotometers are available in less than 45% of them (14 hospitals). The spectrophotometer is available in only 1 of the other hospitals.

Figure 7.60: Number of hospitals with available of other equipments in laboratory basic departmental



Out of 86 hospitals, more than 70% of them (61 hospitals) have centrifuges. Out of the 33 teaching tertiary hospitals, the centrifuges are available in 79% of them (26 hospitals). Out of the 20 secondary hospitals, the centrifuges are available in 85% of them (17 hospitals). Out of the 31 rural hospitals, the centrifuges are available in 55% of them (17 hospitals). The centrifuge is available in only 1 of the other hospitals.

Out of 86 hospitals, 70% of them (61 hospitals) have microscopes. Out of the 33 teaching tertiary hospitals, the microscopes are available in less than 81% of them (27 hospitals). Out of the 20 secondary hospitals, the microscopes are available in 80% of them (16 hospitals). Out of the 31 rural hospitals, the microscopes are available in more than half of them (17 hospitals). The microscope is available in only 1 of the other hospitals.

From the results about lab services in Libya hospitals we can conclude that, the number of staff working in lab services is increased post-conflict. Although the number of outpatient's visits and the number of inpatients decreased post-conflict, the number of served patients increased post-conflict. Libya hospitals show severe shortage of laboratory equipment either that available or functional.

7.9 Intensive Care Units Services (ICU)

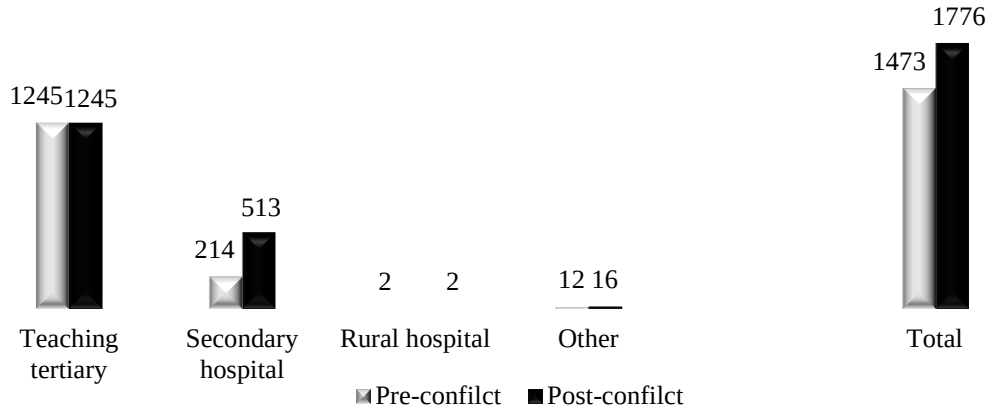
7.9.1 Infrastructure of ICU department

Table A.7.26 shows the availability of the staff in the ICU departments in the hospitals. It also shows the total number of inpatients and outpatients served by this number of staff and number of the functioning equipment in the hospitals ICU departments during the pre and post-conflict phases by type of hospitals.

The table shows that there is almost 21% increase in the total number of the staff during the post-conflict phase. This increase in the number of staff affected the secondary hospitals, where there is a double increase in the staff of the secondary hospitals, while there is no change in the number of staff of the tertiary and rural hospitals. In addition to, the number of staff of the other hospitals was 12 during the pre-conflict phase and increased to 16 during the post-conflict phase.

Almost all the patients are serving in both tertiary and secondary hospitals, while there are no patients in the other hospitals. Almost 60% of the staff during the post-conflict phase is working in only 4 districts (Tripoli, Zwara, Benghazi and Misurata). No ICU staff in 10 districts during both pre and post-conflict phases.

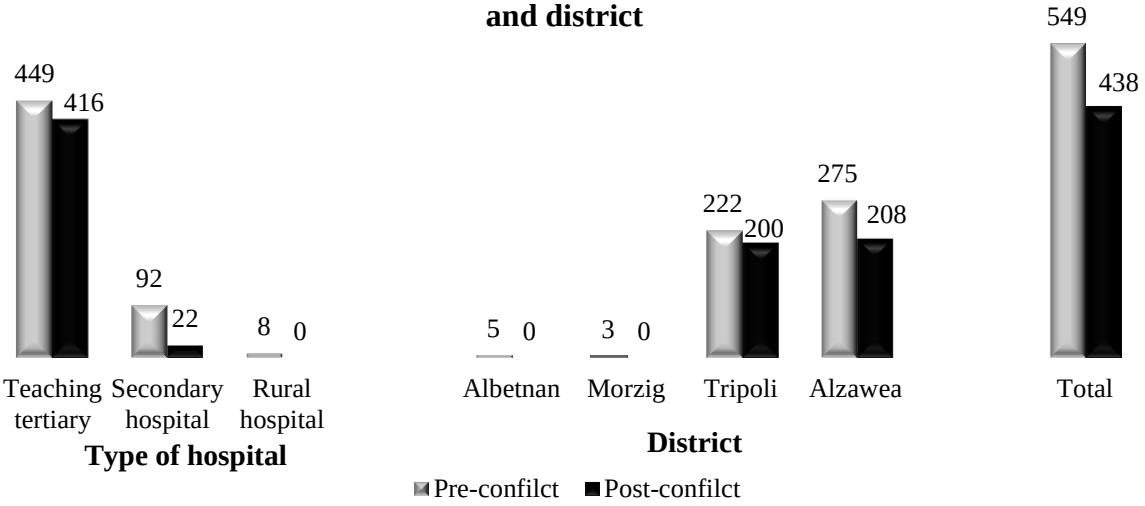
Figure 7.61: Number of staff in ICU department by type of hospital



Most of the ICU outpatient visits during post-conflict were conducted in tertiary hospitals and in only 2 districts (Al-Zawea and Tripoli).

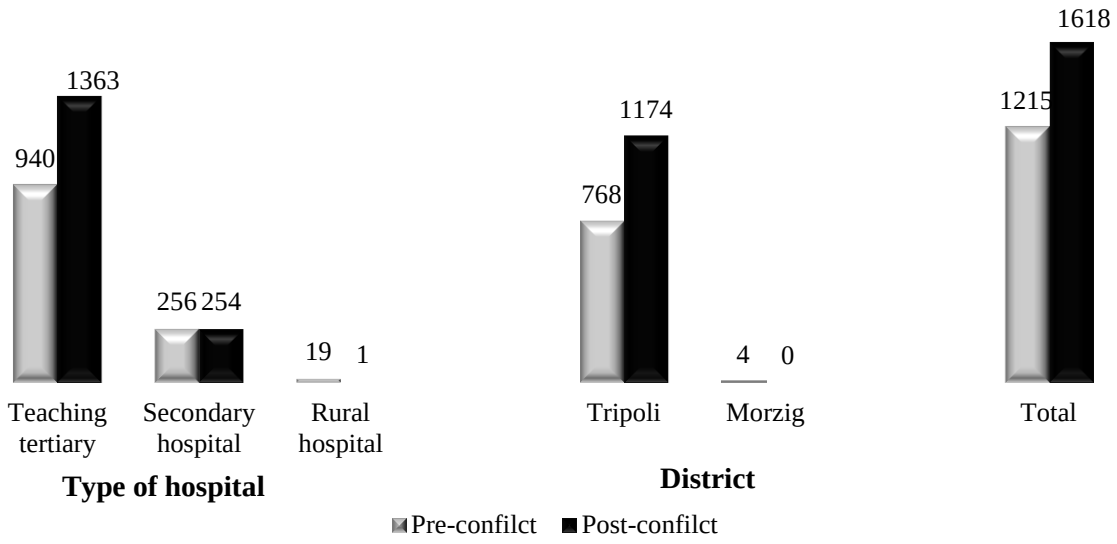
The number of ICU outpatient visits during the post-conflict phase was 20% less than the number of the visits during the pre-conflict phase. There was a minimal decrease in the number of outpatient visits by tertiary hospitals during the post-conflict phase, while there were only 22 outpatient visits during the post-conflict phase served by secondary hospitals in contrast to 92 outpatient visits during the pre-conflict phase. The table shows that there were no outpatients served by either rural or other hospitals during the post-conflict phase.

Figure 7.62: Number of ICU outpatient visits by type of hospital and district



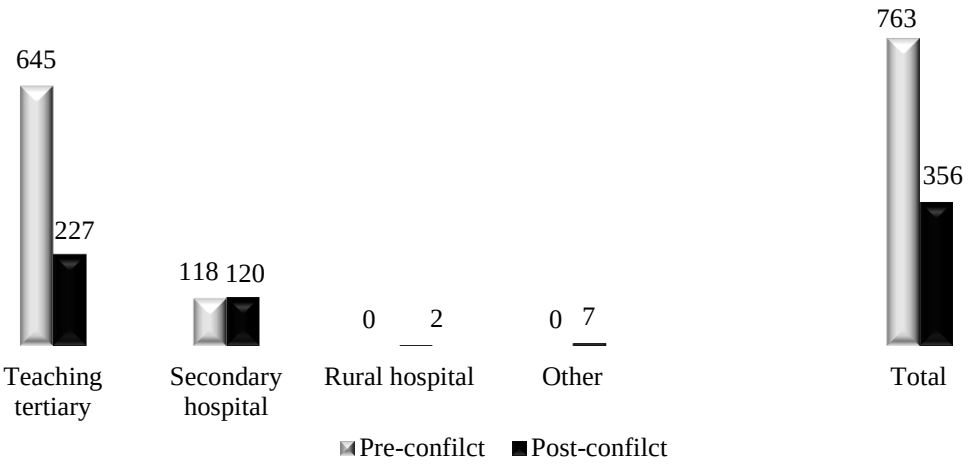
During the post-conflict phase, there was more than 33% increase in the number of ICU inpatients served than the number served during the pre-conflict phase. There was 45% increase in the number of inpatients served by tertiary hospitals, while there was a little change in number of patients served by secondary hospitals, while there was a significant decrease in number of patients served by rural hospitals. The table shows that there were no inpatients served by other hospitals during the post-conflict phase.

Figure 7.63: Number of ICU inpatient by type of hospital and district



There was almost 53% decrease in the number of the functioning equipment in the ICU units in the hospitals during the post-conflict phase. This decrease affected only the tertiary hospitals where the functioning equipment decrease by more than 50%, while there was a minimal increase in the number of the functioning equipment in secondary hospitals.

Figure 7.64: Number of functioning equipment in ICU department by type of hospital



7.9.2 Problems facing of ICU department

Table A.7.27 shows the mean score of the opinion of the radiology, laboratory and matron departments' heads regarding the severity of the problems they are facing at the time of the survey.

The table shows that the mean score of the degree of each of the all above mentioned problems is mild in the opinion of the heads of the radiology, laboratory and matron departments of all hospitals

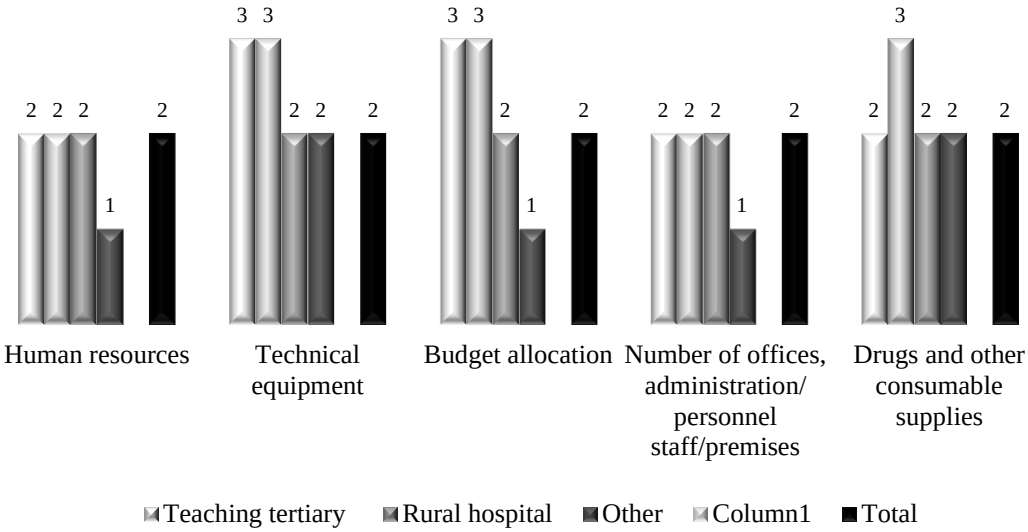
The heads of the radiology, laboratory and matron departments of the tertiary teaching hospitals indicated that – in their opinion - they are facing mild problems regarding human resources, number of offices administration/personnel staff/premises and drugs and other consumable supplies. They considered technical equipment and budget allocation as moderate problems. This degree of severity of the above mentioned problems is more than the mean score of all hospitals.

Similarly, the heads of the radiology, laboratory and matron departments of the secondary hospitals indicated that – in their opinion - they are facing mild problems regarding human resources and number of offices administration/personnel staff/premises. They considered technical equipment, budget allocation and drugs and other consumable supplies as moderate problems. Also, this degree of severity of the above mentioned problems is more than the mean score of all hospitals.

All the problems are mild in the opinion of the heads of the radiology, laboratory and matron departments of the rural hospitals. The degree of severity of the abovementioned problems is equal to the mean score of all hospitals.

In the opinion of the heads of the radiology, laboratory and matron departments of the "other" hospitals, the degree was very mild for human resources, budget allocation and number of offices administration/personnel staff/premises. They considered technical equipment and drugs and other consumable supplies as mild problems. The degree of severity of each of the above mentioned problems in the opinion of the heads of the radiology, laboratory and matron departments of the "other" hospitals is less than the mean score of all hospitals.

Figure 7.65: Mean score of severity problem of facing radiology, laboratory, matron department services per to problem by type of hospital



From the results about ICU in Libya hospitals one can conclude that, the number of staff working in ICU as well as the number of inpatients and the number of served patients increased post-conflict. But the ICU units in Libya hospitals are facing severe shortage in the equipment as the number of functional equipment decrease to 50% post-conflict.

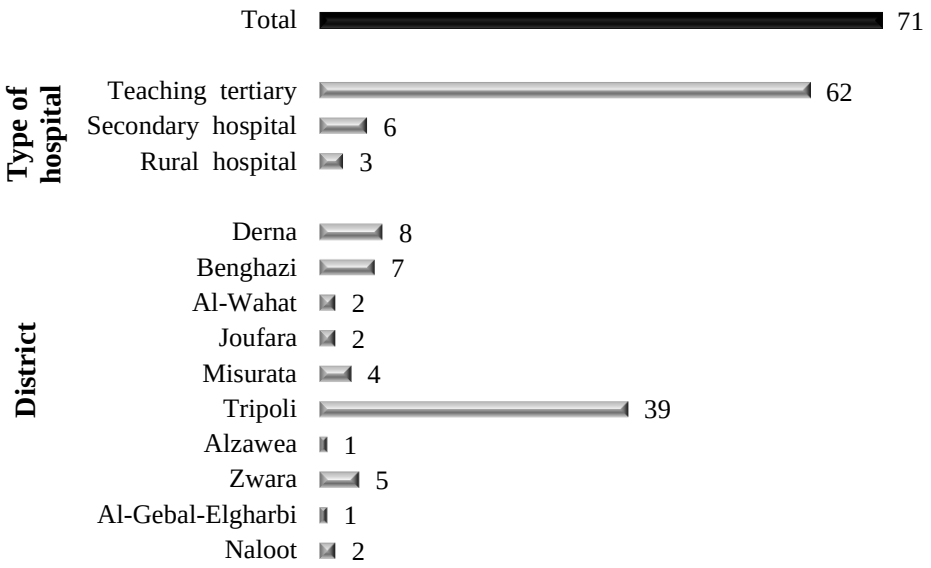
7.10 Dentist

Table A.7.28 shows the current number of dental units. It also shows pre and post-conflict staff availability and numbers of the patients by type of hospitals and by district.

Number of the hospitals that provide dentist service in Libya is 84 hospitals. Almost 56% of these hospitals are located only in 2 districts (Derna and Tripoli).

The total number of dental units in Libya is 71. Almost all of these dental units is located in both teaching tertiary hospitals and secondary hospitals with only 3 units located in rural hospitals. More than 55% of the units are located only in 2 districts (Derna and Tripoli).

Figure 7.66: Number of dental units by type of hospital and district

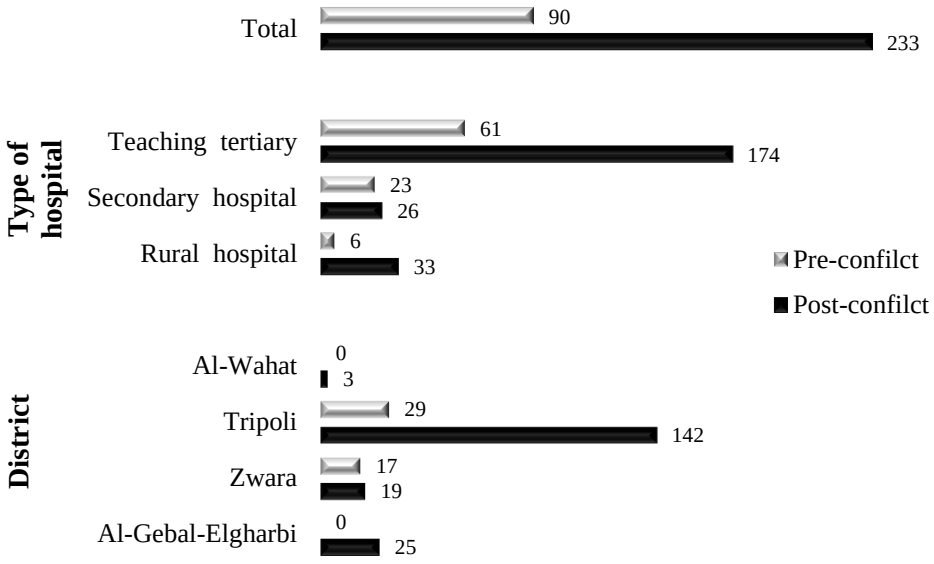


There is more than 45% increase in the total number of staff during the post-conflict phase. During the post-conflict phase, there is three times increase in the number of staff working in the tertiary teaching hospitals.

There is no dental services staff in 15 districts both during the pre and the post-conflict phases. Almost 61% of the dental staff is working only in Tripoli during the post-conflict phases.

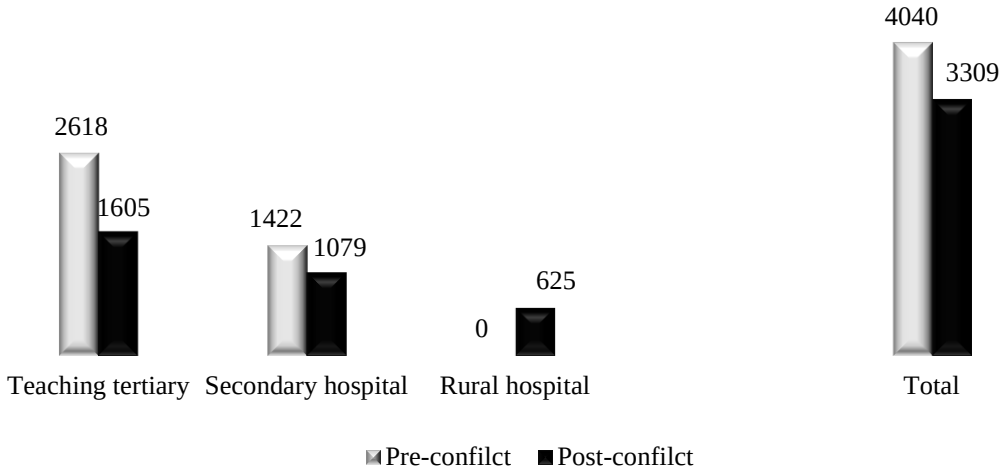
In spite of the 45% increase in the number of the staff, there was a 18% decrease in the number of the patients served during the post-conflict phase.

Figure 7.67: Number of dental' staff by type of hospital and district



During the post-conflict phase, almost 80% of the served patients were conducted in both secondaty and tertiary teaching hospitals and remaining 20% were conducted in the rural hospitals. While during the pre-conflict phase, almost two third of the served patients were conducted in tertiary hospitals.

Figure 7.68: Number of patients served in dental department by type of hospital



No patients were served during the post-conflict phase in 15 districts that have 36 dental units. Almost 92% of the patients were served in only in 5 districts (Al-Zawea, Al-Gebal-Elgharbi, Tripoli, Benghazi and Zwara).

From the results about dental departments in Libya hospitals, one can conclude that, although the number of staff working in dental departments increases, the number of served patients decreased post-conflict in all hospitals.

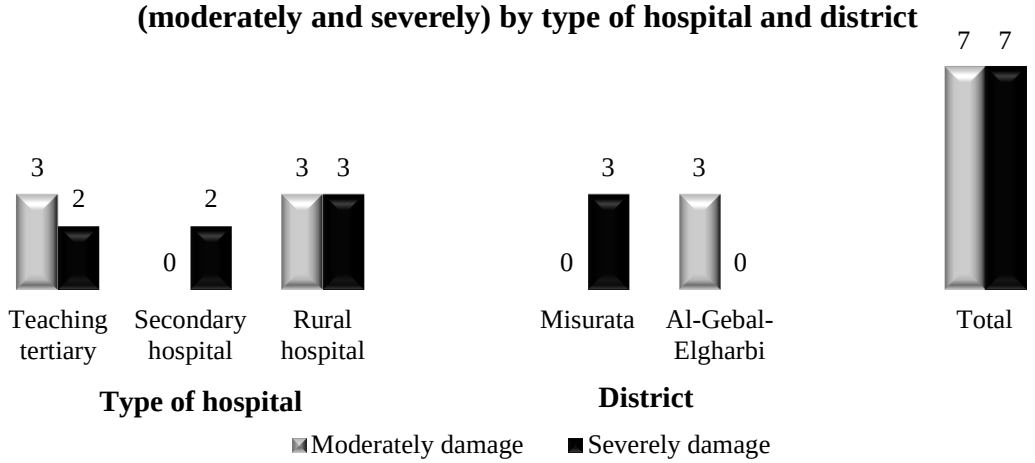
8. Effect of Conflict

One of the main objectives of the hospitals survey was to assess the effect of conflict on the services provided by the hospitals. Accordingly, some questions were asked to measure the situation pre and post-conflict. This section summarizes the main findings of assessing the pre-post-conflict including the outstanding problems.

