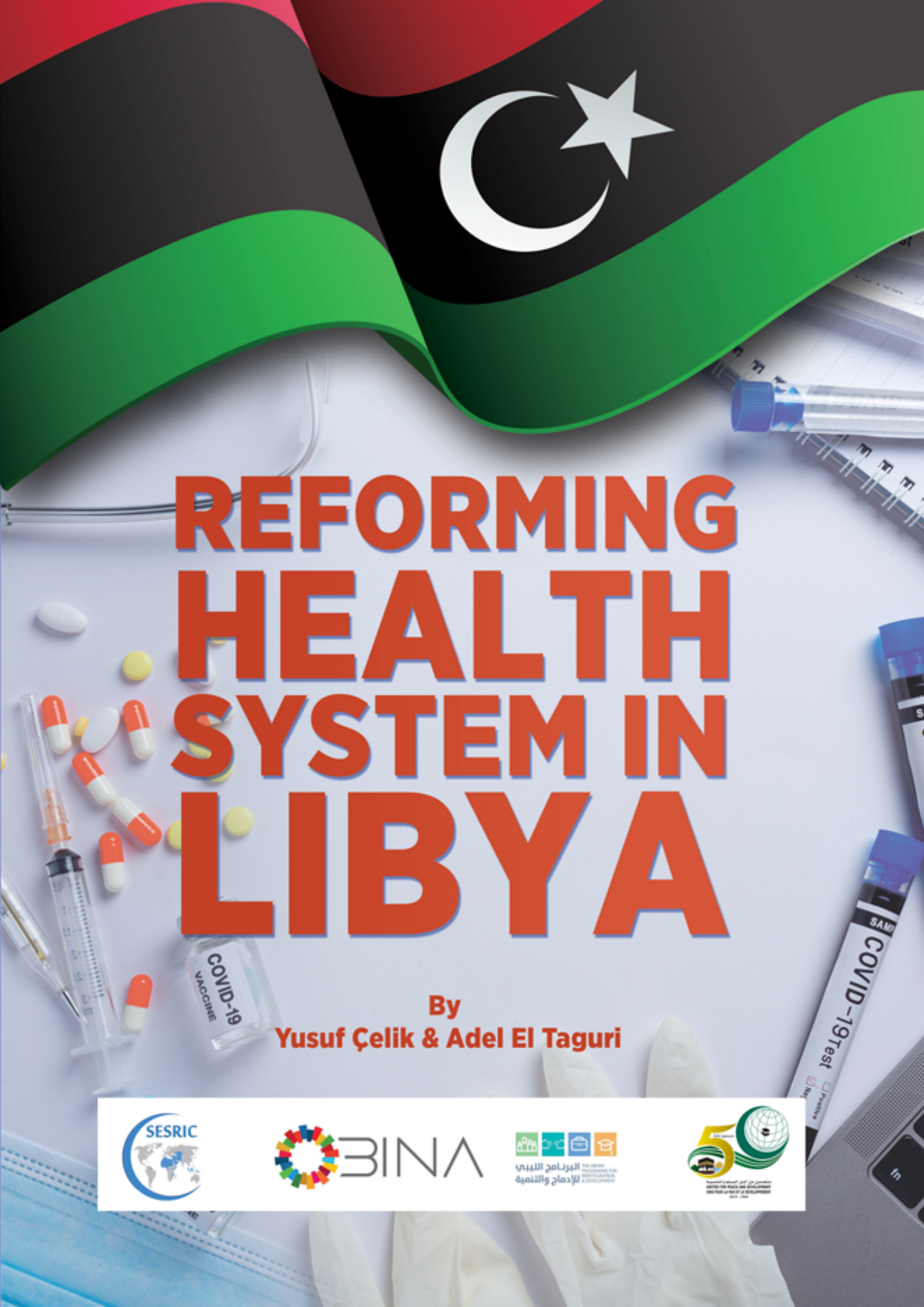

REFORMING HEALTH SYSTEM IN LIBYA

By
Yusuf Çelik & Adel El Taguri

SESRIC
BINA
البرنامج الليبي للإدماج والتنمية

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ABBREVIATIONS AND ACRONYMS

BHRs	Board of Health Regions
CCCs	Community Care Centers
CDUs	Communicable Disease Units
DALYs	Disability Adjusted Life Years
DRGs	Diagnostic Related Groups
EU	European Union
FPCs	Family Physician Centers
FPs	Family Physicians
GPCs	General Practitioner Centers
GPs	General Practitioners
HDI	Human Development Index
HIC	Health Information Centre
HIS	Health Information System
HSE	Health Service Executive
HTP	Health Transformation Program
IMR	Infant Mortality Rate
IT	Information Technology
MENA	Middle East and North Africa
MoF	The Ministry of Finance of Libya
MoH	Ministry of Health of Libya
MSO	Medical Supply Organization
OOP	Out of Pocket
PHC	Primary Health Care
PHCCs	Primary Health Care Centers
PHCs	Primary Health Care Centers
PHCUs	Primary Health Care Units
Ps	Polyclinics
RCEOs	Regional Chief Executive Officers
RHOs	Regional Health Officers
SARA	Service Availability and Readiness Assessment
UHC	Universal Health Coverage
USD	United States Dollar

Acknowledgements

This report is the output of a year-long research project on health system reform in Libya, undertaken as a part of the BINA program. The BINA program is an international development program that aims to help fragile states such as Libya overcome their challenges by rebuilding human and institutional capacity based on professionalism, efficiency, transparency and good governance. The Program is a joint initiative of the Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC), the Libyan Program for Reintegration and Development (LPRD) and the Islamic Development Bank Group (IsDB). SESRIC serves as the executing organ of the Program.

The process for preparing this report has involved many people, who shared their extremely valuable experience and knowledge at every stage of the work to ensure the smooth running of this research project. Without their great collaboration and support, this report would not have been possible to complete.

First, we would like to express our deep appreciation to SESRIC for overseeing and managing the research project on reforming health system in Libya. SESRIC made valuable contributions by being present at all the important milestones of the project and by providing the necessary constructive guidance. We are extremely grateful to the Director General of SESRIC, Mr. Nebil DABUR, for leading this project and providing his guidance. Special thanks to LPRD and its General Manager, Mr. Mustafa El Sagezli, for supporting our work in every step of this research project. We would also like to express our great appreciation to Dr. Kenan Bağcı, Project Coordinator of Reforming Health System in Libya, for his valuable and constructive suggestions during the planning and development of this research work. Dr. Kenan Bağcı, Dr. Cem Tintin and other members of SESRIC always encouraged us by creating a friendly working atmosphere.

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interviews was extremely invaluable to this report, as they shared their vast knowledge and experience with us in an open and sincere manner. The in-depth interviews held with them contributed greatly to mapping the current problems and challenges faced by Libya and formulating alternative solutions to them. We We are also grateful to the Libyan health professionals who participated in our survey and shared their perspectives on the Libyan health system.

We especially thank the peer reviewers Prof. Dr. M. Mahmud Khan and Dr. Mohamed M. B. Elfallah as well as Mr. Mazhar Hussain for their thorough review and comments on the initial draft of the report. We would also like to express our appreciation to Mr. M. Denis Rmouch who exerted great efforts in proof reading and editing the report, thus ensuring its clarity and coherence.

We strongly believe that the Libyan people deserve a better life with higher standards of living, supported by an efficient health system. They deserve to have a health system with universal health coverage that meets their expectations. Prepared with a lot of passion and hard work, we hope that this report will be considered an important guide for policy makers in reforming the health system in Libya.

Prof. Dr. Yusuf Çelik & Dr. Adel El Taguri

Foreword

The Bina program is a State Building Program that was launched to support fragile and conflict affected countries. The program was initiated by The Libyan Program for Reintegration and Development (LPRD), the Islamic Development Bank (IsDB) and the Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC). The main goal of the program was to help Libya and its people overcome the challenges they faces in the endeavor to build a new strong prosperous Libya. The program was initiated after consulting Libyan, Turkish, OIC and international experts and Think Tanks where they all suggested that one of components of the Bina program should be research projects focusing on analyzing the fragility of the state institutions, the challenges that face the rebuilding of the new Libya and put forward a set of solutions for Libyans to implement.

In this context, the research project on reforming public administration in general and the health sector in specific was conceived. It was also decided that the outputs of the research project to be documented in two report: a report on reforming public administration in Libya and a report on reforming the health system in Libya. This project is very crucial for the State Building process in Libya, as Libya and its Public Institutions are in a weak and fragile state. In addition, it was decided that the research is to be conducted by Libyan, Turkish and international experts on public administration reform and health reform to benefit from the Turkish and International experiences as well as to engage Libyan researchers and practitioners who would provide the research team with the local insights and perspectives. Engaging Libyan researchers also had the benefit of building the capacity of the Libyan researchers by engaging with the rest of the international team of experts. This model of forming the research team had its managerial challenges but proved to be rich in expertise and in providing accurate analysis and practical solutions to the Libyan case. The research analyzed in a holistic approach the status of the Libyan public administration.

After almost a year of hard work that included many workshops, interviews with Libyan practitioners, officials and experts; the mission of analyzing and proposing solutions to reforming the public sector in Libya has been successfully accomplished. The main goal of the Bina research project is to help Libyans rebuild their institutions through a clear roadmap and solutions that can be implemented with the will of the people and the decision makers in Libya. The Bina program shall continue in its aim to support Libyans

in their state building endeavor with a firm belief that Libyans will reach their goal in rebuilding a secure, stable, strong and prosperous Libya for all its citizens.

Last but not least, I sincerely thank and congratulate each and every person who participated in accomplishing this valuable research including the partners behind this work, SESRIC, IsDB and LPRD.

Mustafa Elsagezli
General Manager
LPRD

Executive Summary

It is clear that not only reforming the whole sector, but also making some small changes in a specific sector can be a very difficult task in a country like Libya where there is severe internal conflict and unsustainable political environment. These conditions create other important problems such as corruption and lack of trust. When a country is faced with all these negative political and conflict issues, health system reform becomes more challenging as it requires a collaborative effort in learning the different perspectives and expectations of key stakeholders.

Health is perceived as a goal to be achieved, while Health care is seen as a commodity or service to help achieve the desired health objective. Therefore, the starting point for restructuring a health system or initiating and implementing successful health reforms requires a health system analysis. This report seeks to answer three main questions in analyzing Libyan health system: (a) How is the health system structured and organized? (b) How is health system financed? and (c) How is health care provided? The answers of these questions provide an in-depth understanding of the problems and challenges that need to be addressed and allow for the development of more suitable solutions.

The Libyan government provides free health care to all citizens. The Ministry of Health (MoH) is responsible for the delivery of health services. Through a chain of public health facilities, the MoH provides health care services and regulates the growing private health sector. The country is divided into 101 municipalities, each with a functional council and with different directorates responsible for planning, implementation, monitoring and evaluation of the health, education, economic, and other sectors. Since March 2006, there has been a trend towards centralization and synchronization at various levels (WHO-ROEM, 2011; WHO, Ministry of Health of Libya & EU, 2017).

The lack of political stability and volatile socioeconomic conditions and leadership had weakened the planning process in the health sector, and it almost disappeared. The decision-making process was mainly reactionary and more operationally oriented than visionary or strategic planning as it had been before. The weakness of the health system and the dissatisfaction of the population became evident and was reflected in the increase in health tourism to neighboring countries even for relatively benign conditions or non-complex interventions.

In 2016, a national center for health system reform was established to institutionalize health reform activities. International organizations and local institutions worked individually to form many national strategic plans such as maternal and child health,

health information system (HIS), primary health care strategy, etc. However, the planning and evaluation cycle is not complete, as there is generally a lack of political will, and no linkage of these strategies or plans with indicators to assess performance and the typical monitoring and evaluation needed to update these plans.

The health system in Libya is funded by state budget. There is no explicit rule or process for how much money is allocated to the health sector. Usually, the amount of the overall state budget is the main determinant of the Ministry of Health's budget. Then the budget for the health care facilities in the different districts is determined within the Ministry of Health. The salaries of health personnel working in the different health care facilities in different districts are paid centrally from the budget of MoH. Administrative and some other expenditure items of the health care facilities are financed through line-item budget procedure, and health care facility managers have very limited autonomy to spend line-item budget for different purposes rather than predetermined purposes.