8.1 Numbers of Facilities and Main Departments Affected

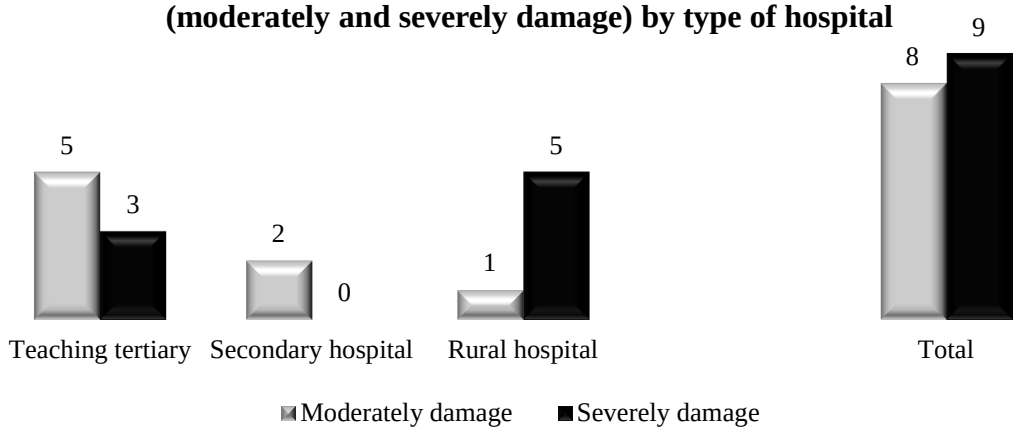
The results presented in section 2 indicated that 14 hospitals were with damaged building (moderately and severely) post-conflict which represents 16% of all hospitals. The most affected hospitals were Rural hospitals were (6 hospitals), followed by Teaching hospitals (5 hospitals). By district, Misurata was the most affect one where 3 hospitals out of 4 were damaged followed by Al-Gebal Elgharbi (3 out of 7 were damaged).

Figure 8.1: Number of hospitals that were damaged building (moderately and severely) by type of hospital and district



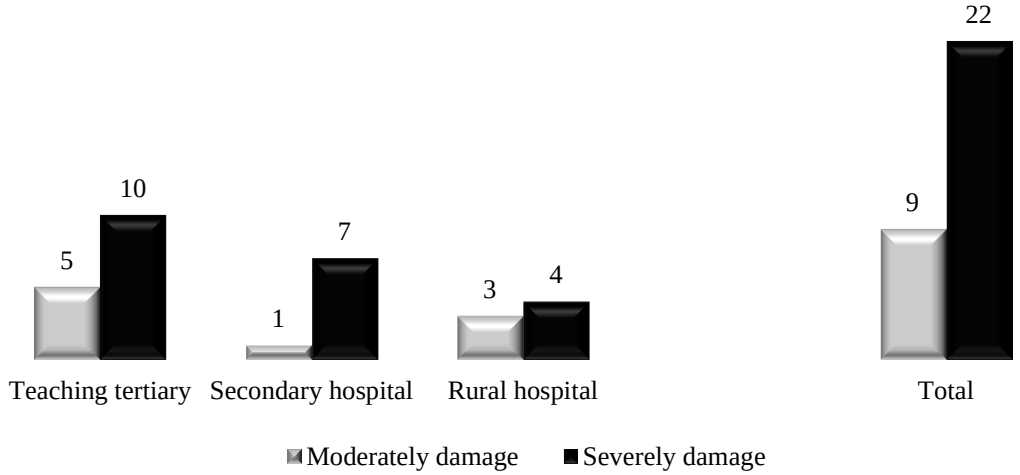
Data was collected related to the effect of conflict on supplies at hospitals. Figure 8.2 present number and percent of hospitals that were damaged (moderately and severely) in Central Sterilization Unit (CSU) and Ambulance service department by hospital type and district. The central sterilization unit of 17 hospitals (20% of hospital in over Libya) was affected post-conflict, most of these hospitals were Teaching hospitals (8 hospitals), and followed by rural hospitals (6 hospitals). By district, Tripoli has the highest number of hospitals with CSU damaged (4 out of 12 hospitals).

Figure 8.2: Number of Central Sterilization Unit (CSU) (moderately and severely damage) by type of hospital



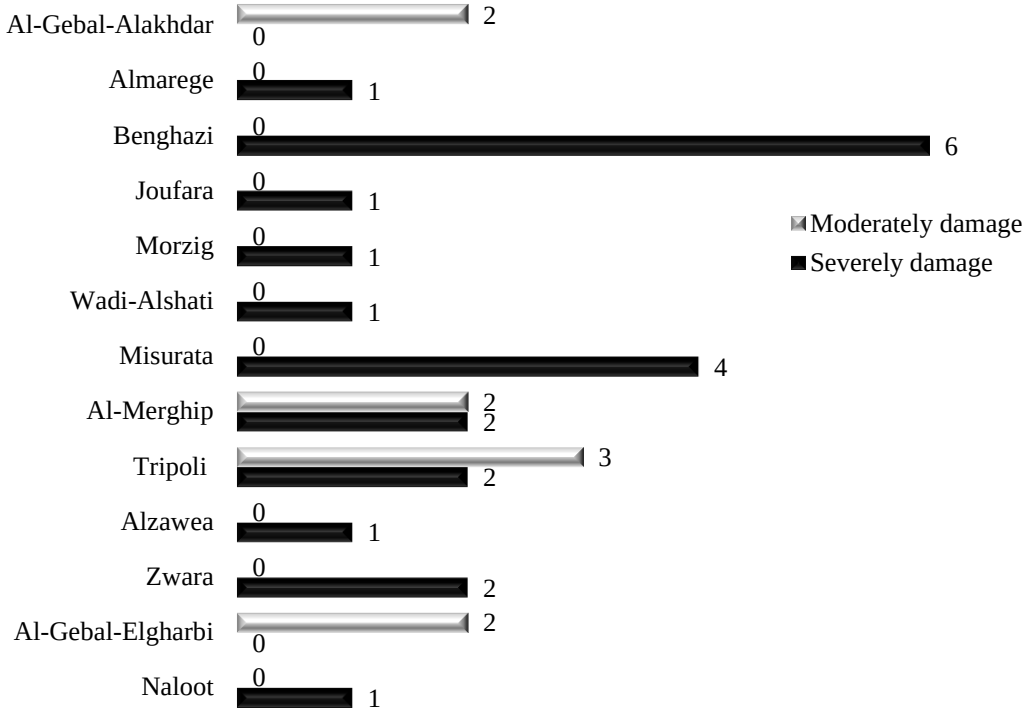
The number of hospitals with Ambulance service department damaged are presented in Figure 8.3 The figure show that 31 hospitals (36%) have ambulance service department damaged, with the highest figure observed among Teaching hospitals, where 15 teaching hospitals have ambulance services department damaged (5 moderately and 10 severely) which represent 45% of the teaching hospitals, followed by the secondary hospitals where 8 out of 20 secondary hospitals have ambulance service department damaged.

Figure 8.3: Number of ambulance service department (moderately and severely damage) by type of hospital



By district, as for CSU Tripoli has the highest number of ambulance service department damaged, where 5 out of the 12 hospitals (42%) in Tripoli have ambulance service department damaged (moderately or severely). However, all hospitals in Misurata district (4 hospitals) have ambulance service department severely damaged.

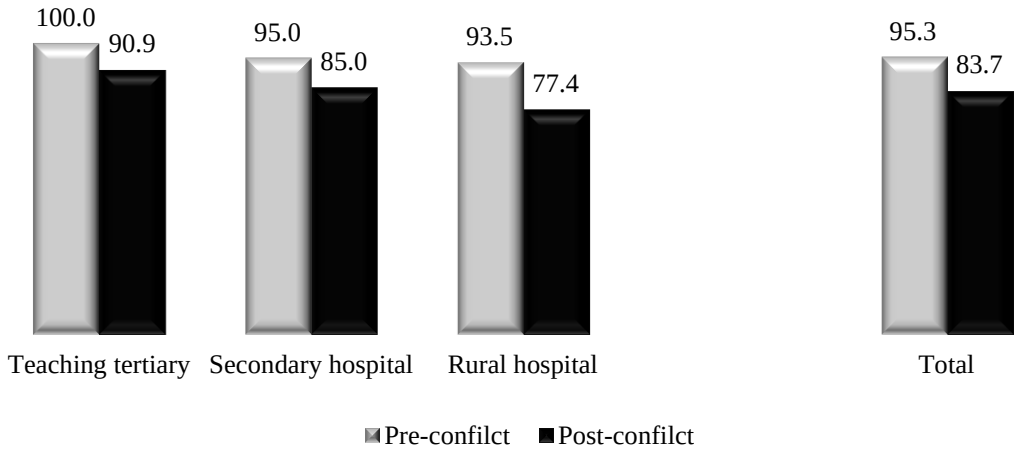
Figure 8.4: Number of ambulance service department (moderately and severely damage) by district



8.2 Availability of Pharmacy Departments

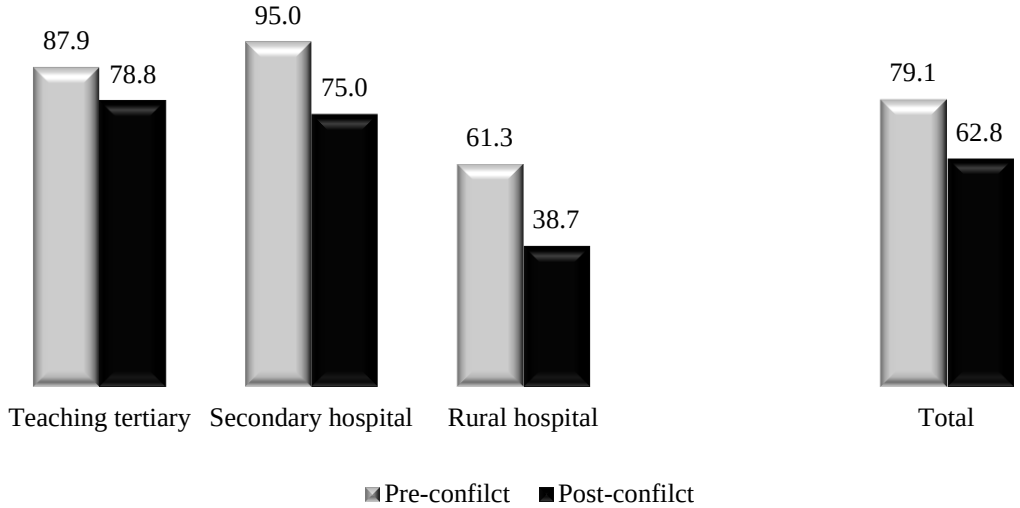
Overall, results indicated that the availability of pharmacy department at hospitals declined post-conflict from 95% of hospitals to 84%. The decline was much clearer in rural hospitals where availability of pharmacy declined from 94% pre-conflict to only 77% post-conflict.

Figure 8.5: Availability of pharmacy department by type of hospital



Shortage of drugs showed different results, where 79% of hospitals reported that there was shortage of drugs pre-conflict, decline to around two–third post-conflict. The improve in the availability of drugs was higher in rural hospitals where shortage of drugs declined from 61% of hospitals to 39% only, also shortage of drugs in secondary hospitals declined from 95% of hospitals to 75% of hospitals, while the declined in Teaching hospitals was only 9% (from 88% to 79%).

Figure 8.6: Percentage of hospitals with shortage of drugs by type of hospital



8.3 Effect on Health Workforce

Generally, the number of physicians and support staff has increased for all types of surgical specialties (expect support staff for anesthetists) post-conflict compared with pre-conflict. Also,

physician's density has increased for all types of surgical specialties.

By type of hospital, results have shown that generally the number of physicians and support staff has increased in all types of hospitals, however for some surgical specialties the number of either physicians or support staff has decreased post-conflict in comparison with pre-conflict. Moreover, the increase in number of physicians and support staff post-conflict was clear among rural hospitals in comparison with other types of hospitals.

By district, results were also consistent with what was observed by type of hospital, generally the number of physicians and support staff has increased in all types of hospitals, however for some surgical specialties the number of either physicians or support staff has decreased post-conflict in comparison with pre-conflict. For example, the number of support staff has increased significantly in Ajdabia post-conflict in comparison with pre-conflict, yet the number of support staff for OB/GYN has decreaed. On the contrary, in Benghazi the number of support staff for OB/GYN has almost doubled post-conflict compared with pre-conflict.

Total number of physicians and support staff in all hospitals

	Number of physicians		Number of support staff	
	Pre	Post	Pre	Post
Type of hospital				
Teaching tertiary	7580	8332	7890	6271
Secondary hospital	1192	2055	4096	4530
Rural hospital	4673	6055	8060	9858
Other	88	424	189	105
District				
Albetnan	292	1005	449	866
Derna	1	1	13	13
Al-Gebal-Alakhdar	1030	356	639	705
Almarege	116	138	245	581
Benghazi	2829	3266	3098	2240
Al-Wahat	33	160	244	440
Ajdabia	208	206	504	1842
Al-Kufra	90	142	167	297
Sirte	563	754	770	273
Joufara	239	236	327	342
Morzig	236	284	402	456
Sebha	91	401	555	558
Wadi-Alshati	600	570	628	1311
Misurata	430	1092	1162	1285
Al-Merghip	919	1531	1718	1178
Tripoli	1967	1469	1323	906
Al-Jufra	1001	506	2433	2491
Alzawea	335	353	396	440
Zwara	1344	2392	2323	2327
Al-Gebal-Elgharbi	846	1478	2689	2059
Naloot	363	526	150	154
Total	13533	16866	20235	20764

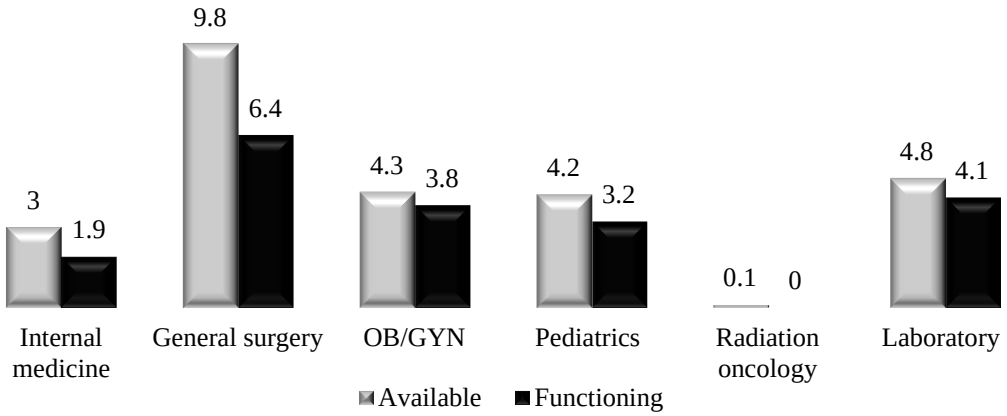
Physicians' density in general seems to be low in Derna, Almarege, Al-Kufra and Al-Wahat, which suggest that these three districts need an increase in number of physicians. In other districts, the physician's density differ from one surgical specialty to another, where in some specialties the physician's density is high while for others it seems to be low. Moreover, the physician's density is high in Tripoli, Zwara, and Benghazi.

8.4 Effect on Equipment Availability

The availability of working equipments necessary is essentials to provide high quality of service. The availability of specific equipments for each service provided at the hospital were investigated as well as its functioning.

Figure 8.7 showed that the mean number of equipments available and functioning per service provided at the interviewed hospitals. The questionnaire included questions on the availability of 53 equipments for the different departments. The results indicated that only half of those equipments are available (mean number of equipment available 26.2) and 50% of the available equipments are functioning. However, the availability of equipments differs significantly per service departments. The equipments of general surgery services department are available more than other departments equipments, where the mean number of equipments available is 9.8 out of 14, while the equipments of OB/GYN departments (15 equipments) are the least to be available (mean score is 4.3). As for the functioning of the equipments, the results indicated that not all available equipments are functioning, ranging from one third to two third of available equipments of the different departments are functioning.

Figure 8.7: Mean score of equipment that are available and functioning by type of departments



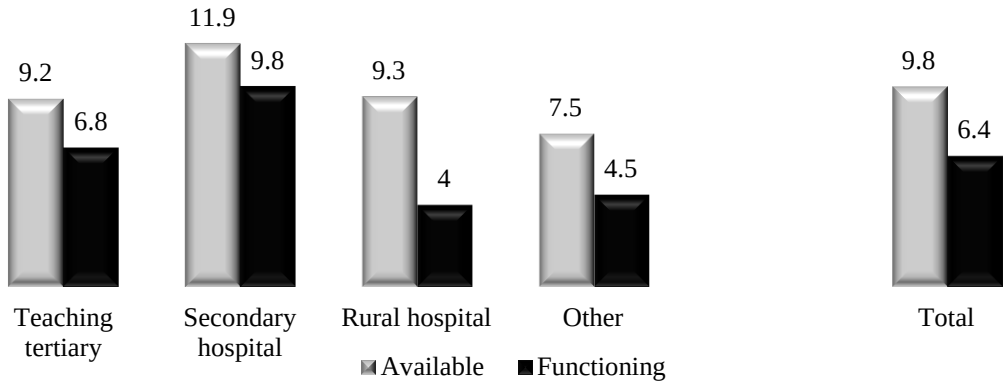
Mean score of equipment that available and function of internal medicine department

Type of hospitals	Available	Functioning	No. of hospital
Teaching tertiary	2.8	2.0	33
Secondary hospital	3.3	3.0	20
Rural hospital	3.1	1.1	31
Other	1.5	1.5	2
Total	3.0	1.9	86

The availability of equipments differs by type of facility for each service department. As mentioned before overall around 3 equipments out of the 5 equipments asked about in the internal medicine departments are available, however, the data indicated that secondary hospitals have on average more equipments (average 3.3 equipments) than rural hospitals (3.1 equipments) and teaching hospitals (2.8 equipments). On the contrary, Rural hospitals are less likely to have functioning equipments (average 1.1) while other type of hospitals all equipments available are working.

As for general surgery department equipments overall around 10 equipments out of the 14 equipments asked about are available in hospitals, however, the data indicated that secondary hospitals have on average more equipments (average 11.9 equipments) than rural hospitals and teaching hospitals (9.3 and 9.2 equipments respectively), while other type of hospitals are the least to have general surgery equipments (7.5 equipments). Rural hospitals are the least to have functioning equipments (average 4,) while secondary hospitals have on average the highest number of functioning equipments (9.8 functioning equipments) (Figure 8.8).

Figure 8.8:Mean score of equipment that available and function of general surgery department by type of hospital



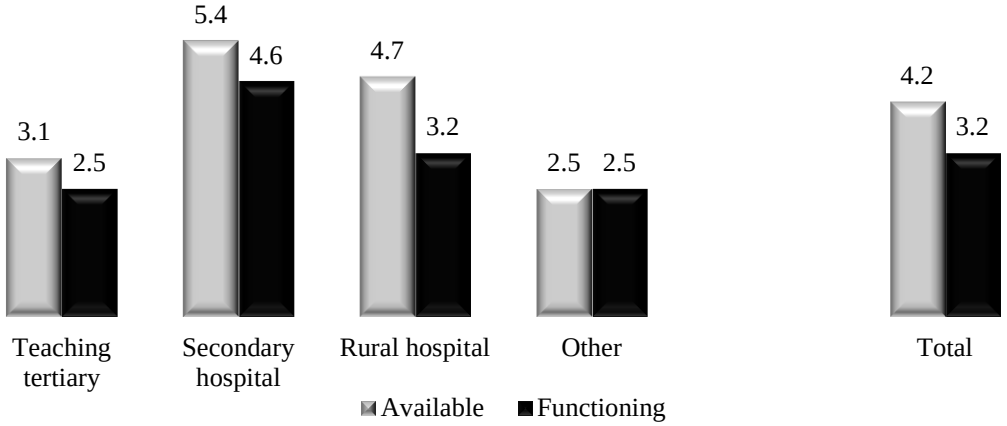
There is clear shortage of OB/GYN department's equipments in all types of hospitals, where as mentioned before on average there is 4.3 equipments available out of the 15 that has to be available and 3.8 of equipments are functioning. The teaching hospitals have on average 3.7 equipments available and 3.3 are functioning, rural hospitals have only 1.9 equipments available and on average 1.6 are functioning, and secondary hospitals (8.8 available and 7.8 functioning).

Mean score of equipment that available and function of OB/GYN department

Type of hospitals	Available	Functioning	No. of hospital
Teaching tertiary	3.7	3.3	33
Secondary hospital	8.8	7.8	20
Rural hospital	1.9	1.6	31
Other	7.0	5.5	2
Total	4.3	3.8	86

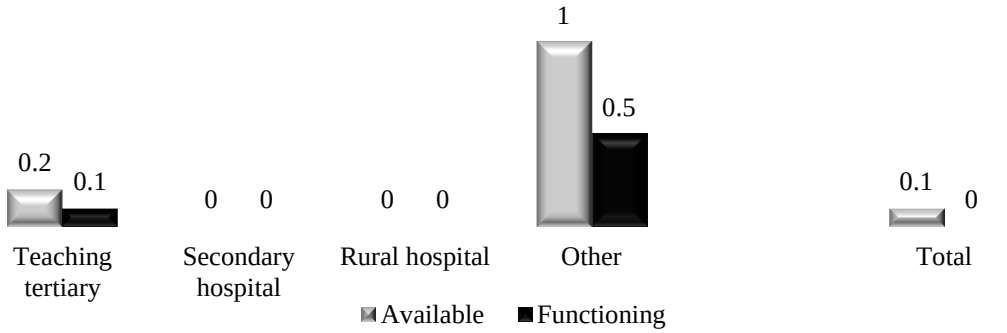
As for pediatrics department, the results show that there is on average 4.2 equipments available out of the 8 necessary to provide the service. Secondary hospitals are more likely to have more equipments available (average 5.4 equipments) than rural hospitals (4.7 equipments), and teaching hospitals (3.1 equipments). Around three quertar of the available equipments in the hospital are functioning, where the number of functioning equipments is 3.2 and same pattern was observed in all hospitals type.

Figure 8.9:Mean score of equipment that available and function of pediatrics department by type of hospital



Radiation oncology department equipments are not available in almost all hospitals, with average 0.1 equipment out of 3. Secondary and rural hospitals have no radiation oncology equipments, and in other type of hospitals on average there are 1 out of 3 equipments available.

Figure 8.10:Mean score of equipment that available and function of radiation oncology department by type of hospital



The questionnaire included question about the availability of 8 laboratory equipments and its functioning. On average hospitals have 4.8 equipments out of 8 and 4.1 of them are functioning. Teaching and secondary hospitals have the highest number of available equipments (6.0 and 5.7 respectively), as well as functioning equipments (5.4 and 5.2 respectively).

From the previous discussion one can notice that secondary hospitals are more equipped in different departments than teaching hospitals, which indicated its capability to provide the different services, however, rural hospitals are less likely to be ready to provide different service due to the shortage of functioning equipments.

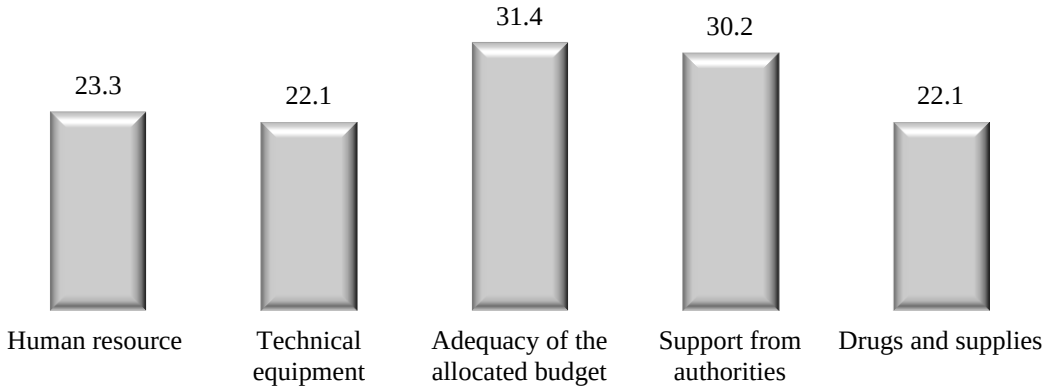
Mean score of equipment that available and function of laboratory department

Type of hospitals	Available	Functioning	No. of hospital
Teaching tertiary	6.0	5.4	33
Secondary hospital	5.7	5.2	20
Rural hospital	3.0	2.2	31
Other	4.0	2.5	2
Total	4.8	4.1	86

8.5 The Scale of the Problem in Different Areas

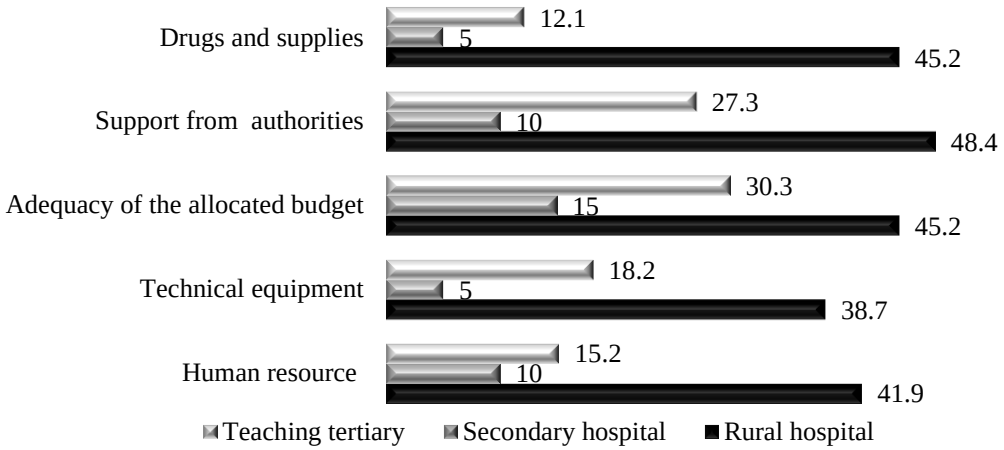
When hospital director/Chief of administrative board asked about the severity of problems the hospital facing for specific categories, the results indicated that more than 20% of hospitals faced severe problem in each of the five categories asked about. Twenty- three percent of hospitals facing severe problem related to human resources, almost same percentage facing sever technical equipment problem, and drugs and supplies. Around 30% of hospitals were facing severe problem with adequacy of budget allocation, and also support from authorities.

Figure 8.11: Percentage of hospitals that faced severe problems



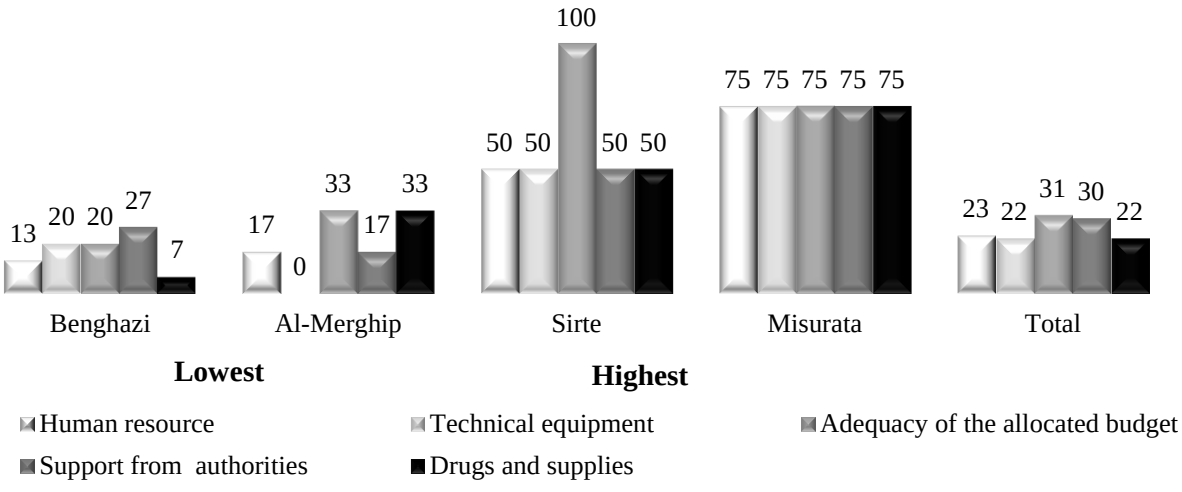
The results differ by type of hospital, where data indicated that rural hospitals facing severe problems for each of the five above categories more than teaching and secondary hospitals, where around 40% or more of rural hospitals facing severe problem in each of the five categories asked for. Secondary hospitals were the least that facing problems for the five categories.

Figure 8.12: Percentage of hospitals that faced severe problems by type of hospital



By district, hospitals in Misurata district was the most that facing severe problems where 3 hospitals out of 4 in Misurata facing severe problem in all the five categories asked for. There are 6 district in which hospitals didn't face any problem of all the five categories, these are; Derna, Al-Gebal Al-Akhadar, Al-Wahat, Sebha, , Alzawea, and Noloot.

Figure 8.13: Percentage of hospitals that faced severe problems by District



8.6 Effects Based on Geographical Distribution

Overall 16% of hospitals were moderately/severely damaged due to the conflict. By district, hospitals in only 9 districts were affected by the conflict. The most affected district was Misurata, where 3 out of 4 hospitals (75%) were severely damaged; while in Al-Gebal Elgharbi 3 out of 7 hospitals (43%) were severely damaged.

The central sterilization unit of 17 hospitals (20% of hospital in over Libya) was affected post-conflict. By district, Tripoli has the highest number of hospitals with CSU damaged (4 out of 12 hospitals).

By district, Tripoli has the highest number of ambulance service department damaged, where 5 out of the 12 hospitals (42%) in Tripoli have ambulance service department damaged (moderately or severely). However, all hospitals in Misurata district (4 hospitals) have ambulance service department severely damaged

Generally, the number of physicians and support staff has increased for all types of surgical specialties (expect support staff for anesthetists) post-conflict compared with pre-conflict. Generally, the number of physicians and support staff has increased in most of the districts, however for some surgical specialties the number of either physicians or support staff has decreased post-conflict in comparison with pre-conflict. For example, the number of support staff has increased significantly in Ajdabia post-conflict in comparison with pre-conflict, yet the number of support staff for OB/GYN has decreaed. On the contrary, in Benghazi the number of support staff for OB/GYN has almost doubled post-conflict compared with pre-conflict.

Physicians' density in general seems to be low in Derna, Almarege, Al-Kufra and Al-Wahat, which suggest that these three districts need an increase in number of physicians. In other districts, the physician's density differ from one surgical specialty to another, where in some specialties the physician's density is high while for others it seems to be low. Generally, the physician's and support staff numbers are high in Tripoli, Zwara, and Benghazi, while these numbers are low in Derna.

Annex Tables A

2. Infrastructure

Table A.2.1 Characteristics of hospitals

Characteristics of hospitals according to type of hospital by type of hospitals and district, Libya 2012

Background characteristic	Number of beds	Current status of the hospital		Population year 2010	Number of hospitals per 10,000 population	Number of beds per 10,000 population	Number of hospitals
		Renovated	Under renovation contract				
Type of hospital							
Teaching tertiary	6782	13	8				33
Secondary hospital	3884	5	9				20
Rural hospital	1746	11	3				31
Other	120	0	0				2
District							
Albetnan	570	1	0	163000	.18	34.97	3
Derna	60	2	0	167000	.18	3.59	3
Al-Gebal-Alakhdar	120	3	0	208000	.14	5.77	3
Almarege	500	1	1	188000	.21	26.60	4
Benghazi	2541	3	3	667000	.22	38.10	15
Al-Wahat	80	1	0	30000	.33	26.67	1
Ajdabia	410	0	0	148000	.14	27.70	2
Al-Kufra	122	1	0	46000	.43	26.52	2
Sirte	360	1	0	143000	.14	25.17	2
Joufara	240	0	1	458000	.04	5.24	2
Morzig	194	1	1	79000	.25	24.56	2
Sebha	60	1	0	129000	.08	4.65	1
Wadi-Alshati	400	1	2	79000	.51	50.63	4
Misurata	810	0	3	552000	.07	14.67	4
Al-Merghip	657	2	1	441000	.14	14.90	6
Tripoli	2649	6	4	1067000	.11	24.83	12
Al-Jufra	200	1	0	51000	.39	39.22	2
Alzawea	650	1	1	292000	.07	22.26	2
Zwara	713	3	2	290000	.17	24.59	5
Al-Gebal-Elgharbi	840	0	1	310000	.23	27.10	7
Naloot	356	0	0	94000	.43	37.87	4
Total	12532	29	20	5702000	0.15	21.99	86

Table A.2.2 Effect of conflict on hospitals' building condition

Number and percentage of hospitals that were with moderately damage building and severely damage building by type of hospitals and district, Libya 2012.

Background characteristic	Hospitals that were moderately damage	Hospitals that were severely damage	Hospitals that were moderately and severely damage	Number of hospitals
	No.	No.	%	
Type of hospital				
Teaching tertiary	3	2	15.2	33
Secondary hospital	0	2	10.0	20
Rural hospital	3	3	19.4	31
Other	1	0	50.0	2
District				
Albetnan	0	0	0.0	3
Derna	0	0	0.0	3
Al-Gebal-Alakhdar	0	0	0.0	3
Almarege	0	1	25.0	4
Benghazi	1	1	13.3	15
Al-Wahat	0	0	0.0	1
Ajdabia	0	0	0.0	2
Al-Kufra	0	0	0.0	2
Sirte	1	0	50.0	2
Joufara	0	0	0.0	2
Morzig	1	0	50.0	2
Sebha	0	0	0.0	1
Wadi-Alshati	1	0	25.0	4
Misurata	0	3	75.0	4
Al-Merghip	0	1	16.7	6
Tripoli	0	1	8.3	12
Al-Jufra	0	0	0.0	2
Alzawea	0	0	0.0	2
Zwara	0	0	0.0	5
Al-Gebal-Elgharbi	3	0	42.9	7
Naloot	0	0	0.0	4
Total	7	7	16.3	86

3. Organizational Structure and Management

Table A.3.1 Hospital with available staff and management job description

Number of hospitals that have clear written job descriptions and TORs for medical director, administrative director, clinic head department, and employees by type of hospitals, Libya 2012.

Background characteristic	Medical director		Administrative director		Clinic of department heads		Employees		Number of hospitals
	No.	%	No.	%	No.	%	No.	%	
Type of hospital									
Teaching tertiary	17	51.5	19	57.6	6	18.2	7	21.2	33
Secondary hospital	13	65.0	12	60.0	5	25.0	4	20.0	20
Rural hospital	6	19.4	18	58.1	4	12.9	8	25.8	31
Other	1	50.0	2	100.0	1	50.0	0	0.0	2
Total	37	43.0	51	59.3	16	18.6	19	22.1	86

Table A.3.2 Hospitals with organizational structure, vision, mission and management board

Number and percentage of hospitals with clear written vision, mission, organizational structure, management board, and community represented in the board, by type of hospitals, Libya 2012.

Background characteristic	Mission		Vision		Organizational structure		Management board		Community represented in the board		Number of hospitals
	No.	%	No.	%	No.	%	No.	%	No.	%	
Type of hospital											
Teaching tertiary	11	33.3	13	39.4	19	57.6	14	42.4	1	3.0	33
Secondary hospital	11	55.0	10	50.0	12	60.0	6	30.0	3	15.0	20
Rural hospital	20	64.5	15	48.4	25	80.6	8	25.8	4	12.9	31
Other	1	50.0	1	50.0	1	50.0	0	0.0	1	50.0	2
Total	43	50.0	39	45.3	57	66.3	28	32.6	9	10.5	86

Table A.3.3 Hospitals with barrier to the accessibility of services

Number and percentage of hospitals with barrier to the accessibility of services for people, by type of hospitals and district, Libya 2012.

Background characteristic	Barrier to the accessibility of services		Number of hospitals
	No.	%	
Type of hospital			
Teaching tertiary	14	42.4	33
Secondary hospital	6	30.0	20
Rural hospital	11	35.5	31
Other	2	100.0	2
District			
Albetnan	2	66.7	3
Derna	3	100.0	3
Al-Gebal-Alakhdar	1	33.3	3
Almarege	0	0.0	4
Benghazi	8	53.3	15
Al-Wahat	0	0.0	1
Ajdabia	1	50.0	2
Al-Kufra	1	50.0	2
Sirte	1	50.0	2
Joufara	0	0.0	2
Morzig	1	50.0	2
Sebha	0	0.0	1
Wadi-Alshati	2	50.0	4
Misurata	1	25.0	4
Al-Merghip	1	16.7	6
Tripoli	6	50.0	12
Al-Jufra	1	50.0	2
Alzawea	1	50.0	2
Zwara	2	40.0	5
Al-Gebal-Elgharbi	0	0.0	7
Naloot	1	25.0	4
Total	33	38.4	86

Table A.3.4 Availability and functioning of specific teams in the hospital

Number of availability and functioning of specific teams in the hospital such as (trauma, cardiac arrest, nutritional committee, ethical committee, quality management, infection control, etc.), by type of hospitals, Libya 2012.

	Teaching tertiary	Secondary hospital	Rural hospital	Other	Total
Trauma Team					
Available	7	8	24	0	39
Functioning	3	6	7	0	16
Cardiac arrest team					
Available	10	4	3	0	17
Functioning	4	3	0	0	7
Nutritional Committee					
Available	18	6	11	1	36
Functioning	7	2	1	0	10
Ethical Committee					
Available	9	4	8	0	21
Functioning	1	0	2	0	3
Research Committee					
Available	8	1	2	0	11
Functioning	3	0	0	0	3
Cancer Team					
Available	2	2	1	1	6
Functioning	2	1	0	0	3
Quality management					
Available	21	12	22	1	56
Functioning	3	4	3	0	10
Infection control					
Available	24	14	14	0	52
Functioning	13	4	2	0	19
Patient safety					
Available	8	6	8	1	23
Functioning	3	1	1	1	6
Mortality and morbidity committee					
Available	16	10	11	0	37
Functioning	5	0	3	0	8
IT infrastructures (Network)					
Available	12	6	7	1	26
Functioning	6	1	2	0	9
Rehabilitation center					
Available	8	8	3	1	20
Functioning	3	1	0	0	4
Number of hospitals	33	20	31	2	86

Table A.3.5 Training activities in hospitals

Percentage of hospitals that offering any formal/ informal and in-service training courses on a regular base, and percentage of hospitals that providing training activities for stuff, by type of hospitals, Libya 2012.

Background characteristic	Hospitals that offering any formal/ informal and in-service training courses on a regular base		Hospitals with special budget for training		Number of hospitals
	Number	Percentage	Number	Percentage	
Type of hospital					
Teaching tertiary	14	42.4	14	42.4	33
Secondary hospital	7	35.0	5	25.0	20
Rural hospital	8	25.8	7	22.6	31
Other	0	0.0	1	50.0	2
Total	29	33.7	27	31.4	86

Table A.3.6 Number of hospitals that offered training activities to different medical staff

Number of hospitals that offering any formal/ informal and in-service training courses on a regular base, and percentage of hospitals that providing training activities for stuff, by type of hospitals, Libya 2012.

Background characteristic	Type of stuff who received training activities						Number of hospitals
	Specialist Doctors	Generalist Doctors	House officers Doctors	Undergraduates Medical	Nurses and Technicians	Others (specify)	
Type of hospital							
Teaching tertiary	11	16	19	23	21	10	33
Secondary hospital	4	9	7	12	13	8	20
Rural hospital	2	4	1	4	11	4	31
Other	0	1	1	2	1	0	2
Total	17	30	28	41	46	22	86

4. Health Workforce

Table A.4.1 Number of physicians in hospitals

Number of physicians in the hospitals according to type of surgical specialties, by type of hospital and district, Libya 2012

Background characteristic	Number of physicians															
	Internal medicine		Pediatric		OB/GYN		Surgery		Anesthetia		ICU		Dentist		Radiology	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Type of hospital																
Teaching tertiary	812	958	329	365	668	660	3051	2437	132	145	1027	1086	30	29	1531	2652
Secondary hospital	204	218	199	209	187	288	303	863	48	52	92	317	8	9	151	99
Rural hospital	84	145	55	77	1319	1277	2343	2784	9	9	2	2	2	7	859	1754
Other	3	3	20	20	16	54	39	336	0	0	0	0	0	0	10	11
District																
Albetnan	13	9	0	0	142	171	0	0	9	9	2	2	2	2	124	812
Derna	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Al-Gebal-Alakhdar	21	34	7	13	308	161	611	115	0	0	0	0	0	0	83	33
Almarege	21	21	47	52	19	19	8	8	1	1	14	14	0	0	6	23
Benghazi	323	453	29	21	352	449	1302	1667	23	30	37	37	3	5	760	604
Al-Wahat	0	7	0	0	32	34	0	111	0	5	0	0	0	1	1	2
Ajdabia	10	9	6	6	169	168	0	0	1	1	0	0	0	0	22	22
Al-Kufra	6	9	23	23	44	89	7	8	6	6	0	0	0	0	4	7
Sirte	66	69	22	27	5	4	424	632	6	6	2	0	0	0	38	16
Joufara	52	52	87	87	20	8	5	5	8	20	51	51	4	4	12	9
Morzig	11	14	0	0	62	189	36	11	3	1	0	0	0	0	124	69
Sebha	1	1	0	0	32	34	0	333	0	0	0	0	0	0	58	33
Wadi-Alshati	7	7	21	21	300	246	6	8	0	0	0	0	0	0	266	288
Misurata	46	57	8	12	130	135	11	708	16	14	18	18	0	0	201	148
Al-Merghip	29	15	92	76	124	111	470	548	0	0	0	0	3	1	201	780
Tripoli	225	231	61	72	167	157	747	289	58	59	193	343	17	17	499	301
Al-Jufra	23	37	12	14	27	51	929	333	0	0	0	0	2	2	8	69
Alzawea	65	75	79	99	13	12	111	111	21	13	38	33	2	2	6	8
Zwara	118	138	57	84	105	66	255	253	22	24	760	901	6	7	21	919
Al-Gebal-Elgharbi	53	67	32	50	112	134	580	839	11	16	0	0	0	3	58	369
Naloot	13	19	20	14	26	40	234	441	4	1	6	6	1	1	59	4
Total	1103	1324	603	671	2190	2279	5736	6420	189	206	1121	1405	40	45	2551	4516

Table A.4.2 Number of support staff in hospitals

Number of support staff (nurses and technicians, and midwifes) in the hospitals according to type of surgical specialties, by type of hospital and district, Libya 2012

Background characteristic	Number of support staff															
	Internal medicine		Pediatric		OB/GYN		Surgery		Anesthesia		ICU		Dentist		Radiology	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Type of hospital																
Teaching tertiary	775	755	105	110	534	719	4216	3447	311	343	218	159	31	145	1700	593
Secondary hospital	224	221	115	126	494	619	2643	2709	242	203	122	196	15	17	241	439
Rural hospital	205	462	32	52	1239	1307	5676	6119	48	33	0	0	4	26	856	1859
Other	14	14	0	0	15	23	111	11	3	4	12	16	0	0	34	37
District																
Albetnan	47	19	0	0	257	251	111	112	28	30	0	0	2	3	4	451
Derna	0	0	0	0	13	13	0	0	0	0	0	0	0	0	0	0
Al-Gebal-Alakhdar	0	102	5	9	184	349	426	245	0	0	0	0	0	0	24	0
Almarege	18	18	33	33	89	96	30	27	27	27	21	21	0	0	27	359
Benghazi	525	522	0	5	241	421	1922	987	117	68	58	24	10	9	225	204
Al-Wahat	0	13	0	0	22	22	222	222	0	0	0	0	0	2	0	181
Ajdabia	10	10	4	4	190	160	1	818	15	20	0	0	0	0	284	830
Al-Kufra	23	23	20	20	71	63	24	187	4	4	0	0	0	0	25	0
Sirte	55	57	0	0	34	40	621	48	18	44	12	14	0	0	30	70
Joufara	14	14	43	43	61	61	115	122	32	32	25	25	7	7	30	38
Morzig	42	42	0	0	59	99	245	269	43	5	0	0	0	0	13	41
Sebha	0	0	0	0	0	3	555	555	0	0	0	0	0	0	0	0
Wadi-Alshati	94	94	1	1	161	93	333	1076	3	4	12	16	0	0	24	27
Misurata	86	108	0	0	64	65	921	909	25	19	38	41	0	0	28	143
Al-Merghip	26	14	52	52	335	285	264	677	9	9	0	0	0	0	1032	141
Tripoli	117	120	0	0	76	69	644	184	114	124	66	115	12	125	294	169
Al-Jufra	14	92	6	9	47	46	2249	2325	0	0	4	4	2	2	111	13
Alzawea	36	30	39	39	66	66	101	136	55	73	35	32	2	2	62	62
Zwara	66	65	33	48	99	175	1734	1725	66	56	42	57	11	12	272	189
Al-Gebal-Elgharbi	30	85	4	17	158	189	2080	1659	43	61	39	22	0	22	335	4
Naloot	15	24	12	8	55	102	48	3	5	7	0	0	4	4	11	6
Total	1218	1452	252	288	2282	2668	12646	12286	604	583	352	371	50	188	2831	2928

Table A.4.3 Physicians' density per 10,000 population rather absolute number

Density, of physicians per 10,000 population according to type of surgical specialties, by district, Libya 2012

Background characteristic	Internal medicine		Pediatric		OB/GYN		Surgery		Anesthetia		ICU		Dentist		Radiology	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
District																
Albetnan	0.8	0.6	0.0	0.0	8.7	10.5	0.0	0.0	0.6	0.6	0.1	0.1	0.1	0.1	7.6	49.8
Derna	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Al-Gebal-Alakhdar	1.0	1.6	0.3	0.6	14.8	7.7	29.4	5.5	0.0	0.0	0.0	0.0	0.0	0.0	4.0	1.6
Almarege	1.1	1.1	2.5	2.8	1.0	1.0	0.4	0.4	0.1	0.1	0.7	0.7	0.0	0.0	0.3	1.2
Benghazi	4.8	6.8	0.4	0.3	5.3	6.7	19.5	25.0	0.3	0.4	0.6	0.6	0.0	0.1	11.4	9.1
Al-Wahat	0.0	2.3	0.0	0.0	10.7	11.3	0.0	37.0	0.0	1.7	0.0	0.0	0.0	0.3	0.3	0.7
Ajdabia	0.7	0.6	0.4	0.4	11.4	11.4	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	1.5	1.5
Al-Kufra	1.3	2.0	5.0	5.0	9.6	19.3	1.5	1.7	1.3	1.3	0.0	0.0	0.0	0.0	0.9	1.5
Sirte	4.6	4.8	1.5	1.9	0.3	0.3	29.7	44.2	0.4	0.4	0.1	0.0	0.0	0.0	2.7	1.1
Joufara	1.1	1.1	1.9	1.9	0.4	0.2	0.1	0.1	0.2	0.4	1.1	1.1	0.1	0.1	0.3	0.2
Morzig	1.4	1.8	0.0	0.0	7.8	23.9	4.6	1.4	0.4	0.1	0.0	0.0	0.0	0.0	15.7	8.7
Sebha	0.1	0.1	0.0	0.0	2.5	2.6	0.0	25.8	0.0	0.0	0.0	0.0	0.0	0.0	4.5	2.6
Wadi-Alshati	0.9	0.9	2.7	2.7	38.0	31.1	0.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	33.7	36.5
Misurata	0.8	1.0	0.1	0.2	2.4	2.4	0.2	12.8	0.3	0.3	0.3	0.3	0.0	0.0	3.6	2.7
Al-Merghip	0.7	0.3	2.1	1.7	2.8	2.5	10.7	12.4	0.0	0.0	0.0	0.0	0.1	0.0	4.6	17.7
Tripoli	2.1	2.2	0.6	0.7	1.6	1.5	7.0	2.7	0.5	0.6	1.8	3.2	0.2	0.2	4.7	2.8
Al-Jufra	4.5	7.3	2.4	2.7	5.3	10.0	182.2	65.3	0.0	0.0	0.0	0.0	0.4	0.4	1.6	13.5
Alzawea	2.2	2.6	2.7	3.4	0.4	0.4	3.8	3.8	0.7	0.4	1.3	1.1	0.1	0.1	0.2	0.3
Zwara	4.1	4.8	2.0	2.9	3.6	2.3	8.8	8.7	0.8	0.8	26.2	31.1	0.2	0.2	0.7	31.7
Al-Gebal-Elgharbi	1.7	2.2	1.0	1.6	3.6	4.3	18.7	27.1	0.4	0.5	0.0	0.0	0.0	0.1	1.9	11.9
Naloot	1.4	2.0	2.1	1.5	2.8	4.3	24.9	46.9	0.4	0.1	0.6	0.6	0.1	0.1	6.3	0.4
Total	1.9	2.3	1.1	1.2	3.8	4.0	10.1	11.3	0.3	0.4	2.0	2.5	0.1	0.1	4.5	7.9

Table A.4.4 Number of pharmacists and pharmacists assistants in hospitals

Number of professional pharmacists, total number of assistant pharmacists, and total number of other technical staff (nurses and technicians), by type of hospitals and district, Libya 2012.