Health care facilities do not receive additional funding for their pharmaceutical, infrastructure and construction need. Although municipalities are responsible for coordinating and providing some health care services in their areas, they also do not receive funds and are not able to collect money from local taxes or other revenue sources. The managers of some health care facilities have the authority to employ health care staff. For this reason, there is a criticism that health care facilities are over-employed and that there are no rules for deciding who and how many people should be employed in health care facilities.

Libya spent 3.6% of its GDP on health, and the per capita health expenditure in PPP-adjusted USD was about 958 USD. Over the course of 2010, the majority of health expenditure (69.9%) came from the government while the rest (30%) came from private sector. Total health expenditure is not lower than the average for many developing countries, but its share in GDP can be considered lower than many other countries, and the burden of out-of-pocket payments is higher.

Even though all Libyans have the right to use health services at public facilities free of charge, many people rely on private health care facilities to meet their health needs because public facilities are not adequately staffed and equipped. Many Libyan pay out-of-pocket for services received from the private sector and are not covered against the financial burden of their illnesses.

In Libya, there is a mixed system of public and private health care, rather than a purely state model. Health care is provided through a series of primary health care units,

centers, polyclinics, rehabilitation centers, and general hospitals in urban and rural areas, in addition to a number of specialized tertiary care hospitals. In the absence of a clear and coherent government policy, private clinics generally faced considerable uncertainty and lacked the means to invest in their expansion and development. These clinics were granted operating licenses without clear criteria or inspection policies, which made owners fear that their licenses could be arbitrarily revoked by the authorities. Private sector staffing is based on health care professionals who worked in the public sector and were transferred to the private sector. Services provided by private health care facilities are generally restricted to basic activities such as simple operations, since the lack of health insurance means that the population would have to pay out of pocket for more expensive treatments in the private sector (WHO, MoH of Libya & EU, 2017).

The Service Availability and Readiness Assessment (SARA) in Libya showed that the overall readiness score for the provision of basic services by hospitals was 69%, indicating an average readiness to provide services. The overall score was mainly lowered due to low availability of basic medicines (44%) and fairly limited availability of diagnostic tests (63%). The overall readiness score of 45% for primary health care (PHC) facilities was unacceptably low and indicated that the ability to provide basic health services in these facilities was severely limited. The greatest limitation lay in the availability of basic medicines, with a score of only 16%. The availability of standard precautions and diagnostics was higher, with 49% and 48%, respectively, while the score for basic equipment was 50% (WHO, MoH of Libya & EU, 2017). Notably, the number of hospital beds per 1,000 people is 3.7, which is 1.1 beds more than the WHO standard (2.6 beds per 1,000 people).

Libya has large number of health workers, but they are poorly distributed, which has led to severe human resource shortages in many health facilities. Weak governance due to security concerns and financial constraints have discouraged staff from working effectively. Some of the health workers do not visit the facilities at all and a few visit only once a week. The imbalance in the distribution of health workers in Libya is a recognized as a major problem.
The shortage of medical supplies (disposable medical products and essential pharmaceuticals) and the inadequate medical supply system are considered significant problems in the medical supplies and technology aspect in Libya (Daw, El-Bouzedi, & Dau, 2016). The acute shortage of essential medicines is a common problem that contributes to ineffective health service delivery in Libya (WHO, Libya Ministry of Health & EU, 2017).

Developing more responsive and implementable health reforms requires useful data and better evidence on the root causes of problems and obstacles. Studying health system

performance indicators and comparing them with other comparable countries could provide evidence on the problems and obstacles of a health system. For this reason, two different frameworks developed by WHO (2007) and Roberts et al. (2002) are combined for this report, and they are used to assess the performance indicators of the Libyan health system and study the problems in the main aspects of health system in Libya in order to formulate more adequate reform proposals to strengthen the health system in Libya.

The quality of services in the education and health sectors is often unsatisfactory in Libya. Moreover, neither sector sufficiently meets the needs of the population. Indeed, while overall health indicators are relatively satisfactory, the system has a number of shortcomings, particularly in terms of quality of care, motivation of medical staff, quality of nursing and nurse training, lack of guidelines for diagnosis and treatment of illnesses, weak on-going professional education and training, and the absence of a clear sector strategy based on health indicators to be achieved. One of the clearest indicators of the problems facing the system is the high number of people seeking treatment abroad (EU, 2013).

This report proposes a set of reform proposals and identifies priorities for the Libyan health system. It aims to develop more relevant reform proposals by drawing on international experiences and best practices and by basing the reform proposals on the current problems and obstacles in the Libyan health system. This report also aims to produce beneficial outcomes to be used by Libyan government and officials including all national and local entities, as well as other stakeholders, by providing expert advice and guidance for planning, coordination, implementation and monitoring of health system in Libya.

To achieve these objectives, three different research methodologies were planned and carried out to obtain more relevant evidence and data needed to develop more appropriate health reforms for Libya: (1) reviewing international and national experiences and best practices in other countries, (2) obtaining the views of key informants on the problems and obstacles in the Libyan health system as well as their recommendations for addressing these problems by conducting qualitative research, and (3) quantitative research to obtain the views of health care providers on problems, obstacles, priorities, and level of satisfaction with the current health system.

As the survey of best evidence from successful countries shows, there is no gold standard to consider in reforming health sector in any country, and it seems irrational to copy a system in a country to make another country's health system successful. Libya should

determine its own direction and health system reforms based on its own history, past health system and reform experiences, capacity, demographics and country-specific factors. Health sector reform in Libya can be evolutionary or revolutionary depending on the severity and variability of the country's health and public administration problems. The evidence obtained from different sources in this report indicates that there are many serious health and public administration problems that should be considered in reforming and changing the health system in Libya, and these problems may lead Libya to accept revolutionary reforms.

According to the findings of the qualitative study, the most frequently cited problems or obstacles are related to *"organization and delivery"*, *"health workforce"*, and *"governance and leadership"*. Corruption, lack of leadership/support/governance, and strategic vision are the issues related to governance and leadership of the health system in Libya. Key informants stated that the level of funding allocated to the health sector in Libya was inadequate and needed to be increased. They also pointed out that the way the money was spent was not appropriate to achieve desired outcomes such as efficiency and protection of the poor from out-of-pocket payments. The role of the private sector, the management of hospitals and their level of autonomy, inefficiency, and the role of primary health care facilities were the main problems mentioned by key informants with respect to the organization and delivery of health services.

Issues of motivation and incentives, training of health professionals and quality of training, and mal-distribution of medical professionals were the most frequently stated or repeated issues with health staff in the key informant interviews. Having too many staff in public health facilities, especially administrative staff, was seen as a source of inefficiency and decreased motivation and incentive. Since there is no objective assessment of performance, almost all contracts are renewed every year. The aspect of medical supplies and technology presents very serious problems and obstacles for managers or decision makers in the health sector in Libya. Corruption, irrational decisions and regulations affect whole health system in a very negative way. The health information system is unable to process good quality data and make it available to its users. Another conclusion of this report is that the health system in Libya is poor or very poor in the practice of its expected roles.

To address these issues, government and political leaders should have clear vision and a commitment to change in the health care system, and support for health care reforms. Health care reform activities should be on the agenda of political leaders rather than at the board level. Appropriate health reforms should have the support of key stakeholders in the health system. For health care reform proposals in Libya to be effective and

feasible, appropriate legal changes are needed by regulating all aspects of health care system, increasing transparency in decision making, and enabling stakeholders and nongovernment organizations to participate in shaping health care reforms.

There is agreement on increasing the role of the private sector in health service delivery. But a cautious approach to the private sector is needed. It is important to mention that the government should focus on primary health care, and that the private sector should not be a competitor to the public, but a partner. The level of autonomy of public hospitals and decentralization are issues that have been discussed for 20 years in Libya. There have been tides between centralization and decentralization in the health system. Historical reasons, trust and corruption fuel these discussions. For this reason, there is no clear vision on the degree of decentralization of the health system in Libya or on the areas in which local government should play a greater role.

Evidence from national and international reports and statistics, as well as the findings of qualitative research and the health survey, indicate that Libya should go through a serious process of health care reform. Health reforms in Libya need a clear direction and strategy, and the aspects or buildings blocks of the health system need to be formed around this direction. Such a direction could be defined as the mission and vision of Libya's health system and it guides policy makers and decision makers to develop more appropriate health reforms. In this direction, it is recommended that the financing and delivery of health services be separated and managed by different ministries.

It is believed that the Ministry of Health should play an effective governance and leadership role in service delivery, but it is recommended that health system be reorganized in six health regions of Libya. Introducing family physician centers (FPCs) or general practitioner centers (GPCs), changing the role of existing public health facilities, establishing more autonomous hospitals, purchasing health services from public and private health facilities, strengthening the role of private pharmacies, and introducing a more autonomous and effective Medical Supply Organization (MSO) are other essential and important changes in the recommended health system model for Libya.

The Ministry of Health should play its governance and leadership role by developing sound and appropriate regulations, preparing strategic plans, planning human resource, designing a better and appropriate health information system, etc. Then, regional health authorities should be responsible for implementation, supervision and monitoring, coordination, contracting with private health care providers, collaboration with local health and social service providers such as municipalities and non-governmental and

voluntary organizations, etc. Managers of public hospitals and health care facilities should be selected from among professionals, including all medical care professionals experienced and trained in health and hospital management.

It seems corruption and unsustainable conditions as well as frequently changing ministers of health are main obstacles in front of developing appropriate reforms proposals and successful implementation. Following a participatory approach by involving all relevant stakeholders in shaping reforms proposals, and sharing ideas and opening developed reform proposals to discussion of universities and non-government organizations as well as the media are measures to increase transparency and to gain support for reform proposals.

Evidence from international best practices and the views of think tank participants and key experts indicate that what matters is how money is spent rather than how it is collected. It is recommended that Libya should increase the efficiency of the recently established Public Health Insurance Fund by immediately implementing purchaser-provider cost-sharing. The health insurance fund should be financed from government revenues or general taxes. The advantage of proposing a state-financed health insurance fund is that Libyan citizens are familiar with the state-funded system, and are unlikely to be willing to pay a premium or co-payment to use health services at public facilities. The central health insurance fund can allocate money to regional branches of the health insurance fund based on the needs of health regions. The central health insurance fund must draw up regulations and create general rules for making decisions and concluding contracts with public and private health institutions. The central insurance fund should also play an active role in determining and implementing the reference price system for all medicines and drugs to be reimbursed by the health insurance fund. A small co-payment for services received from public hospitals at the secondary and tertiary care levels could be introduced to reduce unnecessary use and increase efficiency. The health insurance fund should continuously monitor the behaviors of public and private contracted health facilities to use the most appropriate reimbursement method. In the long run, it might be necessary to use the DRG to provide more incentives for hospitals to accept and provide more advanced care for patients with more severe illnesses that require the use of more advanced technologies. The capitation payment system seems more appropriate for family physicians (FPs) or general practitioners (GPs). However, community care centers (CCCs) could be reimbursed through fee-for-service (if they run laboratories and conduct some basic diagnostic tests to support FPs or GPs or through bundled payment for their planned and approved services such as screening, immunization, or health education.

There seems to be a need to forbid dual practice and to require physicians to work in either public or private health facilities. However, increasing incentives, especially salaries for health professionals who prefer to work in the private sector mainly because of the higher salaries, should be the first attempt to encourage physicians to work in public health facilities. Alternatively, in the short run, the most appropriate way is to introduce performance-based payment system that aims to pay health professionals working in public health facilities more depending on the volume and quality of services provided and procedures undertaken. The developing a transparent hospital budgeting system that allows individual workers to see their contribution to overall hospital revenues and to track their expenditures in order to raise cost awareness could be useful in attracting health care professionals to work in public health facilities.

Transparency and accountability in the decision-making process of policy makers at all levels are necessary to create a trust in the recommended model in the long term. However, effective monitoring and auditing of decisions (including financial decisions) regarding expenditures or contracts with public and private health care providers by central and regional health insurance funds should be necessary in the short term. For this purpose, the establishment of an autonomous audit body is recommended. Health insurance funds can be encouraged to contract with public and private health care providers that are accredited or certified for quality, or additional incentives might be created to reward provider quality and safety.