Background characteristic	Total number of professional pharmacists		Total number of assistant pharmacists		Total number of other technical staff(nurses and technician)		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	
Type of hospital							
Teaching tertiary	317	386	283	336	401	432	33
Secondary hospital	126	128	162	157	451	463	20
Rural hospital	231	230	123	129	628	286	31
Other	3	3	8	8	14	14	2
District							
Albetnan	28	28	34	34	412	412	3
Derna	106	115	77	77	341	222	3
Al-Gebal-Alakhdar	0	0	2	2	120	0	3
Almarege	14	14	34	34	1	1	4
Benghazi	83	155	48	96	199	210	15
Al-Wahat	0	0	2	2	2	2	1
Ajdabia	8	8	11	11	26	30	2
Al-Kufra	25	26	5	7	29	29	2
Sirte	31	28	3	3	100	44	2
Joufara	24	35	34	33	13	15	2
Morzig	1	2	23	23	0	0	2
Sebha	1	1	2	2	3	3	1
Wadi-Alshati	33	33	19	19	53	53	4
Misurata	15	5	22	20	10	6	4
Al-Merghip	29	29	31	31	55	55	6
Tripoli	173	172	80	86	47	47	12
Al-Jufra	4	4	18	18	3	3	2
Alzawea	17	10	20	20	5	5	2
Zwara	35	38	50	50	3	3	5
Al-Gebal-Elgharbi	40	37	53	50	57	50	7
Naloot	10	7	8	12	15	5	4
Total	677	747	576	630	1494	1195	86

5. Financing

Table A.5.1 Average annual budget in hospitals

Percentage of hospitals that have annual budget and average amount of known annual budge money in Million Libyan Dinar and minimum and maximum range of budget by type of hospitals and district, Libya 2012.

Background characteristic	Percentage of hospitals that have annual budget	Average amount of known annual budget in Million Libyan Dinar	Range		Number of hospitals
			Minimum	Maximum	
Type of hospital					
Teaching tertiary	100.0	47.71	3.26	779.00	33
Secondary hospital	95.0	10.65	4.72	29.00	20
Rural hospital	87.1	4.35	1.00	26.00	31
Other	100.0	5.63	2.02	9.23	2
District					
Albetnan	100.0	11.56	1.00	29.00	3
Derna	100.0	6.80	3.20	14.00	3
Al-Gebal-Alakhdar	100.0	9.90	2.70	24.00	3
Almarege	75.0	7.43	2.30	17.00	4
Benghazi	100.0	12.22	2.02	30.91	15
Al-Wahat	100.0	4.72	4.72	4.72	1
Ajdabia	50.0	3.37	3.37	3.37	2
Al-Kufra	100.0	2.14	1.00	3.28	2
Sirte	100.0	14.91	2.81	27.00	2
Joufara	100.0	20.10	15.75	24.44	2
Morzig	100.0	5.91	4.50	7.32	2
Sebha	0.0	.	.	.	1
Wadi-Alshati	100.0	4.41	1.00	9.23	4
Misurata	75.0	9.00	3.86	15.15	4
Al-Merghip	100.0	34.49	1.50	155.40	6
Tripoli	100.0	95.23	3.26	779.00	12
Al-Jufra	100.0	16.00	6.00	26.00	2
Alzawea	100.0	12.50	6.00	19.00	2
Zwara	100.0	10.70	6.00	20.00	5
Al-Gebal-Elgharbi	100.0	2.83	1.50	6.00	7
Naloot	75.0	5.46	2.00	9.37	4
Total	94.2	23.23	1.00	779.00	86

Table A.5.2 Distribution of budget among key areas of services

Distribution of budget among key areas such as (e.g. human resources, medicine, patient and administrative support, maintenance, and training) by type of hospitals and district, Libya 2012.

Background characteristic	Percentage of annual budget spent in: Human Resources	Medicine and Lab. Technology	Patient support (Food)	Administrative support services	Maintenance and repair	Training and education	Number of hospitals
Type of hospital							
Teaching tertiary	92.40	1.17	3.65	.74	1.86	.19	28
Secondary hospital	85.26	2.88	4.49	4.83	1.60	.94	19
Rural hospital	73.60	6.12	5.28	5.60	6.35	3.06	25
Other	100.00	.00	.00	.00	.00	.00	2
District							
Albetnan	.	.	.	.	.	.	2
Derna	54.9	22.0	11.0	5.5	5.5	1.1	2
Al-Gebal-Alakhdar	100.0	0.0	0.0	0.0	0.0	0.0	3
Almarege	75.0	10.0	7.5	0.0	5.0	2.5	2
Benghazi	86.5	0.6	4.1	4.3	4.1	0.4	14
Al-Wahat	100.0	0.0	0.0	0.0	0.0	0.0	1
Ajdabia	.	.	.	.	.	.	2
Al-Kufra	100.0	0.0	0.0	0.0	0.0	0.0	2
Sirte	100.0	0.0	0.0	0.0	0.0	0.0	2
Joufara	89.8	2.4	4.7	0.8	1.6	0.8	2
Morzig	66.0	2.0	5.0	5.0	22.0	0.0	2
Sebha	.	.	.	.	.	.	1
Wadi-Alshati	100.0	0.0	0.0	0.0	0.0	0.0	4
Misurata	100.0	0.0	0.0	0.0	0.0	0.0	4
Al-Merghip	98.9	0.4	0.3	0.2	0.2	0.0	5
Tripoli	90.5	1.1	5.7	1.1	1.3	0.2	9
Al-Jufra	84.4	2.2	7.8	2.2	3.3	0.0	1
Alzawea	86.2	1.8	7.8	3.2	1.0	0.0	2
Zwara	85.7	5.7	5.6	1.1	1.3	0.6	5
Al-Gebal-Elgharbi	50.6	8.8	8.4	14.7	8.8	8.8	5
Naloot	60.1	3.0	12.2	5.3	13.2	6.1	4
Total	81.59	3.25	4.89	4.59	4.30	1.38	74

Table A.5.3 Outsourcing services

Number and percentage of hospitals that finance outsource of non-clinical services, clinical services, and other services, by type of hospitals and district, Libya 2012.

Background characteristic	Non clinical services		Clinical services		Other services		Number of hospitals
	No.	%	No.	%	No.	%	
Type of hospital							
Teaching tertiary	31	93.9	20	60.6	17	51.5	33
Secondary hospital	15	75.0	7	35.0	6	30.0	20
Rural hospital	23	74.2	12	38.7	9	29.0	31
Other	1	50.0	1	50.0	0	0.0	2
District							
Albetnan	3	100.0	1	33.3	1	33.3	3
Derna	3	100.0	3	100.0	1	33.3	3
Al-Gebal-Alakhdar	3	100.0	3	100.0	2	66.7	3
Almarege	3	75.0	1	25.0	1	25.0	4
Benghazi	11	73.3	5	33.3	6	40.0	15
Al-Wahat	1	100.0	1	100.0	1	100.0	1
Ajdabia	1	50.0	1	50.0	1	50.0	2
Al-Kufra	2	100.0	1	50.0	1	50.0	2
Sirte	2	100.0	1	50.0	2	100.0	2
Joufara	1	50.0	0	0.0	0	0.0	2
Morzig	1	50.0	1	50.0	1	50.0	2
Sebha	0	0.0	0	0.0	0	0.0	1
Wadi-Alshati	3	75.0	4	100.0	2	50.0	4
Misurata	2	50.0	2	50.0	2	50.0	4
Al-Merghip	6	100.0	0	0.0	2	33.3	6
Tripoli	11	91.7	9	75.0	6	50.0	12
Al-Jufra	2	100.0	2	100.0	0	0.0	2
Alzawea	2	100.0	0	0.0	0	0.0	2
Zwara	5	100.0	1	20.0	0	0.0	5
Al-Gebal-Elgharbi	6	85.7	3	42.9	2	28.6	7
Naloot	2	50.0	1	25.0	1	25.0	4
Total	70	81.4	40	46.5	32	37.2	86

6. Pharmaceutical Sector and Drugs

Table A.6.1 Availability of pharmacy departments in hospitals and shortage of drug

Number and percentage of hospitals that have pharmacy departments and hospitals with shortage of drugs, by type of hospitals and district, Libya 2012.

	Availability of pharmacy department				Hospitals with shortage of drugs				
	Pre		Post		Pre		Post		Number of hospitals
Background characteristic	No.	%	No.	%	No.	%	No.	%	
Type of hospital									
Teaching tertiary	33	100.0	30	90.9	29	87.9	26	78.8	33
Secondary hospital	19	95.0	17	85.0	19	95.0	15	75.0	20
Rural hospital	29	93.5	24	77.4	19	61.3	12	38.7	31
Other	1	50.0	1	50.0	1	50.0	1	50.0	2
District									
Albetnan	3	100.0	3	100.0	3	100.0	0	0.0	3
Derna	3	100.0	1	33.3	2	66.7	1	33.3	3
Al-Gebal-Alakhdar	3	100.0	3	100.0	2	66.7	1	33.3	3
Almarege	2	50.0	2	50.0	3	75.0	2	50.0	4
Benghazi	14	93.3	14	93.3	10	66.7	10	66.7	15
Al-Wahat	1	100.0	0	0.0	1	100.0	0	0.0	1
Ajdabia	2	100.0	1	50.0	2	100.0	1	50.0	2
Al-Kufra	2	100.0	2	100.0	1	50.0	2	100.0	2
Sirte	2	100.0	2	100.0	2	100.0	2	100.0	2
Joufara	2	100.0	2	100.0	2	100.0	2	100.0	2
Morzig	2	100.0	2	100.0	2	100.0	1	50.0	2
Sebha	1	100.0	0	0.0	0	0.0	0	0.0	1
Wadi-Alshati	4	100.0	4	100.0	4	100.0	3	75.0	4
Misurata	3	75.0	3	75.0	3	75.0	2	50.0	4
Al-Merghip	6	100.0	6	100.0	4	66.7	4	66.7	6
Tripoli	12	100.0	11	91.7	11	91.7	9	75.0	12
Al-Jufra	2	100.0	1	50.0	2	100.0	1	50.0	2
Alzawea	2	100.0	1	50.0	2	100.0	2	100.0	2
Zwara	5	100.0	5	100.0	5	100.0	5	100.0	5
Al-Gebal-Elgharbi	7	100.0	6	85.7	5	71.4	4	57.1	7
Naloot	4	100.0	3	75.0	2	50.0	2	50.0	4
Total	82	95.3	72	83.7	68	79.1	54	62.8	86

7. Service Delivery and Utilization

Table A.7.1 Number of utilization of internal medicine services and staff availability in the pre-and post-conflict phase

Number of utilization of internal medicine services and staff availability in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	No. of beds	Staff (total number of all staff in all areas of internal medicine)						Outpatient visits		No. of major procedures		Number of hospitals
		Professional		Other staff		Total						
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Type of hospital												
Teaching tertiary	2363	618	755	775	755	1393	1510	4308	7091	4073	3329	33
Secondary hospital	530	170	179	224	221	394	400	12555	11449	5981	3735	20
Rural hospital	260	66	127	205	462	271	589	3233	6302	3	0	31
Other	35	0	0	14	14	14	14	290	283	40	24	2
District												
Albetnan	45	10	5	47	19	57	24	0	465	0	0	3
Derna	0	0	0	0	0	0	0	0	0	0	0	3
Al-Gebal-Alakhdar	163	19	32	0	102	19	134	370	480	0	0	3
Almarege	90	13	13	18	18	31	31	333	375	728	665	4
Benghazi	1189	254	378	525	522	779	900	300	1572	1479	958	15
Al-Wahat	23	0	5	0	13	0	18	0	0	0	0	1
Ajdabia	100	7	7	10	10	17	17	0	0	0	0	2
Al-Kufra	25	6	9	23	23	29	32	677	629	0	0	2
Sirte	68	60	63	55	57	115	120	822	1871	274	63	2
Joufara	67	31	31	14	14	45	45	300	2600	0	50	2
Morzig	44	6	9	42	42	48	51	1313	1614	3	0	2
Sebha	0	1	1	0	0	1	1	0	0	0	0	1
Wadi-Alshati	70	4	4	94	94	98	98	1798	1463	4212	2122	4
Misurata	275	46	57	86	108	132	165	4	4	400	370	4
Al-Merghip	90	24	11	26	14	50	25	411	901	0	0	6
Tripoli	687	191	198	117	120	308	318	2983	2517	1098	1106	12
Al-Jufra	0	23	37	14	92	37	129	541	541	90	66	2
Alzawea	106	58	68	36	30	94	98	708	641	179	126	2
Zwara	47	46	58	66	65	112	123	9179	7716	1631	1560	5
Al-Gebal-Elgharbi	19	47	61	30	85	77	146	20	618	0	0	7
Naloot	80	8	14	15	24	23	38	627	1118	3	2	4
Total	3188	854	1061	1218	1452	2072	2513	20386	25125	10097	7088	86

Table A.7.2 Percentage of internal medicine services per professional (Consultants & Specialists & Generalists) staff in the pre-and post-conflict phase

Percentage of internal medicine services per professional staff in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	Outpatient visits		No. of major procedures		Number of hospitals
	Pre	Post	Pre	Post	
Type of hospital					
Teaching tertiary	7.0	9.4	6.6	4.4	33
Secondary hospital	73.9	64.0	35.2	20.9	20
Rural hospital	49.0	49.6	0.0	0.0	31
Other	0.0	0.0	0.0	0.0	2
District					
Albetnan	0.0	93.0	0.0	0.0	3
Derna	0.0	0.0	0.0	0.0	3
Al-Gebal-Alakhdar	19.5	15.0	0.0	0.0	3
Almarege	25.6	28.8	56.0	51.2	4
Benghazi	1.2	4.2	5.8	2.5	15
Al-Wahat	0.0	0.0	0.0	0.0	1
Ajdabia	0.0	0.0	0.0	0.0	2
Al-Kufra	112.8	69.9	0.0	0.0	2
Sirte	13.7	29.7	4.6	1.0	2
Joufara	9.7	83.9	0.0	1.6	2
Morzig	218.8	179.3	0.5	0.0	2
Sebha	0.0	0.0	0.0	0.0	1
Wadi-Alshati	449.5	365.8	1053.0	530.5	4
Misurata	0.1	0.1	8.7	6.5	4
Al-Merghip	17.1	81.9	0.0	0.0	6
Tripoli	15.6	12.7	5.7	5.6	12
Al-Jufra	23.5	14.6	3.9	1.8	2
Alzawea	12.2	9.4	3.1	1.9	2
Zwara	199.5	133.0	35.5	26.9	5
Al-Gebal-Elgharbi	0.4	10.1	0.0	0.0	7
Naloot	78.4	79.9	0.4	0.1	4
Total	23.9	23.7	11.8	6.7	86

Table A.7.3 Number of utilization of medical units related services and staff availability in the pre-and post-conflict phase

Number of utilization of medical units related services and staff availability in hospitals, by type of hospitals and district, Libya 2012

	Staff (total number of all staff)		Outpatient visits		Number of
Background characteristic	Pre	Post	Pre	Post	hospitals
Type of hospital					
Teaching tertiary	439	454	1827	10944	33
Secondary hospital	186	193	1310	2110	20
Rural hospital	50	51	10	164	31
Other	15	20	35	43	2
District					
Albetnan	9	9	0	0	3
Derna	0	0	0	0	3
Al-Gebal-Alakhdar	2	2	0	0	3
Almarege	30	30	58	62	4
Benghazi	212	219	100	8275	15
Al-Wahat	0	10	0	0	1
Ajdabia	48	47	70	70	2
Al-Kufra	0	0	0	0	2
Sirte	27	28	58	48	2
Joufara	70	70	784	2732	2
Morzig	31	31	29	26	2
Sebha	0	0	0	0	1
Wadi-Alshati	15	20	35	43	4
Misurata	0	0	0	0	4
Al-Merghip	24	15	0	0	6
Tripoli	61	64	1167	920	12
Al-Jufra	0	0	0	0	2
Alzawea	31	25	70	130	2
Zwara	94	109	772	928	5
Al-Gebal-Elgharbi	27	31	0	0	7
Naloot	9	8	39	27	4
Total	690	718	3182	13261	86

Table A.7.4 Availability and functionality of basic internal medicine departments equipment in hospitals

Number of hospitals that have basic internal medicine departments equipment and functioning according to type of equipment, by type of hospitals, Libya 2012

	Teaching tertiary	Secondary hospital	Rural hospital	Other	Total
Measuring tape-height board/stadiometre					
Available	17	12	17	1	47
Functioning	12	11	4	1	28
Peak flow meters					
Available	16	10	14	0	40
Functioning	10	10	3	0	23
Spacers for inhalers					
Available	17	11	17	0	45
Functioning	9	10	7	0	26
Adult weighing scale					
Available	20	16	21	1	58
Functioning	15	14	9	1	39
Stethoscope ,thermometer and Blood pressure apparatus (may be digital or manual sphygmomanometer with stethoscope)					
Available	22	17	26	2	66
Functioning	20	14	11	2	47
No. of hospitals	33	20	31	2	86

Table A.7.5 Opinion of the internal medicine departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the internal medicine departments' heads regarding the severity of the problems they are facing, by type of hospitals, Libya 2012.