The Libyan health system is inadequate. Public health facilities meet WHO standards in terms of the number of beds per 1,000 people. However, the uneven distribution of beds and health care facilities across districts and in different regions worsens the accessibility and availability of health services. In many regions, hospital beds are almost empty as suggested by the bed occupancy rate. False statistics are reported by the managers of these widely dispersed hospitals because the budget is allocated to hospitals based on the number of beds not on actual performance, bed occupancy and admissions. Many of public health facilities have been damaged and some of their assets have been stolen, and many them lack the equipment needed to provide better health services. The supply management system and procedures for resupplying health facilities need to be improved or replaced with new systems.

Libya needs to find a system to strength coordination between central and local authorities and new regulations and mechanisms to eradicate corruption and the belief in it in all sectors, including health. Past experiences with the central governance system in the health sector and other sectors may indicate that centralizing responsibilities and

managing the health system in a centralized manner has not produced desired outcomes. The best solution for organizing the delivery of health services might be a mix of central and regional organization. Considering the six health regions in Libya, health care providers could be organized in these regions, and the central government and the Ministry of Health could support the regions.

It is recommended that the role of primary health care facilities be redefined. Existing primary health care facilities should be restructured and their roles reorganized, so that there is a clear division of work to provide primary and curative care services to their users by focusing on their newly defined primary roles. The roles of current primary health care facilities should be assumed by FPCs or GPCs, and CCCs. The role of hospitals should be redefined to serve as a recommended referral system among health care providers in Libya. In this respect, hospitals can be classified as local hospitals, regional hospitals, and regional or national research and training hospitals. Each health region should have at least one regional research and training hospital to provide more advanced health services using more advanced and modern technologies and better trained staff.

The supply of necessary drugs and pharmaceuticals is also an important aspect of organizing health service delivery. In the current health system, prescribed drugs and pharmaceuticals are provided by medical supply stores owned or managed by public health facilities. However, many medical stores in public health care facilities lack medicines or do not have a good supply chain. For this reason, the new model recommends that drugs and pharmaceuticals prescribed for outpatients examined in either public or private primary, secondary, or tertiary care facilities be dispensed by private contract pharmacies. However, hospitals or centers providing inpatient services must be required by law to provide all necessary medical supplies and medications from their pharmacies, and patients or any agent are not allowed to obtain necessary medical supplies and medications outside of hospitals or centers.

It is recommended that a referral system be established for public health care providers in health regions. In the recommended model, the first point of contact for health care users will be family physicians or general practitioners. For this reason, their role should be strengthened to refer their patients to the more appropriate centers for more cost-effective services. Family physicians or general practitioners may refer their patients only to public health facilities in their region. But patients may prefer to use private contracted health facilities if they agree to pay a co-payment.

In the recommended health system in Libya, the private health sector should play a greater role in providing health care services as a partner to the public sector rather than

a competitor to meet the expectations of Libyan citizens. The role of private sector could be complementary, and it plays this role by contracting with the public health insurance fund to provide health services to Libyan citizens.

There are no best practices for the health workforce in the Libyan health system. It is clear that Libya has a very fragmented management of the health workforce. The Ministries of Health, Finance and Planning should carry out health workforce functions in a coordinated manner. Motivation and incentives for the health workforce are a major problem. The lack of motivation and incentives drives experienced and qualified professionals out of the country since they can easily find work in developed countries. Working in health facilities under disagreeable conditions, facing crowds and receiving lower salaries are the factors that decrease the motivation of health workers. Besides, there is also no system to monitor the job performance of staff. All these factors decrease the responsibility of managers in recruiting qualified personnel. Most often, health officials are guided by politicians, influential local leaders, tribes or relatives to hire more personnel. For this reason, health workforce functions must be carried out in a scientific and objective manner, both at the central and facility levels. Job analysis and description is needed for better health personnel planning to estimate the number and quality of personnel needed at the facility level.
It is recommended that autonomy in the recruitment of health personnel be removed from the hands of lay managers of public health facilities, and that this responsibility be assumed at the central level. It can be easily implemented at the central level since Libya is a relatively small country in terms of population. However, senior managers in a public hospital can be selected and recruited on a contract basis. The norms and standards of each public health care facility for doctors, nurses and other health care personnel should be determined by considering the results of job analysis studies and scientific job descriptions, as well as the capacities and patient loads of the health care facilities.

There are problems in almost every aspect of medical products and technologies, from registration to reimbursement. There should be new regulations on registration, pricing, procurement, and distribution, which are the main elements of medical supplies and technologies. The establishing of national drug policy, encouraging the prescription and use of generic drugs, developing rational drug use policies, implementing rational pricing systems, ensuring transparency in procurement, and establishing an efficient supply chain are all necessary attempts in Libya. It is recommended that the Medical Supply Organization be a regulatory body rather than one that serves the needs of public health facilities. But the purchasing, storage, and distribution functions should be carried out by private wholesalers, distributers, or pharmacies. Procurement or

tendering for pharmaceuticals and equipment might be done by the management of public hospitals.

Attempts should be made to increase the confidence of Libyan citizens in the health services provided by public and private facilities. Patients should be allowed to choose their health care providers in the public or private sector. An acceptable and affordable co-payment could be introduced if they prefer to use private health care providers or secondary and tertiary providers rather than primary care providers. Legal regulations should regulate patients' rights by introducing appropriate complaint mechanisms within health care facilities or giving the patients the freedom to choose their health care providers. Health care providers could be encouraged to increase patient satisfaction and respond appropriately to patient expectations by providing high quality health services.

This report provides some recommendations for effective implementation. In this regard, it should be noted that successful health care reforms should be sustainable and implementable. It is clear that there are many reports, workshops, and meetings on needed health reforms in Libya. There is consensus among key stakeholders in the health system in terms of the severity and variability of the problems and their causes. There have been previously developed but unimplemented reforms and ongoing reform activities in Libya. But there appears to be a problem in the policy development, political decision, and implementation stages. For this reason, conscious and planned attempts should be made to put health reforms on the agenda of key policy makers and members of the Libyan parliament.

In the long journey of health reform, health reformers or key decision makers seeking to change the health system should follow a concrete agenda that should be created in a participatory manner, and this agenda should be implemented by committed and determined health reform teams for each component. Consistency in supply and demand reforms, increasing benefits of citizens, strong governance and leadership, and support, determination and commitment to reform changes, and rapid implementations are also factors observed in other countries successfully reforming their health systems.

To be successful, the implementation of health reform should start from somewhere. It is recommended to start with changing the current Medical Law in Libya. The findings reveal that many problems, especially in health workforce, are related to the current Medical Law and regulations. This creates conflicts between the practices of health professionals, and decreases motivation. Many inefficiencies and problems in the medical supply and technology aspect such as registration, pricing, licensing, etc. are

also related to the current Medical Law. Besides, the problems in health service delivery and the decline in user satisfaction of health facilities are also related to the current medical legislation. For this reason, key policy and decision makers must be convinced that current health system regulations and medical law should be changed by providing evidence of the root causes arising from inappropriate health regulations. In this process, it is important to prepare and share reports or the results of workshops or meetings, or to try to convince key decision-makers and members of parliament to participate in the reform of health sector activities.

This report has strengths and limitations. The main strength of this report is that it uses different methodologies to obtain more relevant data and evidence on both root causes of health system problems and recommendations for more appropriate and implementable reform proposals. It takes into account: best practices and successful reform experiences in other countries, the views of experienced international health systems experts that have experience with health system reform or reform processes in other countries; the views of national key informants who have experience with previous reform attempts in the Libyan health system or who provide or manage health services; and the general views of health care providers on the level of satisfaction and priorities of the Libyan health system. The study has also some limitations since it is difficult to access the most recent data from all regions of the country due to the ongoing conflict, and the current conflict situation makes difficult to establish a clear vision or direction for the health system in Libya in the future.

1

INTRODUCTION

Reforming health sector is difficult. It is even more difficult in Libya, which is experiencing severe internal conflict and an unsustainable political environment, because internal conflict and the unsustainable political environment create other important problems such as corruption and trust. When a country experiences political uncertainty and internal conflict, health system reform becomes more challenging because policymakers need to understand the diverse perspectives and expectations of key stakeholders and socio-political groups. Lack of political stability and unstable socioeconomic conditions and leadership have weakened the planning process in the health sector, which has almost disappeared. The decision-making process was mainly reactionary and more operationally oriented than visionary or strategic planning as it used to be. The weakness of the health system and the dissatisfaction of the population became evident and was reflected in the increase in health tourism to neighboring countries even for relatively benign conditions or non-complex interventions.

Further complicating the situation, there is hidden competition among key stakeholders in the health system, and their power to influence the reforms that affect their interests and benefits varies. For instance, organized interest groups such as physician associations and hospital owners may not support changes, which are perceived to negatively impact their interest. It would be very difficult to implement proposed reforms unless the support of organized groups is guaranteed. Otherwise, health policy makers and health reformers face very strong resistance to the proposed reforms. On the other hand, patients are the main beneficiaries of health care system, but they are not politically organized as a group and, therefore, have less power to influence the decision-making process and the implementation of reforms.

The Libyan government provides free health care to all citizens. The Ministry of Health (MoH) is responsible for the delivery of health services. Through a chain of public health facilities, the MoH provides health care services and regulates the growing private health sector. Health system in Libya is funded by state budget. There is no explicit rule

or process for how much money is e allocated to the health sector. Usually, the amount of the overall state budget is the main determinant of the Ministry of Health's budget. Then the budget of health care facilities in the different districts is determined within the Ministry of Health. The salaries of health personnel working in the different health care facilities in different districts are paid centrally from the budget of the MoH. Administrative and some other expenditure items of the health care facilities are financed through line-item budget procedure, and health care facility managers have very limited autonomy to spend line-item budget for different purposes rather than predetermined purposes.

Health care facilities do not receive additional funding for their pharmaceutical, infrastructure and construction need. Although municipalities are responsible for coordinating and providing some health care services in their areas, they also do not receive any funds and are not able to collect money from local taxes or other revenue sources. The managers of some health care facilities have the authority to employ health care staff. For this reason, there is a criticism that health care facilities are over-employed and that there is no rule for deciding who and how many people should be employed in health care facilities.

Although all Libyans have the right to use health services at public facilities free of charge, many people turn to private health care facilities to meet their health needs because public facilities are not adequately staffed and equipped. Many Libyan pay out-of-pocket for services received from the private sector and are not covered against the financial burden of their illnesses.

In 2016, a national center for health system reform was established to institutionalize health reform activities. International organizations and local institutions worked individually to form many national strategic plans as maternal and child health, health information system (HIS), primary health care strategy, etc. However, the planning and evaluation cycle is not complete, as there is generally a lack of political will, and no liaison of these strategies or plans with indicators to assess performance and the typical monitoring and evaluation needed to actualize these plans.

This report proposes a set of reform proposals and priorities needed in Libyan health system. It aims to develop relevant reform proposals taking into account international and Libyan experiences, given the specific problems and obstacles currently facing the Libyan health system. This report also aims to better understand the likely inefficiencies of the health system and attempts to propose and discuss specific health care reforms. The weaknesses and shortcomings in the Libyan health system as well as other aspects

of the health system such as accountability, transparency, effectiveness and efficiency have been considered in developing appropriate health reforms. The outcomes of this report can be used to increase the value for money in health system and to meet the expectations of Libyan citizens.

Three different research methodologies were planned and implemented to obtain relevant evidence and data to develop more suitable health reforms strategies for Libya: (1) reviewing international experiences and identifying international best practices internationally, (2) obtaining key informants' views on the problems and obstacles of Libyan health system as well as their recommendations for addressing these problems by conducting qualitative research, and (3) quantitative research to obtain the views of health care providers on the problems, obstacles, priorities, and level of satisfaction with the current health system.

This report is composed of four main sections. The first section aims to analyze the current health system of Libya. As a background, the report provides a brief description and analysis of the current economic, political, and health situation in Libya. The next part is a descriptive presentation of six main aspects of the Libyan health system, namely governance/management, health services delivery, health care financing, health infrastructure and workforce, medical supplies and technology, and the health information system. A framework developed from Kutzin's approach to health system funding and the health system triangle is used to describe the functioning of the health system in Libya.