	Teaching tertiary	Secondary hospital	Rural hospital	Other	
Problems	Mean score	Mean score	Mean score	Mean score	Total
Human resources	3.0	2.8	4.0	1.5	3.2
Technical equipment	3.2	2.7	3.9	1.5	3.3
Budget allocation	3.3	3.2	3.9	1.0	3.5
Number of offices, administration/ personnel staff/ premises	3.2	2.8	4.1	1.5	3.4
Drugs and other consumable supplies	3.0	2.8	4.2	1.5	3.3
Number of health hospitals	33	20	31	2	86

Table A.7.6 Number of utilization of general surgery services and staff availability in the pre-and post-conflict phase

Number of utilization of general surgery services in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	No. of beds	Staff (total number of all staff in all areas of ped)						No. of operation sessions		Admissions		Outpatient visits		Number of hospitals
		Professional		Other staff		Total								
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Type of hospital														
Teaching tertiary	3345	710	890	621	653	1331	1543	1111	640	1918	3557	4308	7091	33
Secondary hospital	1157	314	338	378	454	692	792	2542	1512	3260	2977	12555	11449	20
Rural hospital	236	47	72	95	129	142	201	202	249	505	1749	3233	6302	31
Other	8	4	3	0	0	4	3	0	5	0	0	290	283	2
District														
Albetnan	40	21	9	0	0	21	9	0	0	0	120	0	465	3
Derna	314	0	0	0	0	0	0	0	0	0	0	0	0	3
Al-Gebal-Alakhdar	120	41	7	4	4	45	11	26	75	64	158	370	480	3
Almarege	50	3	4	18	18	21	22	45	50	100	130	333	375	4
Benghazi	805	180	329	65	60	245	389	381	312	228	944	300	1572	15
Al-Wahat	15	0	7	0	8	0	15	0	0	0	0	0	0	1
Ajdabia	87	2	2	60	60	62	62	0	0	0	0	0	0	2
Al-Kufra	25	11	12	8	8	19	20	143	111	392	246	677	629	2
Sirte	74	91	99	52	54	143	153	0	0	61	849	822	1871	2
Joufara	72	56	56	31	31	87	87	0	0	445	2901	300	2600	2
Morzig	80	30	29	134	134	164	163	666	471	200	189	1313	1614	2
Sebha	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Wadi-Alshati	58	12	11	0	0	12	11	0	5	2	8	1798	1463	4
Misurata	145	48	53	40	38	88	91	127	90	25	16	4	4	4
Al-Merghip	125	58	52	88	92	146	144	195	0	383	0	411	901	6
Tripoli	1768	368	413	378	411	746	824	1689	801	2131	1373	2983	2517	12
Al-Jufra	30	15	22	16	25	31	47	420	340	918	360	541	541	2
Alzawea	88	37	49	6	6	43	55	30	46	194	97	708	641	2
Zwara	158	66	81	124	195	190	276	118	87	395	340	9179	7716	5
Al-Gebal-Elgharbi	120	29	51	49	66	78	117	15	18	11	478	20	618	7
Naloot	572	7	16	21	26	28	42	0	0	136	82	627	1118	4
Total	4746	1075	1303	1094	1236	2169	2539	3855	2406	5685	8291	20386	25125	86

Table A.7.7 Percentage of general surgery services per professional (Consultants & Specialists & Generalists) staff in the pre-and post-conflict phase

Percentage of general surgery services per professional staff in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	No. of operation sessions		Admissions		Outpatient visits		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	
Type of hospital							
Teaching tertiary	1.6	0.7	2.7	4.0	6.1	8.0	33
Secondary hospital	8.1	4.5	10.4	8.8	40.0	33.9	20
Rural hospital	4.3	3.5	10.7	24.3	68.8	87.5	31
Other	0.0	1.7	0.0	0.0	72.5	94.3	2
District							
Albetnan	0.0	0.0	0.0	13.3	0.0	51.7	3
Derna	0.0	0.0	0.0	0.0	0.0	0.0	3
Al-Gebal-Alakhdar	0.6	10.7	1.6	22.6	9.0	68.6	3
Almarege	15.0	12.5	33.3	32.5	111.0	93.8	4
Benghazi	2.1	0.9	1.3	2.9	1.7	4.8	15
Al-Wahat	0.0	0.0	0.0	0.0	0.0	0.0	1
Ajdabia	0.0	0.0	0.0	0.0	0.0	0.0	2
Al-Kufra	13.0	9.3	35.6	20.5	61.5	52.4	2
Sirte	0.0	0.0	0.7	8.6	9.0	18.9	2
Joufara	0.0	0.0	7.9	51.8	5.4	46.4	2
Morzig	22.2	16.2	6.7	6.5	43.8	55.7	2
Sebha	0.0	0.0	0.0	0.0	0.0	0.0	1
Wadi-Alshati	0.0	0.5	0.2	0.7	149.8	133.0	4
Misurata	2.6	1.7	0.5	0.3	0.1	0.1	4
Al-Merghip	3.4	0.0	6.6	0.0	7.1	17.3	6
Tripoli	4.6	1.9	5.8	3.3	8.1	6.1	12
Al-Jufra	28.0	15.5	61.2	16.4	36.1	24.6	2
Alzawea	0.8	0.9	5.2	2.0	19.1	13.1	2
Zwara	1.8	1.1	6.0	4.2	139.1	95.3	5
Al-Gebal-Elgharbi	0.5	0.4	0.4	9.4	0.7	12.1	7
Naloot	0.0	0.0	19.4	5.1	89.6	69.9	4
Total	3.6	1.8	5.3	6.4	19.0	19.3	86

Table A.7.8 Availability and functionality of basic general surgery departments equipment in hospitals

Number of hospitals that have general surgery departments basic equipments and functionality according to type of hospitals, Libya 2012

	Teaching tertiary	Secondary hospital	Rural hospital	Other	Total
Self-inflating bag and mask- adult and pediatrics					
Available	17	18	18	1	54
Functioning	13	14	6	0	33
Needle holders, stitches and clips removal sets					
Available	22	18	25	1	66
Functioning	18	15	10	1	44
Scalpels, handle with blades					
Available	23	18	25	1	67
Functioning	19	15	12	1	47
Skin, soft tissue and lang. Retractor					
Available	22	17	18	1	58
Functioning	16	14	4	0	34
Different Surgical and tissue scissors					
Available	23	17	24	1	65
Functioning	18	14	12	0	44
Urinary catheters, Nasog-astric tube (10-16G) and chest tubes					
Available	24	18	20	1	63
Functioning	19	15	9	1	44
Complete rectal tray, Tourni-quet					
Available	19	12	15	0	46
Functioning	15	10	4	0	29
Suction apparatus (manual or electric sucker)					
Available	22	18	25	1	66
Functioning	16	15	12	0	43
Full set of central venous lines, sungs-taken tubes					
Available	18	14	17	1	50
Functioning	12	12	6	1	31
Oropha-ryngeal airway- adult, trachea-stomy set					
Available	19	17	21	1	58
Functioning	13	14	11	1	39
Endotracheal tube- cuffed sizes 5.5 to 9.0					
Available	21	18	19	1	59
Functioning	16	15	7	1	39
Laryn-goscope handle and blade- adult					
Available	21	18	20	1	60
Functioning	17	15	8	1	41
No. of hospitals	33	20	31	2	86

Table A.7.8a Availability and valid of basic general surgery and subspecialties departments in hospitals

Number of hospitals that have departmental basic equipments and valid according to type of equipment, by type of hospitals, Libya 2012

Background characteristic	Different types and sizes of absorbable and non-absorbable suture materials			Skin disinfectant fluids and antiseptic sol.			Number of hospitals
	Available	Observed	Valid	Available	Observed	Valid	
Type of hospital							
Teaching tertiary	25	19	17	27	21	17	33
Secondary hospital	17	14	14	17	13	13	20
Rural hospital	18	10	9	23	14	13	31
Other	2	1	1	2	1	1	2
Total	62	44	41	69	49	44	86

Table A.7.9 Opinion of the general surgery departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the general surgery departments' heads regarding the severity of the problems they are facing, by type of hospitals, Libya 2012.

Problems	Teaching tertiary	Secondary hospital	Rural hospital	Other	Total
	Mean score	Mean score	Mean score	Mean score	
Human resources	3.0	2.7	4.0	1.5	3.2
Technical equipment	3.1	3.1	3.8	2.0	3.3
Budget allocation	3.3	3.2	3.8	1.5	3.4
Number of offices, administration/ personnel staff/ premises	3.1	3.0	3.8	1.5	3.3
Drugs and other consumable supplies	2.9	2.8	3.9	1.5	3.2
Number of health hospitals	33	20	31	2	86

Table A.7.10 Number of utilization of OB/GYN services and staff availability in the pre-and post-conflict phase

Number of utilization of OB/GYN services in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	No. of beds	Staff (total number of all staff in all areas of OB/GYN)						Outpatient visits		No. of major procedures		Admissions		Number of hospitals
		Professional		Other staff		Total								
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Type of hospital														
Teaching tertiary	3124	648	660	534	719	1182	1379	27171	13973	29180	593	13525	25704	33
Secondary hospital	999	158	256	485	591	643	847	100419	9971	5198	1151	2599	23534	20
Rural hospital	4485	1319	1273	1239	1304	2558	2577	164528	223671	229911	517713	185660	241021	31
Other	31	16	44	15	15	31	59	0	0	0	0	173	131	2
District														
Albetnan	179	121	150	257	251	378	401	82918	28392	1463	11341	85575	11691	3
Derna	258	1	1	13	13	14	14	0	0	0	0	0	0	3
Al-Gebal-Alakhdar	628	308	157	184	346	492	503	11564	11501	1	81818	11222	13064	3
Almarege	96	19	19	89	87	108	106	1392	838	143	140	960	966	4
Benghazi	1788	330	447	241	421	571	868	16646	1010	0	366	2319	1019	15
Al-Wahat	111	32	34	22	22	54	56	11	0	0	1	6	0	1
Ajdabia	342	169	168	190	160	359	328	76	70	28332	82888	100	153	2
Al-Kufra	939	44	89	71	63	115	152	3662	4548	81841	18216	107	472	2
Sirte	39	5	4	34	40	39	44	6	0	51169	94	1103	977	2
Joufara	68	20	8	61	61	81	69	9000	1220	239	731	56	4161	2
Morzig	112	62	189	59	99	121	288	563	11175	10	0	11565	2324	2
Sebha	134	32	34	0	3	32	37	18281	1???	282	828	183	6	1
Wadi-Alshati	507	300	236	161	85	461	321	6	18	36363	163646	18355	81972	4
Misurata	666	130	131	64	55	194	186	50	50	0	13	0	3	4
Al-Merghip	268	124	111	335	285	459	396	93385	12727	4545	222	11257	32647	6
Tripoli	675	167	157	76	69	243	226	324	722	0	0	113	11154	12
Al-Jufra	170	27	51	47	46	74	97	3218	0???	0	55561	0	4	2
Alzawea	63	7	7	57	57	64	64	416	250	44	22	200	140	2
Zwara	210	105	66	99	175	204	241	3035	7913	29256	83	353	247	5
Al-Gebal-Elgharbi	303	112	134	158	189	270	323	28212	84669	30306	103033	58232	128521	7
Naloot	1083	26	40	55	102	81	142	19353	82511	295	454	251	869	4
Total	8639	2141	2233	2273	2629	4414	4862	292118	247615	264289	519457	201957	290390	86

Table A.7.11 Number of utilization of OB/GYN units related services availability in the pre-and post-conflict phase

Number of utilization of OB/GYN services and units related services in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	Staff (total number of all staff)		Outpatient visits		No. of Pts. served		No. of major operations/ procedures		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Type of hospital									
Teaching tertiary	20	0	0	0	0	0	0	0	33
Secondary hospital	38	60	348	367	100	40	348	367	20
Rural hospital	0	7	7	53	7	0	7	53	31
Other	0	18	250	820	250	6	250	820	2
District									
Albetnan	21	21	0	0	0	0	0	0	3
Derna	0	0	0	0	0	0	0	0	3
Al-Gebal-Alakhdar	0	7	0	3	0	0	0	3	3
Almarege	0	9	0	0	0	30	0	0	4
Benghazi	22	2	0	0	0	0	0	0	15
Al-Wahat	0	0	0	0	0	0	0	0	1
Ajdabia	0	0	0	0	0	0	0	0	2
Al-Kufra	0	0	0	0	0	0	0	0	2
Sirte	0	0	0	0	0	0	0	0	2
Joufara	0	0	0	0	0	0	0	0	2
Morzig	0	0	0	0	0	0	0	0	2
Sebha	0	0	0	0	0	0	0	0	1
Wadi-Alshati	0	18	250	820	250	6	250	820	4
Misurata	0	14	50	50	100	10	50	50	4
Al-Merghip	0	0	0	0	0	0	0	0	6
Tripoli	0	0	0	0	0	0	0	0	12
Al-Jufra	0	0	7	50	7	0	7	50	2
Alzawea	15	14	298	317	0	0	298	317	2
Zwara	0	0	0	0	0	0	0	0	5
Al-Gebal-Elgharbi	0	0	0	0	0	0	0	0	7
Naloot	0	0	0	0	0	0	0	0	4
Total	58	85	605	1240	357	46	605	1240	86

Table A.7.12 Percentage of OB/GYN services per professional (Consultants & Specialists) staff in the pre-and post-conflict phase

Percentage of OB/GYN services per professional staff in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	Outpatient visits		No. of major procedures		Admissions		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	
Type of hospital							
Teaching tertiary	41.9	21.2	45.0	0.9	20.9	38.9	33
Secondary hospital	635.6	38.9	32.9	4.5	16.4	91.9	20
Rural hospital	124.7	175.7	174.3	406.7	140.8	189.3	31
Other	0.0	0.0	0.0	0.0	10.8	3.0	2
District							
Albetnan	685.3	189.3	12.1	75.6	707.2	77.9	3
Derna	0.0	0.0	0.0	0.0	0.0	0.0	3
Al-Gebal-Alakhdar	37.5	73.3	0.0	521.1	36.4	83.2	3
Almarege	73.3	44.1	7.5	7.4	50.5	50.8	4
Benghazi	50.4	2.3	0.0	0.8	7.0	2.3	15
Al-Wahat	0.3	0.0	0.0	0.0	0.2	0.0	1
Ajdabia	0.4	0.4	167.6	493.4	0.6	0.9	2
Al-Kufra	83.2	51.1	1860.0	204.7	2.4	5.3	2
Sirte	1.2	0.0	10233.8	23.5	220.6	244.3	2
Joufara	450.0	152.5	12.0	91.4	2.8	520.1	2
Morzig	9.1	59.1	0.2	0.0	186.5	12.3	2
Sebha	571.3	0.0	8.8	24.4	5.7	0.2	1
Wadi-Alshati	0.0	0.1	121.2	693.4	61.2	347.3	4
Misurata	0.4	0.4	0.0	0.1	0.0	0.0	4
Al-Merghip	753.1	114.7	36.7	2.0	90.8	294.1	6
Tripoli	1.9	4.6	0.0	0.0	0.7	71.0	12
Al-Jufra	119.2	0.0	0.0	1089.4	0.0	0.1	2
Alzawea	59.4	35.7	6.3	3.1	28.6	20.0	2
Zwara	28.9	119.9	278.6	1.3	3.4	3.7	5
Al-Gebal-Elgharbi	251.9	631.9	270.6	768.9	519.9	959.1	7
Naloot	744.3	2062.8	11.3	11.4	9.7	21.7	4
Total	136.4	110.9	123.4	232.6	94.3	130.0	86

Table A.7.13 Availability and functionality of basic obstetrics and gynaecology departments equipments in hospitals

Number of hospitals that have departmental basic obstetrics and gynaecology departments equipments and functioning according to type of equipment, by type of hospitals, Libya 2012

	Teaching tertiary	Secondary hospital	Rural hospital	Other	Total
Examination light (flashlight ok)					
Available	8	13	6	1	28
Functioning	7	9	3	0	19
Delivery pack					
Available	7	12	4	1	24
Functioning	NA	NA	NA	NA	NA
Cord clamp					
Available	7	12	4	1	24
Functioning	NA	NA	NA	NA	NA
Episiotomy scissors					
Available	8	13	6	1	28
Functioning	NA	NA	NA	NA	NA
Scissors or blade to cut cord					
Available	8	13	6	1	28
Functioning	NA	NA	NA	NA	NA
Suture material with needle					
Available	8	13	4	1	26
Functioning	NA	NA	NA	NA	NA
Needle holders and tissue forceps					
Available	8	13	6	1	28
Functioning	NA	NA	NA	NA	NA
Suction apparatus (mucus extractor)					
Available	8	11	6	1	26
Functioning	6	9	3	0	18
Manual vacuum extractor					
Available	8	11	2	1	22
Functioning	6	8	1	0	15
Vacuum aspirator or D&C kit					
Available	8	12	0	1	21
Functioning	6	7	0	1	14
Neonatal bag and mask					
Available	9	11	1	1	22
Functioning	7	9	1	1	18
Incu-bator					
Available	8	13	5	1	27
Functioning	5	10	3	1	19
Cardioto-cography (CTG)					
Available	9	9	2	0	20
Functioning	NA	NA	NA	NA	NA
Blank partograph					
Available	7	6	2	1	16
Functioning	NA	NA	NA	NA	NA
Delivery bed					
Available	11	13	6	1	31
Functioning	NA	NA	NA	NA	NA
No. of hospitals	33	20	31	2	86

Table A.7.14 Opinion of the OB/GYN departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the OB/GYN departments' heads regarding the severity of the problems they are facing, by type of hospitals, Libya 2012.

	Teaching tertiary	Secondary hospital	Rural hospital	Other	
Problems	Mean score	Mean score	Mean score	Mean score	Total
Human resources	2.6	2.9	3.9	2.5	2.9
Technical equipment's	2.8	3.0	3.5	2.5	2.9
Budget allocation	2.8	3.2	3.9	2.0	3.1
Number of offices, administration/ personnel staff/ premises	2.5	2.9	3.9	2.5	2.9
Drugs and other consumable supplies.	2.4	3.1	3.4	2.5	2.8
Number of health hospitals	33	20	31	2	86

Table A.7.15 Number of utilization of paediatric services and staff availability in the pre-and post-conflict phase

Number of utilization of pediatric services in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	No. of beds	Staff (total number of all staff in all areas of ped)						Outpatient visits		No. of major procedures		Admissions		Number of hospitals
		Professional		Other staff		Total								
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Type of hospital														
Teaching tertiary	349	224	255	105	110	329	365	1230	1369	173	61	752	2534	33
Secondary hospital	399	84	83	115	126	199	209	3779	3769	5	23	1361	2106	20
Rural hospital	134	23	25	32	52	55	77	590	1853	15	296	1589	700	31
Other	27	20	20	0	0	20	20	235	381	41	0	317	128	2
District														
Albetnan	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Derna	55	0	0	0	0	0	0	0	0	0	0	0	0	3
Al-Gebal-Alakhdar	0	2	4	5	9	7	13	0	0	0	0	0	0	3
Almarege	63	14	19	33	33	47	52	562	562	0	20	218	304	4
Benghazi	25	29	16	0	5	29	21	0	88	171	61	200	1345	15
Al-Wahat	20	0	0	0	0	0	0	0	2	0	0	0	2	1
Ajdabia	30	2	2	4	4	6	6	100	150	0	0	50	40	2
Al-Kufra	26	3	3	20	20	23	23	0	0	15	12	581	249	2
Sirte	6	22	27	0	0	22	27	0	0	0	0	181	150	2
Joufara	80	44	44	43	43	87	87	771	1597	0	0	762	2358	2
Morzig	0	0	0	0	0	0	0	548	465	0	0	0	0	2
Sebha	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Wadi-Alshati	32	20	20	1	1	21	21	235	381	41	0	317	128	4
Misurata	128	8	12	0	0	8	12	0	0	0	0	0	0	4
Al-Merghip	141	40	24	52	52	92	76	590	420	0	0	900	0	6
Tripoli	38	61	72	0	0	61	72	511	97	2	0	59	43	12
Al-Jufra	40	6	5	6	9	12	14	780	1054	0	0	283	238	2
Alzawea	20	40	60	39	39	79	99	571	599	0	0	180	140	2
Zwara	55	24	36	33	48	57	84	469	171	0	0	132	0	5
Al-Gebal-Elgharbi	109	28	33	4	17	32	50	0	959	0	284	0	340	7
Naloot	41	8	6	12	8	20	14	697	827	5	3	156	131	4
Total	909	351	383	252	288	603	671	5834	7372	234	380	4019	5468	86

Table A.7.16 Precenatage of paediatric services per professional staff in the pre-and post-conflict phase

Percentage of pediatric services per professional staff in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	Outpatient visits		No. of major procedures		Admissions		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	
Type of hospital							
Teaching tertiary	5.5	5.4	0.8	0.2	3.4	9.9	33
Secondary hospital	45.0	45.4	0.1	0.3	16.2	25.4	20
Rural hospital	25.7	74.1	0.7	11.8	69.1	28.0	31
Other	11.8	19.1	2.1	0.0	15.9	6.4	2
District							
Albetnan	0.0	0.0	0.0	0.0	0.0	0.0	3
Derna	0.0	0.0	0.0	0.0	0.0	0.0	3
Al-Gebal-Alakhdar	0.0	0.0	0.0	0.0	0.0	0.0	3
Almarege	40.1	29.6	0.0	1.1	15.6	16.0	4
Benghazi	0.0	5.5	5.9	3.8	6.9	84.1	15
Al-Wahat	0.0	0.0	0.0	0.0	0.0	0.0	1
Ajdabia	50.0	75.0	0.0	0.0	25.0	20.0	2
Al-Kufra	0.0	0.0	5.0	4.0	193.7	83.0	2
Sirte	0.0	0.0	0.0	0.0	8.2	5.6	2
Joufara	17.5	36.3	0.0	0.0	17.3	53.6	2
Morzig	0.0	0.0	0.0	0.0	0.0	0.0	2
Sebha	0.0	0.0	0.0	0.0	0.0	0.0	1
Wadi-Alshati	11.8	19.1	2.1	0.0	15.9	6.4	4
Misurata	0.0	0.0	0.0	0.0	0.0	0.0	4
Al-Merghip	14.8	17.5	0.0	0.0	22.5	0.0	6
Tripoli	8.4	1.3	0.0	0.0	1.0	0.6	12
Al-Jufra	130.0	210.8	0.0	0.0	47.2	47.6	2
Alzawea	14.3	10.0	0.0	0.0	4.5	2.3	2
Zwara	19.5	4.8	0.0	0.0	5.5	0.0	5
Al-Gebal-Elgharbi	0.0	29.1	0.0	8.6	0.0	10.3	7
Naloot	87.1	137.8	0.6	0.5	19.5	21.8	4
Total	16.6	19.2	0.7	1.0	11.5	14.3	86

Table A.7.17 Availability and functionality of basic pediatric departments services in hospitals

Number of hospitals that have departmental basic pediatric departments services and functioning according to type of equipment, by type of hospitals, Libya 2012

	Teaching tertiary	Secondary hospital	Rural hospital	Other	Total
Child weighing scale					
Available	14	15	23	1	53
Functioning	9	10	12	1	32
Infant weighing scale					
Available	13	15	23	1	52
Functioning	7	11	11	1	30
Thermometer, stethoscope, Growth charts					
Available	13	16	22	1	52
Functioning	9	12	10	1	32
Neonatal monitor Transport incubator					
Available	12	10	18	0	40
Functioning	7	7	5	0	19
Incubator and phototherapy lamp Neonatal ventilator					
Available	12	13	16	0	41
Functioning	NA	NA	NA	NA	NA
Continuous positive Airway pressure (CPAP)					
Available	11	8	10	0	29
Functioning	NA	NA	NA	NA	NA
Suction Machine					
Available	14	15	20	1	50
Functioning	NA	NA	NA	NA	NA
Nebulizer					
Available	12	15	15	1	43
Functioning	NA	NA	NA	NA	NA
No. of hospitals	33	20	31	2	86

Table A.7.18 Opinion of the pediatric departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the pediatric departments' heads regarding the severity of the problems they are facing, by type of hospitals, Libya 2012.