The second section attempts to diagnose the problems and obstacles, and identifies the likely avenues for improvements in Libya's health system. This section focuses on examining the overall achievements of the health system, comparing intermediate performance indicators the health system in Libya with other selected countries, and carefully analyzing the six main building blocks of the Libyan health system based on previous reports prepared by national and international organizations. The WHO's six building blocks framework is considered as an appropriate framework for gaining insight into how the Libyan health system compares to other relevant health systems and for identifying specific areas or blocks of the system that require improvement.
The third section describes the research methodologies used in this report and summarizes the findings of three different studies conducted to obtain the evidence on the root causes of the problems identified across the six components of Libyan health system. Reviews of health reform experiences in selected developing and developed countries, findings of qualitative research, and the results of the health survey are discussed in this section.

The fourth section is an attempt to identify and develop reform proposals that are more appropriate for each of the constituent elements of Libyan health system, based on the first three sections of the report. This section also summarizes recommendations for successful implementation of the reform proposals. This section develops a roadmap for Libyan officials so that pragmatic steps can be taken to improve the success of the reform initiatives, given the context and dynamics of the health sector in Libya.

This report has both strengths and limitations. The main strength of this report is that it uses different methodologies to obtain more relevant data and evidence on the root causes of health system problems and to derive more appropriate and implementable reform proposals. It considers best practices and successful reform experiences in other countries, the views of experienced international health system experts on their health systems reform or the reform processes in other countries; the views of national key informants with experience of previous reform attempts in Libya and/or involved in health service management and delivery; and the general views of health care providers on the level of satisfaction and priorities of Libyan health system. An identified limitation of this study is the lack of data or difficulty in accessing more recent data from all regions of the country due to the ongoing conflict. The current conflict situation makes it difficult to establish a clear vision or direction for the health system in Libya because of the ongoing uncertainty created by the ongoing conflicts affecting social, political, and economic dynamics.

2

HEALTH SYSTEM OF LIBYA AND THE ANALYTICAL FRAMEWORK

The health system is generally analyzed either by considering the main actors in the system (citizens, providers, third-party payers) or by function (delivery, funding, allocation). The relationship between actors is shaped by their expectations of the health system. Citizens, who are the users of health system are interested in lower payment, easier access, and better quality; providers are interested in lower costs, better financial performance, and better quality; and third parties are interested in lower payment, better coverage, better quality, and greater efficiency. These conflicted expectations and interests affect the functions of raising funds from citizens (funding); allocating funds among providers through the purchase of health services (reimbursement or health purchasing); and providing health services based on citizens' needs. These actors and their functions are observed in every health system, even if they are less organized or weakly developed. But the balance between these actors and functions can be analyzed in terms of effectiveness, efficiency, quality, access, cost, coverage, etc.

2.1 Framework for Analyzing Health System in Libya

Health is seen as an objective to be achieved while Health care as a commodity or service to reach the desired objective of health. For this reason, the starting point of restructuring a health system or initiating and implementing successful Health care reforms is a health system analysis. In a health system analysis, answers to three main questions are important: *(a) How is the health system structured and organized? (b) How is the health system financed? and (c) How is Health care provided?*

To answer the first question, it is necessary to examine current health policies and regulations and the role of the Ministry of Health or other organization responsible for developing these policies and regulations. Both must practice good governance and leadership in organizing and managing the entire health system. Good governance and leadership are necessary to develop sound policies and acceptable practices throughout the country.

The second question needs to examine the sources of revenues for the health system and the way the resources are spent to meet the objectives of the health system. There is no

single, accurate, accepted, effective, efficient, and super health financing system, although some financing mechanisms are relatively better than others. However, judgment about the preferred financing system are usually shaped by the dominant worldview or sometimes by a country's traditions and culture and the history of its health sector. For this reason, the health financing system is a choice rather than a standard system. But shaping this choice is not easy, as many factors such as economic conditions, tax revenues or tax collection, geographic variations, employment, etc. determine the choice.

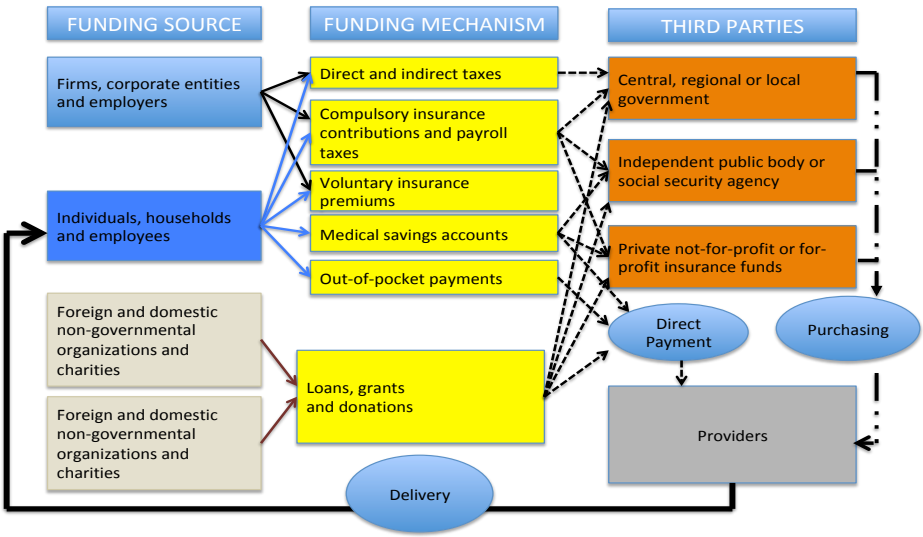
The third question regarding Health care delivery needs to ask two sub-questions: (a) what is the share of the public and private sector? (b) how is it organized at the primary, secondary, and tertiary level? In many countries, the public sector plays an important role in the delivery of health services. However, inefficiency and poor quality of health services are the main factors that lead people to discuss the role of the private sector in providing health services to increase citizen choice or to increase the efficiency and effectiveness of the health sector. Depending on the type of health financing system, the role of the private sector is sometimes desired, but sometimes it leads to disappointing results. If there is a universal health coverage, and if private providers are financed by universal health insurance system and co-payments are set at an acceptable level, then the presence of private providers in the health sector is a desirable decision. But the opposite can lead to catastrophic health expenditures, and disadvantaged citizens may not be able to access better quality and effective health services if public providers are not well equipped. It is also important to mention the research and training roles of health organizations for the future of the health system in a country. In this regard, the existence of an accountable and competitive public provider may be needed to protect the citizens from the profit-maximizing behavior of the private sector.