	Teaching tertiary	Secondary hospital	Rural hospital	Other	
Problems	Mean score	Mean score	Mean score	Mean score	Total
Human resources	3.0	2.8	3.8	1.5	3.2
Technical equipment's	3.2	2.8	3.6	1.5	3.2
The annual operating budget	3.1	2.9	3.6	1.0	3.2
Budget and budget allocation	3.0	2.5	3.6	1.0	3.0
Number of offices, administration/ personnel staff/ premises	3.2	2.6	3.8	1.5	3.2
Drugs and other consumable supplies.	2.9	2.7	3.9	1.5	3.2
Number of health hospitals	33	20	31	2	86

Table A.7.19 Number of utilization of operating theatre services and staff availability in the pre-and post-conflict phase

Number of utilization of operating theatre services in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	No. of rooms	Staff (total number of all staff in all areas of operating theatre)		No of Elective surgery		No of Emergency surgery		Number of hospitals
		Pre	Post	Pre	Post	Pre	Post	
Type of hospital								
Teaching tertiary	295	12820	11545	3294	3242	951	531	33
Secondary hospital	207	4650	5407	1828	2098	817	651	20
Rural hospital	441	9726	11930	3087	3701	435	449	31
Other	7	153	360	0	10	0	3	2
District								
Albetnan	23	366	667	141	415	104	124	3
Derna	9	0	0	0	0	0	0	3
Al-Gebal-Alakhdar	37	1487	1056	1	114	81	17	3
Almarege	7	143	143	333	555	160	113	4
Benghazi	127	4458	3487	377	959	60	66	15
Al-Wahat	0	222	343	111	9	0	0	1
Ajdabia	85	56	818	282	812	21	55	2
Al-Kufra	56	32	196	818	111	15	55	2
Sirte	44	2316	1707	1	1	73	1	2
Joufara	35	389	2141	1359	1249	48	42	2
Morzig	36	416	723	545	133	30	5	2
Sebha	0	555	891	0	0	0	0	1
Wadi-Alshati	59	394	1097	736	821	11	58	4
Misurata	7	1162	2253	145	289	85	340	4
Al-Merghip	162	1917	1838	694	641	79	192	6
Tripoli	153	3573	2145	1390	965	883	320	12
Al-Jufra	13	3188	2839	499	1166	235	3	2
Alzawea	11	1397	942	350	370	179	138	2
Zwara	20	2044	2037	37	33	11	13	5
Al-Gebal-Elgharbi	41	2771	2653	297	53	19	18	7
Naloot	25	463	1266	93	355	109	74	4
Total	950	27349	29242	8209	9051	2203	1634	86

Table A.7.20 Number of utilization of anaesthesia services and staff availability in the pre-and post-conflict phase

Number of utilization of anaesthesia services in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	Staff (total number of all staff in all areas of anaesthesia)		No. of pain control and analgesia clinic		No. of inpatients served		No. of procedures		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Type of hospital									
Teaching tertiary	443	488	0	0	0	0	7203	2177	33
Secondary hospital	290	255	0	0	0	0	795	658	20
Rural hospital	57	42	1	5	10	6	202	124	31
Other	3	4	0	0	0	0	0	17	2
District									
Albetnan	37	39	0	0	0	0	493	318	3
Derna	0	0	0	0	0	0	0	0	3
Al-Gebal-Alakhdar	0	0	1	0	0	0	43	7	3
Almarege	28	28	0	0	0	0	63	47	4
Benghazi	140	98	0	0	0	0	687	32	15
Al-Wahat	0	5	0	0	0	0	0	0	1
Ajdabia	16	21	0	0	0	0	0	0	2
Al-Kufra	10	10	0	0	0	0	143	111	2
Sirte	24	50	0	0	0	0	406	927	2
Joufara	40	52	0	0	0	0	128	725	2
Morzig	46	6	0	0	0	0	0	1	2
Sebha	0	0	0	0	0	0	0	0	1
Wadi-Alshati	3	4	0	0	0	0	0	17	4
Misurata	41	33	0	0	0	0	230	145	4
Al-Merghip	9	9	0	0	0	0	0	0	6
Tripoli	172	183	0	0	0	0	4780	311	12
Al-Jufra	0	0	0	0	0	0	5	5	2
Alzawea	76	86	0	0	0	0	240	200	2
Zwara	88	80	0	0	0	0	966	125	5
Al-Gebal-Elgharbi	54	77	0	5	10	6	16	5	7
Naloot	9	8	0	0	0	0	0	0	4
Total	793	789	1	5	10	6	8200	2976	86

Table A.7.21 Opinion of the operating theatre and anaesthesia departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the operating theatre and anaesthesia departments' heads regarding the severity of the problems they are facing, by type of hospitals, Libya 2012.

Problems	Teaching tertiary	Secondary hospital	Rural hospital	Other	Total
	Mean score	Mean score	Mean score	Mean score	
Human resources	2.1	2.7	4.4	2.0	2.7
Technical equipment	2.8	2.7	4.4	1.0	3.0
Budget allocation	2.8	2.7	4.4	1.0	3.0
Number of offices, administration/ personnel staff/premises	2.5	2.6	4.4	3.0	2.9
Drugs and other consumable supplies	2.3	2.7	4.4	2.0	2.8
Number of health hospitals	33	20	31	2	86

Table A.7.22 Number of utilization radiology services and availability of staff in the pre-and post-conflict phase

Number of utilization and availability of radiology services in the hospitals, by type of hospitals and district, Libya 2012

Type of hospital	Staff (total number of all staff in all areas of radio)		Outpatient		Inpatient		Number of functioning equipment		Number of hospitals in which radiology services are available		Number of served patients		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Teaching tertiary	3039	2172	2496	6647	11108	5906	892	586	25	20	366407	379904	33
Secondary hospital	284	536	4150	10668	4674	6204	42	156	13	13	155043	119167	20
Rural hospital	646	1578	829	4522	240	31283	188	528	6	6	1460901	1291028	31
Other	37	42	0	12	0	0	8	2	1	1	44898	23232	2
Total	4006	4328	7475	21849	16022	43393	1130	1272	45	40	2027249	1813331	86

Table A.7.23 Utilization and Availability of functioning radiation oncology services in hospitals

Number of hospitals that have functioning radiation oncology services operating according to type of services, by type of hospitals and district, Libya 2012

Background characteristic	Cobalt-60			Linear accelerator			Brachy therapy			Number of hospitals
	Available	Func-tioning	No. of served patient	Available	Func-tioning	No. of served patient	Available	Func-tioning	No. of served patient	
Type of hospital										
Teaching tertiary	2	1	222	2	1	222	1	0	222	33
Secondary hospital	0	0	0	0	0	0	0	0	0	20
Rural hospital	0	0	0	0	0	0	0	0	0	31
Other	1	0	0	1	1	0	0	0	0	2
District										
Albetnan	0	0	0	0	0	0	0	0	0	3
Derna	0	0	0	0	0	0	0	0	0	3
Al-Gebal-Alakhdar	0	0	0	0	0	0	0	0	0	3
Almarege	0	0	0	0	0	0	0	0	0	4
Benghazi	1	0	0	1	1	0	0	0	0	15
Al-Wahat	0	0	0	0	0	0	0	0	0	1
Ajdabia	0	0	0	0	0	0	0	0	0	2
Al-Kufra	0	0	0	0	0	0	0	0	0	2
Sirte	0	0	0	0	0	0	0	0	0	2
Joufara	0	0	0	0	0	0	0	0	0	2
Morzig	0	0	0	0	0	0	0	0	0	2
Sebha	0	0	0	0	0	0	0	0	0	1
Wadi-Alshati	0	0	0	0	0	0	0	0	0	4
Misurata	0	0	0	0	0	0	0	0	0	4
Al-Merghip	0	0	0	0	0	0	0	0	0	6
Tripoli	1	1	0	1	1	0	0	0	0	12
Al-Jufra	0	0	0	0	0	0	0	0	0	2
Alzawea	0	0	0	0	0	0	0	0	0	2
Zwara	1	0	222	1	0	222	1	0	222	5
Al-Gebal-Elgharbi	0	0	0	0	0	0	0	0	0	7
Naloot	0	0	0	0	0	0	0	0	0	4
Total	3	1	222	3	2	222	1	0	222	86

Table A.7.24 Number of utilization and availability of lab services in the pre-and post-conflict phase

Number of utilization and availability of lab services in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	Staff (total number of all staff in all areas of lab)		Inpatients		Outpatient		Number of functioning equipment		Number of served patients		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Type of hospital											
Teaching tertiary	517	467	1025	977	3566	3660	161	148	145982	147755	33
Secondary hospital	204	2757	449	495	1274	883	18	20	155406	146801	20
Rural hospital	16	16	0	0	0	0	0	0	217402	427388	31
Other	16	16	0	0	0	0	0	0	786	1905	2
District											
Albetnan	0	0	0	0	0	0	0	0	12	91278	3
Derna	0	0	0	0	0	0	0	0	0	0	3
Al-Gebal-Alakhdar	0	0	0	0	0	0	0	0	44776	44610	3
Almarege	38	52	297	297	1100	500	4	5	2650	8566	4
Benghazi	67	3	2	22	0	0	0	1	27337	73313	15
Al-Wahat	0	0	0	0	0	0	0	0	136	0	1
Ajdabia	0	0	0	0	0	0	0	0	2376	0	2
Al-Kufra	0	0	0	0	0	0	0	0	376	0	2
Sirte	20	38	99	99	351	351	17	13	2514	4728	2
Joufara	79	75	555	555	2400	2787	9	13	23989	42349	2
Morzig	0	0	0	0	0	0	0	0	984	114342	2
Sebha	0	0	0	0	0	0	0	0	0	176	1
Ghat	.	.	.	.	.	.	.	.	.	.	0
Wadi-Alhiat	.	.	.	.	.	.	.	.	.	.	0
Wadi-Alshati	16	16	0	0	0	0	0	0	3178	1745	4
Misurata	40	29	0	0	0	0	0	0	10	186	4
Al-Merghip	0	0	0	0	20	20	0	0	169778	176597	6
Tripoli	220	2651	245	295	316	279	63	61	223492	145793	12
Al-Jufra	15	15	0	0	0	0	0	0	121	16	2
Alzawea	56	79	124	12	505	248	54	46	11024	10383	2
Zwara	171	267	152	192	148	358	32	29	6488	9602	5
Al-Gebal-Elgharbi	23	23	0	0	0	0	0	0	143	165	7
Naloot	8	8	0	0	0	0	0	0	192	0	4
Total	753	3256	1474	1472	4840	4543	179	168	519576	723849	86

Table A.7.24a Number of hospitals in which lab services are available

Number of utilization and availability of lab services in the hospitals, by type of hospitals and district, Libya 2012

	Teaching tertiary	Secondary hospital	Rural hospital	Other	Total
Biochemistry					
Pre-conflict	15	12	8	1	36
Post-conflict	12	10	6	1	29
Haematology					
Pre-conflict	15	11	7	1	34
Post-conflict	13	10	4	1	28
Immunology (serology)					0
Pre-conflict	16	10	6	1	33
Post-conflict	12	10	4	1	27
Microbiology					
Pre-conflict	18	8	4	1	31
Post-conflict	14	8	2	1	25
Parasitology					
Pre-conflict	14	8	4	0	26
Post-conflict	12	8	2	0	22
Pathology					
Pre-conflict	9	4	6	0	19
Post-conflict	5	4	4	0	13
Hormones					
Pre-conflict	13	7	4	0	24
Post-conflict	9	8	3	0	20
Blood bank services					
Pre-conflict	12	10	7	1	30
Post-conflict	10	9	6	1	26
No. of hospitals	33	20	31	2	86

Table A.7.25 Availability and functionality of laboratory basic departmental services in hospitals

Number of hospitals that have departmental laboratory basic departmental equipments services and functioning according to type of equipment, by type of hospitals, Libya 2012

	Teaching tertiary	Secondary hospital	Rural hospital	Other	Total
Automated hematology system					
Available	28	18	14	1	61
Functioning	23	17	9	1	50
Automated biochemistry system					
Available	26	16	12	1	55
Functioning	23	15	3	0	41
Automated immunology system					
Available	25	11	6	1	43
Functioning	19	7	1	0	27
Fully automated ELISA system					
Available	21	15	8	1	45
Functioning	15	11	1	0	27
Automated diagnostic microbiology system					
Available	18	7	5	1	31
Functioning	NA	NA	NA	NA	NA
Spectrophotometer					
Available	26	14	14	1	55
Functioning	NA	NA	NA	NA	NA
Centrifuge					
Available	26	17	17	1	61
Functioning	NA	NA	NA	NA	NA
Microscope					
Available	27	16	17	1	61
Functioning	NA	NA	NA	NA	NA
No. of hospitals	33	20	31	2	86

Table A.7.26 Number of intensive care services and staff availability in the pre-and post-conflict phase

Number of intensive care services in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	Staff (total number of all staff in all areas of ICU)		Outpatient visits		Inpatient		Total No. of patients served		Number of functioning equipment		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Type of hospital											
Teaching tertiary	1245	1245	449	416	940	1363	1389	1779	645	227	33
Secondary hospital	214	513	92	22	256	254	348	276	118	120	20
Rural hospital	2	2	8	0	19	1	27	1	0	2	31
Other	12	16	0	0	0	0	0	0	0	7	2
District											
Albetnan	2	2	5	0	15	1	20	1	0	2	3
Derna	0	0	0	0	0	0	0	0	0	0	3
Al-Gebal-Alakhdar	0	0	0	0	0	0	0	0	0	0	3
Almarege	35	35	0	0	99	99	99	99	0	0	4
Benghazi	95	61	2	8	33	35	35	43	8	0	15
Al-Wahat	0	0	0	0	0	0	0	0	0	0	1
Ajdabia	0	0	0	0	0	0	0	0	0	0	2
Al-Kufra	0	0	0	0	0	0	0	0	0	0	2
Sirte	14	14	0	0	50	52	50	52	20	28	2
Joufara	76	76	0	0	99	123	99	123	0	0	2
Morzig	0	0	3	0	4	0	7	0	0	0	2
Sebha	0	0	0	0	0	0	0	0	0	0	1
Wadi-Alshati	12	16	0	0	0	0	0	0	0	7	4
Misurata	56	59	0	0	32	37	32	37	100	100	4
Al-Merghip	0	0	29	19	4	6	33	25	0	0	6
Tripoli	259	458	222	200	768	1174	990	1374	567	161	12
Al-Jufra	4	4	0	0	4	4	4	4	6	6	2
Alzawea	73	65	275	208	82	76	357	284	48	38	2
Zwara	802	958	13	3	25	11	38	14	14	14	5
Al-Gebal-Elgharbi	39	22	0	0	0	0	0	0	0	0	7
Naloot	6	6	0	0	0	0	0	0	0	0	4
Total	1473	1776	549	438	1215	1618	1764	2056	763	356	86

Table A.7.27 Opinion of the radiology, laboratory, matron departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the radiology, laboratory, matron departments' heads regarding the severity of the problems they are facing, by type of hospitals, Libya 2012.

Problems	Teaching tertiary	Secondary hospital	Rural hospital	Other	Total
	Mean score	Mean score	Mean score	Mean score	
Human resources	2	2	2	1	2
Technical equipment	3	3	2	2	2
Budget allocation	3	3	2	1	2
Number of offices, administration/ personnel staff/premises	2	2	2	1	2
Drugs and other consumable supplies	2	3	2	2	2
Number of health hospitals	1	1	1	1	1

Table A.7.28 Number of dentist services and staff availability in the pre-and post-conflict phases

Number of dentist services in the hospitals, by type of hospitals and district, Libya 2012

Background characteristic	No. of Dental units	Staff (total number of all staff in all areas of dentists)		Number of patients served		Number of hospitals
		Pre	Post	Pre	Post	
Type of hospital						
Teaching tertiary	62	61	174	2618	1605	33
Secondary hospital	6	23	26	1422	1079	20
Rural hospital	3	6	33	0	625	31
Other	0	0	0	0	0	2
District						
Albetnan	0	4	5	0	0	3
Derna	8	0	0	0	0	3
Al-Gebal-Alakhdar	0	0	0	0	0	3
Almarege	0	0	0	0	0	4
Benghazi	7	13	14	450	575	15
Al-Wahat	2	0	3	0	0	1
Ajdabia	0	0	0	0	0	2
Al-Kufra	0	0	0	0	0	2
Sirte	0	0	0	0	0	2
Joufara	2	11	11	0	0	2
Morzig	0	0	0	0	0	2
Sebha	0	0	0	0	0	1
Wadi-Alshati	0	0	0	0	0	4
Misurata	4	0	0	0	0	4
Al-Merghip	0	3	1	200	0	6
Tripoli	39	29	142	1728	895	12
Al-Jufra	0	4	4	250	250	2
Alzawea	1	4	4	512	585	2
Zwara	5	17	19	900	504	5
Al-Gebal-Elgharbi	1	0	25	0	500	7
Naloot	2	5	5	0	0	4
Total	71	90	233	4040	3309	86

8. Effect of Conflict

Table A.8.1 Effect of conflict on Basic on Central Sterilization Unit (CSU) and ambulance service departments

Number of and percentage hospitals that were moderately damage and severely damage in CUS and ambulance service departments by type of hospitals land district, Libya 2012.

	Central SterilizationUnit (CSU)				Ambulance service department				
	Moderately damage		Severely damage		Moderately damage		Severely damage		Number of health hospitals
Background characteristic	No.	%	No.	%	No.	%	No.	%	
Type of hospital									
Teaching tertiary	5	15.2	3	9.1	5	15.2	10	30.3	33
Secondary hospital	2	10.0	0	0.0	1	5.0	7	35.0	20
Rural hospital	1	3.2	5	16.1	3	9.7	4	12.9	31
Other	0	0.0	1	50.0	0	0.0	1	50.0	2
District									
Albetnan	0	0.0	1	33.3	0	0.0	0	0.0	3
Derna	0	0.0	0	0.0	0	0.0	0	0.0	3
Al-Gebal-Alakhdar	0	0.0	0	0.0	2	66.7	0	0.0	3
Almarege	0	0.0	1	25.0	0	0.0	1	25.0	4
Benghazi	1	6.7	1	6.7	0	0.0	6	40.0	15
Al-Wahat	0	0.0	0	0.0	0	0.0	0	0.0	1
Ajdabia	0	0.0	0	0.0	0	0.0	0	0.0	2
Al-Kufra	0	0.0	0	0.0	0	0.0	0	0.0	2
Sirte	0	0.0	0	0.0	0	0.0	0	0.0	2
Joufara	0	0.0	0	0.0	0	0.0	1	50.0	2
Morzig	0	0.0	0	0.0	0	0.0	1	50.0	2
Sebha	0	0.0	1	100.0	0	0.0	0	0.0	1
Wadi-Alshati	0	0.0	1	25.0	0	0.0	1	25.0	4
Misurata	1	25.0	2	50.0	0	0.0	4	100.0	4
Al-Merghip	0	0.0	0	0.0	2	33.3	2	33.3	6
Tripoli	3	25.0	1	8.3	3	25.0	2	16.7	12
Al-Jufra	0	0.0	0	0.0	0	0.0	0	0.0	2
Alzawea	0	0.0	0	0.0	0	0.0	1	50.0	2
Zwara	0	0.0	0	0.0	0	0.0	2	40.0	5
Al-Gebal-Elgharbi	3	42.9	0	0.0	2	28.6	0	0.0	7
Naloot	0	0.0	1	25.0	0	0.0	1	25.0	4
Total	8	9.3	9	10.5	9	10.5	22	25.6	86

Table A.8.2 Hospitals that faced severe problems

Number and percentage of hospitals that faced specific severe problems related to human resources, Technical equipment, Adequacy of the allocated budget, Support from management or higher authorities, Drugs and other consumable supplies according to the degree of the problem as reported by hospital director, by type of hospitals land district, Libya 2012.

Background characteristic	Human resource problem		Technical equipment		Adequacy of the allocated budget		Support from authorities		Drugs and supplies		Number of health hospitals
	No.	%	No.	%	No.	%	No.	%	No.	%	
Type of hospital											
Teaching tertiary	5	15.2	6	18.2	10	30.3	9	27.3	4	12.1	33
Secondary hospital	2	10.0	1	5.0	3	15.0	2	10.0	1	5.0	20
Rural hospital	13	41.9	12	38.7	14	45.2	15	48.4	14	45.2	31
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2
District	20	23.3	19	22.1	27	31.4	26	30.2	19	22.1	86
Albetnan	2	66.7	1	33.3	1	33.3	2	66.7	1	33.3	3
Derna	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3
Al-Gebal-Alakhdar	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3
Almarege	1	25.0	1	25.0	2	50.0	1	25.0	1	25.0	4
Benghazi	2	13.3	3	20.0	3	20.0	4	26.7	1	6.7	15
Al-Wahat	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1
Ajdabia	1	50.0	1	50.0	1	50.0	1	50.0	1	50.0	2
Al-Kufra	1	50.0	1	50.0	1	50.0	1	50.0	1	50.0	2
Sirte	1	50.0	1	50.0	2	100.0	1	50.0	1	50.0	2
Joufara	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	2
Morzig	1	50.0	0	0.0	1	50.0	1	50.0	0	0.0	2
Sebha	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1
Wadi-Alshati	2	50.0	2	50.0	2	50.0	2	50.0	2	50.0	4
Misurata	3	75.0	3	75.0	3	75.0	3	75.0	3	75.0	4
Al-Merghip	1	16.7	0	0.0	2	33.3	1	16.7	2	33.3	6
Tripoli	2	16.7	2	16.7	5	41.7	5	41.7	2	16.7	12
Al-Jufra	0	0.0	0	0.0	0	0.0	0	0.0	1	50.0	2
Alzawea	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2
Zwara	0	0.0	1	20.0	0	0.0	0	0.0	0	0.0	5
Al-Gebal-Elgharbi	3	42.9	3	42.9	3	42.9	3	42.9	3	42.9	7
Naloot	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4
Total	20	23.3	19	22.1	27	31.4	26	30.2	19	22.1	86

Annex Tables B

2. Infrastructure

Table B.2.1 Characteristics of hospitals

Characteristics of hospitals according to type of hospital, Libya 2012

		Current status of the hospital					
	Number of beds	Renovated	Under renovation contract	Population year 2010	Number of hospitals per 10.000 population	Number of beds per 10.000 population	Number of hospitals
Tripoli Medical Center	2103	0	0				29

Table B.2.2 Effect of conflict on hospitals' building condition

Number and percentage of hospitals that were with moderately damage building and severely damage building, Libya 2012.

	Hospitals that were moderately damage	Hospitals that were severely damage	Hospitals that were moderately and severely damage	Number of hospitals
	No.	No.	%	
Tripoli Medical Center	0	0	0.0	29

3. Organizational Structure and Management

Table B.3.1 Hospital with available staff and management job description

Number of hospitals that have clear written job descriptions and TORs for medical director, administrative director, clinic head department, and employees, Libya 2012.

	Medical director		Administrative director		Clinic of department heads		Employees		Number of hospitals
	No.	%	No.	%	No.	%	No.	%	
Tripoli Medical Center	0	0.0	0	0.0	0	0.0	0.	0.0	29

Table B.3.2 Hospitals with organizational structure, vision, mission and management board

Number and percentage of hospitals with clear written vision, mission, organizational structure, management board, and community represented in the board, Libya 2012.

	Mission		Vision		Organizational structure		Management board		Community represented in the board		Number of hospitals
	No.	%	No.	%	No.	%	No.	%	No.	%	
Tripoli Medical Center	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0	29

Table B.3.3 Hospitals with barrier to the accessibility of services

Number and percentage of hospitals with barrier to the accessibility of services for people, Libya 2012.

	barrier to the accessibility of services		Number of hospitals
	No.	%	
Tripoli Medical Center	0	0	29

Table B.3.4 Availability and functioning of specific teams in the hospital

Number of availability and functioning of specific teams in the hospital such as (trauma, cardiac arrest, nutritional committee, ethical committee, quality management, infection control, etc.), Libya 2012.

	Tripoli Medical Center
Trauma Team	
Available	0
Functioning	0
Cardiac arrest team	
Available	0
Functioning	0
Nutritional Committee	
Available	0
Functioning	0
Ethical Committee	
Available	0
Functioning	0
Research Committee	
Available	0
Functioning	0
Cancer Team	
Available	1
Functioning	1
Quality management	
Available	1
Functioning	1
Infection control	
Available	1
Functioning	1
Patient safety	
Available	NA
Functioning	NA
Mortality and morbidity committee	
Available	1
Functioning	0
IT infrastructures (Network)	
Available	0
Functioning	0
Rehabilitation center	
Available	1
Functioning	1
Number of hospitals	29

Table B.3.5 Training activities in hospitals

Percentage of hospitals that offering any formal/ informal and in-service training courses on a regular base, and percentage of hospitals that providing training activities for stuff, Libya 2012.

	Hospitals that offering any formal/ informal and in-service training courses on a regular base		Hospitals with special budget for training		Number of hospitals
	Number	Percentage	Number	Percentage	
Tripoli Medical Center	1	100.0	1	100.0	29

Table B.3.6 Number of hospitals that offered training activities to different medical staff

Number of hospitals that offering any formal/ informal and in-service training courses on a regular base, and percentage of hospitals that providing training activities for stuff, Libya 2012.

	Type of stuff who received training activities						
	Specialist Doctors	Generalist Doctors	House officers Doctors	Undergraduates Medical	Nurses and Technicians	Others (specify)	Number of hospitals
Tripoli Medical Center	0	1	0	0	1	0	29

4. Health Workforce

Table B.4.1 Number of physicians in hospitals

Number of physicians in the hospitals according to type of surgical specialties, Libya 2012

	Number of physicians															
	Internal medicine		Pediatric		OB/GYN		Surgery		Anesthetia		ICU		Dentist		Radiology	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Tripoli Medical Center	388	516	214	238	17	2	0	0	62	61	270	162	18	19	35	33

Table B.4.2 Number of support staff in hospitals

Number of support staff (nurses and technicians, and midwifes) in the hospitals according to type of surgical specialties, Libya 2012

	Number of support staff															
	Internal medicine		Pediatric		OB/GYN		Surgery		Anesthetia		ICU		Dentist		Radiology	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Tripoli Medical Center	464	NA	18	1	155	40	40	40	50	50	0	33	18	18	10	10

Table B.4.3 Physicians' density per 10,000 population rather absolute number

Density, of physicians per 10,000 population according to type of surgical specialties, Libya 2012

	Internal medicine		Pediatric		OB/GYN		Surgery		Anesthetia		ICU		Dentist		Radiology	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Tripoli Medical Center	15.1	20.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table B.4.4 Number of pharmacists and pharmacists assistants in hospitals

Number of professional pharmacists, total number of assistant pharmacists, and total number of other technical staff (nurses and technicians), Libya 2012.

	Total number of professional pharmacists		Total number of assistant pharmacists		Total number of other technical staff(nurses and technician)		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	33	NA	11	NA	2	NA	29

5. Financing

Table B.5.1 Average annual budget in hospitals

Percentage of hospitals that have annual budget and average amount of known annual budge money in Million Libyan Dinar and minimum and maximum range of budget Libya 2012.

	Percentage of hospitals that have annual budget	Average amount of known annual budget in Million Libyan Dinar	Range		Number of hospitals
			Minimum	Maximum	
Tripoli Medical Center	3.4	95.06			29

Table B.5.2 Distribution of budget among key areas of services

Distribution of budget among key areas such as (e.g. human resources, medicine, patient and administrative support, maintenance, and training), Libya 2012.

	Percentage of annual budget spent in						
	Human Resources	Medicine and Lab. Technology	Patient support (Food)	Administrative support services	Maintenance and repair	Training and education	Number of hospitals
Tripoli Medical Center	NA	NA	NA	NA	NA	NA	29

Table B.5.3 Outsourcing services

Number and percentage of hospitals that finance outsource of non-clinical services, clinical services, and other services, Libya 2012.

	Non clinical services		Clinical services		Other services		Number of hospitals
	No.	%	No.	%	No.	%	
Tripoli Medical Center	1	100	0	0	0	0	29

6. Pharmaceutical Sector and Drugs

Table B.6.1 Availability of pharmacy departments in hospitals and shortage of drug

Number and percentage of hospitals that have pharmacy departments and hospitals with shortage of drugs, Libya 2012.

	Availability of pharmacy department				Hospitals with shortage of drugs				Number of hospitals
	Pre		Post		Pre		Post		
	No.	%	No.	%	No.	%	No.	%	
Tripoli Medical Center	1	100	1	100	1	100	1	100	29

7. Service Delivery and Utilization

Table B.7.1 Number of utilization of internal medicine services and staff availability in the pre-and post-conflict phase

Number of utilization of internal medicine services and staff availability in the hospitals, Libya 2012

	No. of beds	Staff (total number of all staff in all areas of internal medicine)						Outpatient visits		No. of major procedures		Number of hospitals
		Professional		Other staff		Total						
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	832	364	492	464	530	828	1022	28032	24244	145	123	29

Table B.7.2 Percentage of internal medicine services per professional (Consultants & Specialists & Generalists) staff in the pre-and post-conflict phase

Percentage of internal medicine services per professional staff in the hospitals, Libya 2012

	Outpatient visits		No. of major procedures		Number of hospitals
	Pre	Post	Pre	Post	
Tripoli Medical Center	77.01	49.28	0.40	0.25	29

Table B.7.3 Number of utilization of medical units related services and staff availability in the pre-and post-conflict phase

Number of utilization of medical units related services and staff availability in hospitals, Libya 2012

	Staff (total number of all staff)		Outpatient visits		Number of hospitals
	Pre	Post	Pre	Post	
Tripoli Medical Center	60	64	377	260	29

Table B.7.4 Availability and functionality of basic internal medicine departments equipment in hospitals

Number of hospitals that have basic internal medicine departments equipment and functioning according to type of equipment, Libya 2012

	Tripoli Medical Center
Measuring tape-height board/stadiometre	
Available	5
Functioning	4
Peak flow meters	
Available	2
Functioning	1
Spacers for inhalers	
Available	3
Functioning	3
Adult weighing scale	
Available	8
Functioning	7
Stethoscope ,thermometer and Blood pressure apparatus (may be digital or manual sphygmomanometer with stethoscope)	
Available	8
Functioning	8
No. of hospitals	29

Table B.7.5 Opinion of the internal medicine departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the internal medicine departments' heads regarding the severity of the problems they are facing, Libya 2012.

	Tripoli Medical Center
Problems	Mean score
Human resources	3.1
Technical equipment	3.8
Budget allocation	4.3
Number of offices, administration/ personnel staff/ premises	3.4
Drugs and other consumable supplies	3.2
Number of health hospitals	29

Table B.7.6 Number of utilization of general surgery services and staff availability in the pre-and post-conflict phase

Number of utilization of general surgery services in the hospitals, Libya 2012

	No. of beds	Staff (total number of all staff in all areas of ped)						No. of operation sessions		Admissions		Outpatient visits		Number of hospitals
		Professional		Other staff		Total								
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	760	331	323	334	313	665	636	44	44	1339	1285	0	0	29

Table B.7.7 Percentage of general surgery services per professional (Consultants & Specialists & Generalists) staff in the pre-and post-conflict phase

Percentage of General surgery services per professional staff in the hospitals, Libya 2012

	No. of operation sessions		Admissions		Outpatient visits		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	0.13	0.14	4.04	3.98	0	0	29

Table B.7.8 Availability and functionality of basic general surgery departments equipment in hospitals

Number of hospitals that have general surgery departments basic equipments and functionality Libya 2012

	Tripoli Medical Center
Self-inflating bag and mask- adult and pediatrics	
Available	8
Functioning	8
Needle holders, stitches and clips removal sets	
Available	6
Functioning	6
Scalpels, handle with blades	
Available	7
Functioning	7
Skin, soft tissue and lang. Retractor	
Available	2
Functioning	2
Different Surgical and tissue scissors	
Available	5
Functioning	5
Urinary catheters, Nasog-astric tube (10-16G) and chest tubes	
Available	8
Functioning	8
Complete rectal tray, Tourni-quet	
Available	6
Functioning	5
Suction apparatus (manual or electric sucker)	
Available	6
Functioning	5
Full set of central venous lines, sungs-taken tubes	
Available	2
Functioning	2
Oropha-ryngeal airway- adult, trachea-stomy set	
Available	5
Functioning	5
Endotracheal tube- cuffed sizes 5.5 to 9.0	
Available	5
Functioning	4
Laryn-goscope handle and blade- adult	
Available	5
Functioning	5
No. of hospitals	29

Table B.7.8a Availability and valid of basic general surgery and subspecialties departments in hospitals

Number of hospitals that have departmental basic equipments and valid according to type of equipment, Libya 2012

	Different types and sizes of absorbable and non-absorbable suture materials			Skin disinfectant fluids and antiseptic sol.			Number of hospitals
	Available	Observed	Valid	Available	Observed	Valid	
Tripoli Medical Center	3	3	1	8	7	7	29

Table B.7.9 Opinion of the general surgery departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the general surgery departments' heads regarding the severity of the problems they are facing, Libya 2012.

Problems	Tripoli Medical Center Mean score
Human resources	3.3
Technical equipment	2.6
Budget allocation	1.0
Number of offices, administration/ personnel staff/ premises	2.9
Drugs and other consumable supplies	2.8
Number of health hospitals	29

Table B.7.10 Number of utilization of OB/GYN services and staff availability in the pre-and post-conflict phase

Number of utilization of OB/GYN services in the hospitals, Libya 2012

	No. of beds	Staff (total number of all staff in all areas of OB/GYN)						Outpatient visits		No. of major procedures		Admissions		Number of hospitals
		Professional		Other staff		Total								
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	193	17	2	1	155	18	157	0	0	0	0	0	0	29

Table B.7.11 Number of utilization of OB/GYN units related services availability in the pre-and post-conflict phase

Number of utilization of OB/GYN services and units related services in the hospitals, Libya 2012

	Staff (total number of all staff)		Outpatient visits		No. of Pts. served		No. of major operations/ procedures		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	0	0	0	0	0	0	0	0	29

Table B.7.12 Percentage of OB/Gyn services per professional (Consultants & Specialists) staff in the pre-and post-conflict phase

Percentage of OB/GYN services per professional staff in the hospitals, Libya 2012

	Outpatient visits		No. of major procedures		Admissions		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	0	0	0	0	0	0	29

Table B.7.13 Availability and functionality of basic obstetrics and gynaecology departments equipments in hospitals

Number of hospitals that have departmental basic obstetrics and gynaecology departments equipments and functioning according to type of equipment, Libya 2012

	Tripoli Medical Center
Examination light (flashlight ok)	
Available	0
Functioning	0
Delivery pack	
Available	0
Functioning	0
Cord clamp	
Available	0
Functioning	0
Episiotomy scissors	
Available	0
Functioning	0
Scissors or blade to cut cord	
Available	0
Functioning	0
Suture material with needle	
Available	0
Functioning	0
Needle holders and tissue forceps	
Available	0
Functioning	0
Suction apparatus (mucus extractor)	
Available	0
Functioning	0
Manual vacuum extractor	
Available	0
Functioning	0
Vacuum aspirator or D&C kit	
Available	1
Functioning	1
Neonatal bag and mask	
Available	1
Functioning	1
Incu-bator	
Available	1
Functioning	1
Cardioto-cography (CTG)	
Available	1
Functioning	NA
Blank partograph	
Available	1
Functioning	NA
Delivery bed	
Available	1
Functioning	NA
No. of hospitals	29

Table B.7.14 Opinion of the OB/GYN departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the OB/GYN departments' heads regarding the severity of the problems they are facing, Libya 2012.

	Tripoli Medical Center
Problems	Mean score
Human resources	1.0
Technical equipment's	1.0
Budget allocation	1.0
Number of offices, administration/ personnel staff/ premises	1.0
Drugs and other consumable supplies.	1.0
Number of health hospitals	29

Table B.7.15 Number of utilization of paediatric services and staff availability in the pre-and post-conflict phase

Number of utilization of pediatric services in the hospitals, Libya 2012

		Staff (total number of all staff in all areas of ped)						Outpatient visits		No. of major procedures		Admissions		Number of hospitals
		Professional		Other staff		Total								
	No. of beds	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	268	196	220	18	18	214	238	2436	2984	0	0	1357	693	29

Table B.7.16 Percentage of paediatric services per professional staff in the pre-and post-conflict phase

Percentage of pediatric services per professional staff in the hospitals, Libya 2012

	Outpatient visits		No. of major procedures		Admissions		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	12.43	13.56	0	0	6.92	3.15	29

Table B.7.17 Availability and functionality of basic pediatric department services in hospitals

Number of hospitals that have departmental basic pediatric departments services and functioning according to type of equipment, Libya 2012

	Tripoli Medical Center
Child weighing scale	
Available	6
Functioning	5
Infant weighing scale	
Available	6
Functioning	5
Thermometer, stethoscope, Growth charts	
Available	6
Functioning	6
Neonatal monitor Transport incubator	
Available	3
Functioning	4
Incubator and phototherapy lamp Neonatal ventilator	
Available	1
Functioning	NA
Continuous positive Airway pressure (CPAP)	
Available	0
Functioning	NA
Suction Machine	
Available	4
Functioning	NA
Nebulizer	
Available	5
Functioning	NA
No. of hospitals	29

Table B.7.18 Opinion of the pediatric departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the pediatric departments' heads regarding the severity of the problems they are facing, Libya 2012.

	Tripoli Medical Center
Problems	Mean score
Human resources	2.7
Technical equipment's	3.0
The annual operating budget	4.0
Budget and budget allocation	3.8
Number of offices, administration/ personnel staff/ premises	3.8
Drugs and other consumable supplies.	2.7
Number of health hospitals	29

Table B.7.19 Number of utilization of operating theatre services and staff availability in the pre-and post-conflict phase

Number of utilization of operating theatre services in the hospitals, Libya 2012

	No. of rooms	Staff (total number of all staff in all areas of operating theatre)		No of Elective surgery		No of Emergency surgery		Number of hospitals
		Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	16	40	40	0	0	0	0	29

Table B.7.20 Number of utilization of anaesthesia services and staff availability in the pre-and post-conflict phase

Number of utilization of anaesthesia services in the hospitals, Libya 2012

	Staff (total number of all staff in all areas of anaesthesia)		No. of pain control and analgesia clinic		No. of inpatients served		No. of procedures		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	112	111	0	0	0	0	0	9	29

Table B.7.21 Opinion of the operating theatre and anaesthesia departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the operating theatre and anaesthesia departments' heads regarding the severity of the problems they are facing, Libya 2012.

	Tripoli Medical Center
Problems	Mean score
Human resources	NA
Technical equipment	0
Budget allocation	4
Number of offices, administration/ personnel staff/premises	3
Drugs and other consumable supplies	4
Number of health hospitals	29

Table B.7.22 Number of utilization radiology services and availability of staff in the pre-and post-conflict phase

Number of utilization and availability of radiology services in the hospitals, Libya 2012

	Staff (total number of all staff in all areas of radio)		Outpatient		Inpatient		Number of functioning equipment		Number of hospitals in which radiology services are available		Number of served patients		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	45	43	109	810	48	82	124	1164	1	1	923	600	29

Table B.7.23 Utilization and Availability of functioning radiation oncology services in hospitals

Number of hospitals that have functioning radiation oncology services operating according to type of services, Libya 2012

	Cobalt-60			Linear accelerator			Brachy therapy			
	Available	Func-tioning	No. of served patient	Available	Func-tioning	No. of served patient	Available	Func-tioning	No. of served patient	Number of hospitals
Tripoli Medical Center	1	1	900	1	1	110	1	0	NA	29

Table B.7.24 Number of utilization and availability of lab services in the pre-and post-conflict phase

Number of utilization and availability of lab services in the hospitals, Libya 2012

	Staff (total number of all staff in all areas of lab)		Inpatients		Outpatient		Number of functioning equipment		Number of hospitals in which lab services are available		Number of served patients		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	85	68	21	108	0	0	0	752	17	17	389	1460	29

Table B.7.24a Number of hospitals in which lab services are available

Number of hospitals in which lab services are available in the hospitals, Libya 2012

	Tripoli Medical Center
Biochemistry	
Pre conflict	0
Post conflict	0
Haematology	
Pre conflict	0
Post conflict	1
Immunology (serology)	
Pre conflict	0
Post conflict	0
Microbiology	
Pre conflict	0
Post conflict	0
Parasitology	
Pre conflict	0
Post conflict	0
Pathology	
Pre conflict	0
Post conflict	0
Hormones	
Pre conflict	0
Post conflict	0
Blood bank services	
Pre conflict	0
Post conflict	0
No. of hospitals	29

Table B.7.25 Availability and functionality of laboratory basic departmental services in hospitals

Number of hospitals that have departmental laboratory basic departments equipments services and functioning according to type of equipment, Libya 2012

	Tripoli Medical Center
Automated hematology system	
Available	1
Functioning	1
Automated biochemistry system	
Available	1
Functioning	1
Automated immunology system	
Available	1
Functioning	1
Fully automated ELISA system	
Available	1
Functioning	1
Automated diagnostic microbiology system	
Available	1
Functioning	NA
Spectrophotometer	
Available	0
Functioning	NA
Centrifuge	
Available	1
Functioning	NA
Microscope	
Available	0
Functioning	NA
No. of hospitals	29

Table B.7.26 Number of intensive care services and staff availability in the pre-and post-conflict phase

Number of intensive care services in the hospitals, Libya 2012

	Staff (total number of all staff in all areas of ICU)		Outpatient visits		Inpatient		Total No. of patients served		Number of functioning equipment		Number of hospitals
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	
Tripoli Medical Center	270	195	464	2751	182	50	646	2801	3	122	29

Table B.7.27 Opinion of the radiology, laboratory, matron departments' heads regarding the severity of the problems they are facing

Mean score the opinion of the radiology, laboratory, matron departments' heads regarding the severity of the problems they are facing, Libya 2012.

	Tripoli Medical Center
Problems	Mean score
Human resources	2
Technical equipment	3
Budget allocation	NA
Number of offices, administration/ personnel staff/premises	NA
Drugs and other consumable supplies	9
Number of health hospitals	29

Table B.7.28 Number of dentist services and staff availability in the pre-and post-conflict phases

Number of dentist services in the hospitals, Libya 2012

	No. of Dental units	Staff (total number of all staff in all areas of dentistry)		Number of patients served		Number of hospitals
		Pre	Post	Pre	Post	
Tripoli Medical Center	23	36	37	572	1004	29

8. Effect of Conflict

Table B.8.1 Effect of conflict on Basic on Central Sterilization Unit (CSU) and ambulance service departments

Number of and percentage hospitals that were moderately damage and severely damage in CUS and ambulance service department, Libya 2012.

	Central SterilizationUnit (CSU)				Ambulance service department				
	Moderately damage		Severely damage		Moderately damage		Severely damage		Number of health hospitals
	No.	%	No.	%	No.	%	No.	%	
Tripoli Medical Center	0	0	0	0	0	0	0	0	29

Table B.8.2 Hospitals that faced severe problems

Number and percentage of hospitals that faced specific severe problems related to human resources, Technical equipment, Adequacy of the allocated budget, Support from management or higher authorities, Drugs and other consumable supplies according to the degree of the problem as reported by hospital director, Libya 2012.

	Human resource problem		Technical equipment		Adequacy of the allocated budget		Support from authorities		Drugs and supplies		Number of health hospitals
	No.	%	No.	%	No.	%	No.	%	No.	%	
Tripoli Medical Center	0	0	0	0	0	0	0	0	0	0	29

Annex C Questionnair

Hospitals Assessment in Post Conflict Situation

Libya

April 2012

Ministry of Health

Information & Documentation Center

In collaboration with

Division of Health Systems & Services

Eastern Mediterranean Regional Office

World Health Organization

World Health Organization

TABLE OF CONTENTS

Health Inventory

		1	2	3	
001	Date (Day:Month)				DAY MONTH YEAR 1 2 INTERVIEWER No
002	Interviewer Name	…… …… ……	…… …… ……	…… …… ……	

FACILITY IDENTIFICATION		
003	Facility number	Region code / Code of facility type / Facility serial number
004	Name of facility	……
005	Region/Province	……
006	District	……
007	Location of facility	……
008	Catchment population (000)	
009	Type of facility	University tertiary hospital…… 1 Teaching tertiary/ moh hospital…… 2 Secondary hospital..... 3 Rural hospital…….... 4 Other (specify) …… 5 …… 9
010	Year of establishment (Day, Month, Year)	
011	Number of Beds	
012	Is the hospital now	Renovated: Yes ……1 / No ……2 Under renovation contract: Yes ……1 / No ……2
013	Managing Authority (Ownership)	Government/public …… 1 Ngo/non profit …… 2 Private-for-profit …… 3 Mission/faith-based …… 4 Other (specify)…… 9 ……
	GEOGRAPHIC COORDINATES	
014	Waypoint name (Facility number)	
015	Latitude	N/S…… a N DEGREES/DEC b c
016	Longitude	E/W…… a E DEGREES/DEC b c

100 MANAGERIAL AND ADMINISTRATIVE PROCESS

	Is there clear written documents regarding the following subjects:	Yes	No	NA	DK	Remarks (if needed)
101	Mission	1	2	3	8	
102	Vision	1	2	3	8	
103	Job description or TOR of the medical director	1	2	3	8	
104	Job description of TOR administrative director	1	2	3	8	
105	Job description or TOR for clinical head department					
106	Job descriptions for employees					
107	Organizational structure	1	2	3	8	
108	Is there a Management Board in the hospital	1	2	3	8	**If Yes, mention them**: 1. 2. 3. 4. — **How many times does the board meet in the year:**
109	Is there a community represented in the board	1	2	3	8	
110	Updating the Hospitals Master Plan taking into your account	1	2	3	8	
111	Does the hospital provide the health care people need	1	2	3	8	
112	Is there any barrier to the accessibility of services for people; culturally, programme and services are developed to address them	1	2	3	8	

	Are the following Hospital offices/ bodies/teams functioning and active?	Yes	No	If yes, is it functioning?	Remarks (if needed)
113	Trauma Team	1	2	3	
114	Cardiac arrest team	1	2	3	
115	Nutritional Committee	1	2	3	
116	Ethical Committee	1	2	3	
117	Research Committee	1	2	3	
118	Cancer Team	1	2	3	
119	Quality management	1	2	3	
120	Infection control	1	2	3	
121	Patient safety				
122	Mortality and morbidity committee	1	2	3	
123	IT infrastructures (Network)	1	2	3	
124	Rehabilitation center	1	2	3	

NA ≡Not Applicable, DK≡ Don't Know

150 PHARMACY AND DRUGS SUPPLY

	Specifications and Items	Pre-conflict		Post-conflict		Remarks (if needed)
		Yes	No	Yes	No	
151	Is there a pharmacy department	1	2	1	2	
152	How many pharmacy outlet serving in the hospital					
153	Does the pharmacy have the budget to purchase drugs from local market	1	2	1	2	
154	Has pharmacy been frequently facing shortage of drugs/supply	1	2	1	2	

	For the following questions, please specify the number:	Pre - conflict	Post-conflict	Remarks (if needed)
155	What is the total number of professional staff (pharmacists) and assistant pharma/ technician	☐☐☐☐	☐☐☐☐	
156	What is the total number of Pharmacists	☐☐☐☐	☐☐☐☐	
157	What is the total number of assistant pharmacists	☐☐☐☐	☐☐☐☐	
158	What is the total number of other technical staff (nurses& tech.)	☐☐☐☐	☐☐☐☐	
159	How often supplies received (please indicate frequency in months)	☐☐	☐☐	

180 THE BUDGET

	Item/ Category	Yes	No	NA	DK	Remarks (if needed)
181	Is there a known budget for the hospital	1	2	3	8	
182	If yes, please specify how much is the annual (recurrent) budget in Million Dinars					
183	Is it usual to receive the full budget and in the due time	1	2	3	8	
	From the hospital budget, please state portion spent on the following as %					
184	Human Resources					
185	Medicine and Lab. Technology					
186	Patient support (Food)					
187	Administrative support services					
188	Maintenance and repair					
189	Training and education					
	Does the allocation of budget between hospital components/facilities based on:	**Yes**	**No**	**NA**	**DK**	
190	Actual volume of work and priorities	1	2	3	8	
191	The costs in previous years	1	2	3	8	
192	Planned activities	1	2	3	8	
193	No specific criteria	1	2	3	8	

200 OUTSOURCING OF SERVICES

	Item/ Category	Yes	No	Remarks (if needed)
201	Does the hospital financing outsource non clinical services; e.g. cleaning, food, guest, …etc (please comment)	1	2	
202	Does the hospital outsource clinical services (i.e., Lab., X-ray, operations for patients or non clinical personnel or purchase supplies)	1	2	
203	Others (i.e., patient transport, ...)	1	2	
204	Others; specify (in the remarks space)	1	2	

220 HOSPITAL AS TEACHING / TRAINING AND SERVICE INSTITUTE

	Are the following training / infrastructures and facilities existing and functioning:	Yes	No	NA	Remarks (if needed)
221	Is the number of training rooms, lectures theatre and spaces for learning is adequate?	1	2	3	
222	The available audiovisual equipment and teaching resources is adequate?	1	2	3	
223	Library	1	2	3	
224	Access for E-Learning and other media facilities	1	2	3	
225	Any formal/ informal and in-service training courses regularly offered	1	2	3	
226	Is there a coordinator or committee to organize training in the hospital	1	2	3	
227	Is there a special budget for training in the hospital	1	2	3	
	Are there training activities offered to the following categories:	**Yes**	**No**	**NA**	
228	○ Specialist Doctors	1	2	3	
229	○ Generalist Doctors	1	2	3	
230	○ House officers Doctors	1	2	3	
231	○ Undergraduates Medical	1	2	3	
232	○ Nurses and Technicians	1	2	3	
233	○ Others (specify)	1	2	3	
234	Is there a continued medical education program in the hospital for doctors, nurses or others (please specify)	1	2	3	
	Does the hospital have residential facilities for:	**Yes**	**No**	**NA**	
235	○ Doctors	1	2	3	
236	○ Nurses	1	2	3	
237	○ Staff on call	1	2	3	
238	○ Others (specify)	1	2	3	

250 EFFECT OF CONFLICT ON BASIC AND COMMON INFRASTRUCTURES FACILITIES

	Category	Post conflict damage to Hospital facilities, buildings and supplies				
		Not affected	Mildly	moderately	Severely	REMARKS
251	Buildings	1	2	3	4	
252	Communication facilities including land and cell phones, bleeps/ pagers, computers, media	1	2	3	4	
253	Ambulance services department	1	2	3	4	
254	Domestic nurses and social welfare service	1	2	3	4	
255	Maintenance workshop,	1	2	3	4	
256	Central sterilization Department	1	2	3	4	
257	Main laundry	1	2	3	4	
258	Restaurant and catering facilities	1	2	3	4	
259	Lot park area and space	1	2	3	4	
260	Mortuary	1	2	3	4	
261	Incinerator	1	2	3	4	
262	Emergency power supply	1	2	3	4	
263	Expatriates (human resources)	1	2	3	4	

THIS PART TO BE ANSWERED BY THE CHIEF OF ADMINISTRATION BOARD – OR HOSPITAL DIRECTOR

	Could you choose a number out of a scale of five to indicate in your opinion the scale of severity of the problem which you are currently facing considering the following categories. (five very severe problem and one mild problem)					
	Category					
280	Human resources	1	2	3	4	5
281	Technical equipment	1	2	3	4	5
282	Adequacy of the allocated budget	1	2	3	4	5
283	Support you receive from management or higher authorities	1	2	3	4	5
284	Drugs and other consumable supplies	1	2	3	4	5

Hospitals Specialist Services

Indicate the total number of beds, healthcare providers, Outpatient Visits, admissions, and number of procedures, according to the hospital organization (by department or specialized services).

***Pre = Pre-conflict (as December 2010), while **Post = Post-conflict (as December 2011)**

300 INTERNAL MEDICINE:	**Total number of beds:** ☐☐☐☐

	Department or service	No. of beds	Staff										Output Indicator				
			Consultant		Specialists		Generalists		Nurses		Technical		Outpatient Visits		No. of major procedures		
			*Pre	**Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Specific Indicator	Pre	Post
301	General medicine																
302	Gastroenterology														Endoscopies		
303	Cardiology														Echo/Catheter		
304	Pulmonology														Bronchosc/PFT		
305	Neurology														CT/MRI		
306	Endocrinology and diabetes														No. of admitted patients		
307	Hematology														Bone marrow		
308	Nephrology														Renal Biospy		
309	Rheumatology														RF/ Genetics		
310	Acute medical care														CCU admission		
311	Infectious department														No. of admissions		
312	Psychiatric services														EEG		
313	Dermatology														Laser		
314	Genetic testing and counseling														No. of patients		

	Medical Units related services	Staff						Output Indicator		
		Specialists		Generalists		Nurses/ Technicals		Outpatient Visits		Remarks
		*Pre	**Post	Pre	Post	Pre	Post	Pre	Post	
320	Renal dialysis									
321	Cardiac catheter laboratories									
322	Endoscopic suites & services									
323	Pulmonary Lab.									
324	High independent unit									
325	Immunology and allergy									
326	Neurological special tests(nerve conducting….etc									

	DEPARTMENTAL BASIC EQIPMENT /APPLIANCES						
	I would like to know if the following basic equipment items are available in this service area today. For each equipment or item, please tell me if it is available today and functioning. **ASK TO SEE THE ITEMS.**	**A) available**			**B) functioning**		
		Observed	**Reported not seen**	**Not available**	**Yes**	**No**	**Don't know**
330	Measuring tape-height board/stadiometre	1 → b	2 → b	3 → 331	1	2	8
331	Peak flow meters	1 → b	2 → b	3 → 332	1	2	8
332	Spacers for inhalers	1 → b	2 → b	3 → 333	1	2	8
333	Adult weighing scale	1 → b	2 → b	3 → 334	1	2	8
334	Stethoscope ,thermometer and Blood pressure apparatus (may be digital or manual sphygmomanometer with stethoscope)	1 → b	2 → b	3 → 350	1	2	8

	THIS PART TO BE ANSWERED BY THE HEAD OF INTERNAL MEDICINE DEPARTMENT					
	Could you choose a number out of a scale of five to indicate in your opinion the scale of severity of the problem which you are currently facing considering the following categories. (five very severe problem and one mild problem)					
	Category	**1**	**2**	**3**	**4**	**5**
350	Human resources					
351	Technical equipment					
352	Budget allocation					
353	Number of offices, administration/personnel staff/ premises					
354	Drugs and other consumable supplies					

400 GENERAL SURGERY AND SUBSPECIALTIES

Total number of beds: ☐☐☐☐

	Department or service	No. of beds	Staff								*No. of operation sessions		Output Indicator			
			Consultants		Specialists		Generalists		Nurses/ Tech				No. of Admissions		Outpatient Visits	
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
401	General Surgery	☐☐☐														
402	Gastroenterology	☐☐☐														
403	Cardiac surgery	☐☐☐														
404	Chest surgery	☐☐☐														
405	Neurosurgery	☐☐☐														
406	Endocrine surgery	☐☐☐														
407	Vascular surgery	☐☐☐														
408	Urology	☐☐☐														
409	Plastic and reconstructive	☐☐☐														
410	Fasciomaxillary	☐☐☐														
411	Orthopedic	☐☐☐														
412	Pediatrics	☐☐☐														
413	Ophthalmology	☐☐☐														
414	Otorhinolaryngology	☐☐☐														
415	Oncology surgery	☐☐☐														
416	Transplant	☐☐☐														
417	Day case surgery	☐☐☐														
418	Others	☐☐☐														

***No. of operations require general anesthesia**

	DEPARTMENTAL BASIC EQIPMENT						
	I would like to know if the following equipment items are available in this service area today. For each equipment or item, please tell me if it is available today and functioning. **ASK TO SEE THE ITEMS.**	**A) AVAILABLE**			**B) FUNCTIONING**		
		Observed	**Reported Not seen**	**Not available**	**Yes**	**No**	**Don't know**
430	Self-inflating bag and mask- adult and pediatrics	1 → b	2 → b	3 → 431	1	2	8
431	Needle holders, stitches and clips removal sets	1 → b	2 → b	3 → 432	1	2	8
432	Scalpels, handle with blades	1 → b	2 → b	3 → 433	1	2	8
433	Skin, soft tissue and lang. Retractor	1 → b	2 → b	3 → 434	1	2	8
434	Different Surgical and tissue scissors	1 → b	2 → b	3 → 435	1	2	8
435	Urinary catheters, Nasogastric tube (10-16G) and chest tubes	1 → b	2 → b	3 → 436	1	2	8
436	Complete rectal tray, Tourniquet	1 → b	2 → b	3 → 437	1	2	8
437	Suction apparatus (manual or electric sucker)	1 → b	2 → b	3 → 438	1	2	8
438	Full set of central venous lines, sungstaken tubes	1 → b	2 → b	3 → 439	1	2	8
439	Oropharyngeal airway- adult, tracheostomy set	1 → b	2 → b	3 → 440	1	2	8
440	Endotracheal tube- cuffed sizes 5.5 to 9.0	1 → b	2 → b	3 → 441	1	2	8
441	Laryngoscope handle and blade- adult	1 → b	2 → b	3 → 442	1	2	8

	Please tell me if any of the following materials or medicines are available in this service site today. I would like to see those that are available. **CHECK TO SEE IF AT LEAST ONE IS VALID (NOT EXPIRED)**	**OBSERVED AVAILABLE**		**NOT OBSERVED**		
		At least one valid	Available non valid	Reported available but not seen	Not available today	Never available
442	Different types and sizes of absorbable and non-absorbable suture materials	1	2	3	4	5
443	Skin disinfectant fluids and antiseptic sol.	1	2	3	4	5

THIS PART TO BE ANSWERED BY THE HEAD OF SURGERY DEPARTMENTS						
	Could you choose a number out of a scale of five to indicate in your opinion the scale of severity of the problem which you are currently facing considering the following categories. (five very severe problem and one mild problem)					
	Category					
450	Human resources	1	2	3	4	5
451	Technical equipment	1	2	3	4	5
452	Budget allocation	1	2	3	4	5
453	Number of offices, administration/personnel staff/ premises	1	2	3	4	5
454	Drugs and other consumable supplies	1	2	3	4	5

500 OBSTETRICS AND GYNECOLOGY

Total no. of beds: ☐☐☐☐ **No. of deliveries:** ☐☐☐☐

	Department or service	Number of beds	Staff								Output Indicator					
			Consultants		Specialists		Nurses		Midwives		Outpatient Visits		Admissions		No. of operations/ procedures	
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
501	General Gynecology	☐☐☐														
502	Oncological Gynecology	☐☐☐														
503	General Obstetrics	☐☐☐														
504	Antenatal care package	☐☐☐														
505	Post partum services	☐☐☐														
506	Newborn Care Package	☐☐☐														
507	Infertility unit	☐☐☐														
508	Family planning service	☐☐☐														
509	Others	☐☐☐														

	Units related services	Staff						Output Indicator					
		Specialists		Generalists		Nurses/ Technicals		Outpatient Visits		No. of Pts. served		No. of major operations/ procedures	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
520	In-vitro Unit												
521	Immunization programme												
522	Health education & Nutrition												
523	Clean Gynae. Surgery												
524	Hormonal services /Labs												
525	Fetal and maternal monitor												
526	Others												

	DEPARTMENTL A BASIC EQIPMENT						
	I would like to know if the following basic equipment items are available in this service area today. For each equipment or item, please tell me if it is available today and functioning. **ASK TO SEE THE ITEMS.**	**A) AVAILABLE**			**B) FUNCTIONING**		
		Observed	Reported Not seen	Not available	Yes	No	Don't know
530	Examination light (flashlight ok)	1 → b	2 → b	3 → 531	1	2	8
531	Delivery pack	1 → 532	2 → 532	3 → 532			
532	Cord clamp	1 → 533	2 → 533	3 → 533			
533	Episiotomy scissors	1 → 534	2 → 534	3 → 534			
534	Scissors or blade to cut cord	1 → 535	2 → 535	3 → 535			
535	Suture material with needle	1 → 536	2 → 536	3 → 536			
536	Needle holders and tissue forceps	1 → 537	2 → 537	3 → 537			
537	Suction apparatus (mucus extractor)	1 → b	2 → b	3 → 538	1	2	8
538	Manual vacuum extractor	1 → b	2 → b	3 → 539	1	2	8
539	Vacuum aspirator or D&C kit	1 → b	2 → b	3 → 540	1	2	8
540	Neonatal bag and mask	1 → b	2 → b	3 → 541	1	2	8
541	Incubator	1 → b	2 → b	3 → 542	1	2	8
542	Cardiotocography (CTG)	1 → 543	2 → 543	3 → 543			
543	Blank partograph	1 → 544	2 → 544	3 → 544			
544	Delivery bed	1 → 550	2 → 550	3 → 550			

THIS PART TO BE ANSWERED BY THE HEAD OF OBSTETRICS AND GYNECOLOGY DEPARTMENT						
	Could you choose a number out of a scale of five to indicate in your opinion the scale of severity of the problem which you are currently facing considering the following categories. (five very severe problem and one mild problem)					
	Category					
550	Human resources	1	2	3	4	5
551	Technical equipment	1	2	3	4	5
552	Budget allocation	1	2	3	4	5
553	Number of offices, administration/personnel staff/ premises	1	2	3	4	5
554	Drugs and other consumable supplies	1	2	3	4	5

600 PEDIATRICS

	Department or service	Number of beds	Staff				Output Indicator					
			Professional		Technical		Outpatient Visits		Admissions		No. of operations/ procedures	
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
601	General pediatric											
602	Acute pediatric services											
603	Infectious											
604	Nephrology & metabolic Disorders											
605	Respiratory											
606	Gastroenterology											
607	Endocrine and diabetes											
608	Oncology and hematology											
609	Neurology											
610	Neonatology											
611	Cardiology											
612	Immunization unit											

DEPARTMENTAL BASIC EQIPMENT

	I would like to know if the following basic equipment items are available in this service area today. For each equipment or item, please tell me if it is available today and functioning. **ASK TO SEE THE ITEMS.**	A) AVAILABLE			B) FUNCTIONING		
		Observed	Reported Not seen	Not available	Yes	No	Don't know
620	Child weighing scale	1 → b	2 → b	3 → 621	1	2	8
621	Infant weighing scale	1 → b	2 → b	3 → 622	1	2	8
622	Thermometer, stethoscope, Growth charts	1 → b	2 → b	3 → 623	1	2	8
623	Neonatal monitor Transport incubator	1 → b	2 → b	3 → 624	1	2	8
624	Incubator and phototherapy lamp Neonatal ventilator	1 → b	2 → b	3 → 625			
625	Continuous positive Airway pressure (CPAP)	1 → b	2 → b	3 → 626			
626	Suction Machine	1 → b	2 → b	3 → 627			
627	Nebulizer	1 → 630	2 → 630	3 → 630			

THIS PART TO BE ANSWERED BY THE HEAD OF PEDIATRICS DEPARTMENT							
	Could you choose a number out of a scale of five to indicate in your opinion the scale of severity of the problem which you are currently facing considering the following categories. (five very severe problem and one mild problem)						
	Category						
630	Human resources	1	2	3	4	5	
631	Technical equipment's	1	2	3	4	5	
632	The annual operating budget	1	2	3	4	5	
633	Budget and budget allocation	1	2	3	4	5	
634	Number of offices, administration/personnel staff/ premises	1	2	3	4	5	
635	Drugs and other consumable supplies.	1	2	3	4	5	

700 OPERATING THEATRE

Operating theatre suite(s), should serve both inpatient and outpatient; general layout, changing rooms, anesethias area, sterilization areas, female and male sections, privacy, scrubbing, area, septic and non-septic, offices. Number of operating rooms, recovery areas, patient waiting suits , number of technical and nursing staff, patient flow and exits …….
Is the operation theatre serving all depts.., including Obs. & Gyn. and emergency.

	Categories	**No. of rooms working**	**Staff**								**No of Elective surg.**		**No of Emergency surg.**	
			Total no of operations		**No of Surgeons operating**		**Nurses**		**Technical**					
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
701	General surgery													
702	Orthopedic													
703	Urology													
704	Vascular													
705	Cardiac													
706	Chest													
707	Pediatrics													
708	Plastic/reconstructive													
709	ENT													
710	Ophthalmology													
711	Transplant (Specify, Kidney)													
712	Neurosrgery													
713	Obstetric & Gynecology													
714	Emergency													

720 ANAESTHESIA

	Categories	Staff								Output Indicator				No. of procedures		
		Consultants		Generalists		Nurses		Technical		No. of pain control and analgesia clinic		No. of inpatients served				
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Specific Indicator
721	General Anaesethia															No of patients
722	Spinal															No of patients
723	Epidural															No of patients
724	Regional and bLock															No of patients
725	Pain management															No of patients
726	Patient controlled analgesia															
727	Local anesthesia															

THIS PART TO BE ANSWERED BY THE HEAD OF THE THEATRE & ANAESETHESIA DEPARTMENT

Could you choose a number out of a scale of five to indicate in your opinion the scale of severity of the problem which you are currently facing considering the following categories. (five very severe problem and one mild problem)

	Category					
750	Human resources	1	2	3	4	5
751	Technical equipment	1	2	3	4	5
752	Budget allocation	1	2	3	4	5
753	Number of offices, administration/personnel staff/ premises	1	2	3	4	5
754	Drugs and other consumable supplies	1	2	3	4	5

COMMON DEPARTMENTS SERVING ALL HOSPITAL:

800 RADIOLOGICAL APPLICATION OF UNIVERSAL AND STANDARD MEASURES FOR PROTECTIONS (IAEA)

	Measure/ standards	Workers		Rooms		Equipment		Patients	
		Yes	No	Yes	No	Yes	No	Yes	No
801	Radiation detection devices								
802	Building construction								
803	Availability of Lead shield Jacket								
804	Space protection								
805	Regular check /inspection								
806	Routine Measuring of radiation								
807	Calibration								

RADIATION ONCOLOGY SERVICE

	Equipment	Available		Functioning		No. of Served patients	
		Yes	No	Yes	No	pre	post
810	Cobalt-60						
811	Linear accelerator						
812	Brachy therapy						

830 LABORATORY APPLICATION OF UNIVERSAL AND STANDARD MEASURES FOR PROTECTIONS

	Measure/standards	Patients		Rooms		Equipment		Workers	
		Yes	No	Yes	No	Yes	No	Yes	No
831	Safety measures								
832	Rationalization of specimen collection and transport								
833	Calibration								
834	Handling of specimens								
824	Lab. waste management								

850 RADIOLOGY AND IMAGING SERVICES

	Service provided	Availability of service				No. of served Patients	
		Pre		Post		Pre	Post
		Yes	No	Yes	No		
851	Conventional Radio						
852	CT- Scan						
853	PET						
854	MRI						
855	US						
856	Isotopes scan						

870 LABORATORY AND BLOOD BANK SERVICES

	Service provided	Availability of service		No. of served Patients	
		pre	post	pre	post
871	Biochemistry				
872	Haematology				
873	Immunology (serology)				
874	Microbiology				
875	Parasitology				
876	Pathology				
877	Hormones				
878	Blood bank services				

880 LABORATORY BASIC DEPARTMENTAL EQUIPMENTS

	I would like to know if the following basic equipment items are available in this service area today. For each equipment or item, please tell me if it is available today and functioning. **ASK TO SEE THE ITEMS.**	A) AVAILABLE			B) FUNCTIONING		
		Observed	Reported Not seen	Not available	Yes	No	Don't know
881	Automated hematology system	1 → b	2 → b	3 → 882	1	2	8
882	Automated biochemistry system	1 → b	2 → b	3 → 883	1	2	8
883	Automated immunology system	1 → b	2 → b	3 → 884	1	2	8
884	Fully automated ELISA system	1 → b	2 → b	3 → 885	1	2	8
885	Automated diagnostic microbiology system	1 → b	2 → b	3 → 886			
886	Spectrophotometer	1 → b	2 → b	3 → 887			
887	Centrifuge	1 → b	2 → b	3 → 888			
888	Microscope	1 → 900	2 → 900	3 → 900			

900 MANPOWER SPECIFICATIONS IN ALL THE COMMON DEPARTMENTS

	Department or service Manpower	Number of Staff								No. of patients served				Total No of equipment /Machines		No. of functioning equipment	
		Consultants		Specialists		Generalist		Technical		Inpatients		Outpatients					
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
901	Radiology																
902	Nuclear medicine																
903	Radiation oncology																
904	Radiation physics																
905	Pathology (all specialties)																
906	Hematology																
907	Microbiology																
908	Biochemist																
909	Immunology																
910	Blood Bank																
911	Physiotherapist																

930 INTENSIVE CARE UNITS SERVICES

	Intensive care service Manpower	Number of Staff								No of patients served				Equipment quantity and functioning		Equipment quality and functioning	
		Consultants		Specialist		Generalists		Nurses		Inpatients		Outpatients					
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
931	Coronary Care CCU																
932	General Pediatric ICU																
933	Neonatal (NICU)																
934	General Medical ICU																
935	General Surgical ICU																
936	Cardiac and vascular surgical ICU																
937	Casualty (A&E) ICU																

THIS PART TO BE ANSWERED BY THE HEAD OF THE RADIOLOGY, LABORATORY, MATRON DEPARTMENT

Could you choose a number out of a scale of five to indicate in your opinion the scale of severity of the problem which you are currently facing considering the following categories. (five very severe problem and one mild problem)

	Category					
940	Human resources	1	2	3	4	5
941	Technical equipment	1	2	3	4	5
942	Budget allocation	1	2	3	4	5
943	Number of offices, administration/personnel staff/ premises	1	2	3	4	5
944	Drugs and other consumable supplies	1	2	3	4	5

950 DENTISTRY

	Service	No. of Dental units	Staff										Number of patients served	
			Consultant		Specialist		Generalists		Nurses		Technician			
			Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
951	Oral Medicine													
952	Oral Surgery													
953	Conservative													
954	Pediatrics													
955	Periodontal													
956	Dental Lab.													
957	Others													