The second question about the provision of health services provision addresses how Health care is organized across the country. To increase efficiency and improve access, some health services need to be provided within short distance from the residence of clients. Maternal and child care services, immunizations, health education, environment health etc. are the services that should be provided free of charge at primary levels. Curative and rehabilitative care is usually provided at the secondary and tertiary level. An adequate referral system is generally recommended to improve the efficient use of health resources. But changing nature of health services and Health care professionals may require the creation of new institutions or infrastructure to find new ways of providing health care. Home health care, care for the elderly, hospice, palliative care, or telemedicine may cause stakeholders and policymakers to think about and find new mechanisms of service provision. However, the health sector infrastructure, workforce,

and health technologies, as well as the health care utilization patterns and habits of Libyan citizens, will provide the basis for finding appropriate solutions and recommendations.

The framework (Figure 1) is used to describe the current functioning of the health system in Libya. This framework is based on the concept of the health system triangle, and on the framework developed by Kutzin. Although this framework appears to present the financial flows in a health system, it is also very useful to show the relationships between users, providers, and suppliers.

Figure 1. Framework for analyzing health system of Libya



Source: Adapted from Kutzin (2001); Mossialos & Dixon (2002)

The financing mechanism of the health system generally affects the functioning of the health system as a whole. If a health system allows citizens to pay their health care expenses directly to providers without having a third-party payer, this approach might require the establishment of a private sector health supply since the users will be main decision-makers in choosing providers, and they will have more choices about where to go. However, if a health system prefers to have social health insurance system by setting up a centralized or decentralized third-party payer, consumers choose health care providers either from among private or government providers on behalf of its contributors. In this case, that third party agency that determines how the money should be spent must develop many rules or criteria on how health care needs of its beneficiaries will be met at a relatively low cost maintaining a high quality of services.

It is also a fact that having a financing or delivery system does not necessarily guarantee that key stakeholders' expectations of the health system will be met. A country might prefer to have social health insurance and determine main health care providers for the needs of its contributors. Unless it also ensures that the health care needs of its contributors are met with the desired quality and access, users might seek alternative ways to obtain needed health services. In doing so, they may have to pay out of pocket or delay Health care needs. All these alternatives can undermine the performance of the health care system by increasing catastrophic health expenditures or causing more complex health problems for contributors.

2.2 A Brief Information about Libya and Its Health Status

This chapter provides a brief overview of Libya's geography, socio-demographics, economic and political context and health status.

2.2.1 Geography and Socio-Demography

Libya is located in North Africa on the coast of the Mediterranean Sea. Its neighbors are Egypt, Sudan, Chad, Niger, Algeria and Tunisia. In 2019, Libya's population was estimated at 6.8 million (WB, 2020). The population living in urban areas is high at 88%. However, with nearly four people per square kilometer, Libya has one of the lowest population densities in the world, although this low population density is not uniform throughout the country. The northern coastal region is more densely populated, with 85% of the population living on 10% of the land area, while the large, mostly deserted southern region is very sparsely populated (WHO, MoH of Libya & EU, 2017).

Its population growth is about 1.5% per year. Libya has a very young population. Almost one-third of its population is under 14 years old, and 67.5% are between 15 and 64 years old. The elderly population, 65 years or older, constitutes only 4.5% of the total population. Given the age distribution of population, it is reasonable to assume that the burden of chronic disease will not be so high in Libya. Since chronic health problems are increasing rapidly in all regions of the world, it is possible that Libya will have to deal with both chronic and acute diseases, despite its relatively young population. Less than one percent of Libya's population was over the age of 80 in 2019 (WB, 2020).

Table 1. Population in Libya

Variables	2000	2005	2010	2015	2019
Population, total	5,357,891	5,798,614	6,197,663	6,418,315	6,777,452
Population, female (%of total population)	48.1	48.4	48.9	49.4	49.5
Population, male (% of total population)	51.9	51.6	51.1	50.6	50.5
Population growth (annual %)	1.5	1.5	1.0	0.9	1.5
Population ages 0-14 (% of total population)	33.9	30.2	28.8	28.9	28.1
Population ages 15-64 (% of total population)	62.4	65.8	67.1	66.9	67.5
Population ages 65 and above (% of total population)	3.8	4.0	4.2	4.2	4.5
Population ages 80 and above, male (% of male population)	0.4	0.5	0.5	0.6	0.6
Population ages 80 and older, female (% of female population)	0.5	0.6	0.7	0.8	0.9

Source: Health Nutrition and Population Statistics, World Bank, 2020

Table 2 compares Libya's rural population with that of other countries in the region. As the table indicates, the percentage of the rural population (19.6) in Libya was the lowest among the countries and region cited. In general, economic progress reduces the proportion of the population living in rural areas, but in many countries in the Arab World and MENA region, a significant part of the land mass can be considered a desert area, which reduces the proportion of rural population.

Table 2. Rural Population (% of Total Population)

Country Name	2000	2005	2010	2015	2019
Libya	23.6	22.9	21.9	20.7	19.6
Algeria	40.1	36.2	32.5	29.2	26.8
Egypt	57.2	57.0	57.0	57.2	57.3
Tunisia	36.6	34.8	33.3	31.9	..
Turkey	35.3	32.2	29.2	26.4	24.4
Arab World	47.0	45.5	43.6	42.0	40.8
MENA (excluding high income)	44.6	42.7	40.9	39.4	38.1

Source: Health Nutrition and Population Statistics, World Bank, 2020

The literacy rate in Libya is also relatively high compared to the rates in other countries in the region. Table 3 shows the literacy rates.

Table 3. Literacy Rate, Total Adults (% of people aged 15+)

Country Name	2000	2010	2015	2018
Libya	..	..	86.1	..
Algeria	..	..	..	81.4
Egypt,	..	72.0	..	..
Tunisia	-	79.1	-	-
Turkey	..	92.7	95.6	..
Arab World	65.1	70.8	75.1	74.6
MENA (excluding high income)	67.3	74.3	76.6	76.0

Source: Health Nutrition and Population Statistics, World Bank, 2020

The conflict in Libya has caused disruptions in the country's oil production, and has pushed the country into a severe economic crisis given that oil is Libya's main source of revenue. The economic crisis combined with a lack of public confidence in the banking system and the consequent shortage of foreign currency, has led to a major liquidity crisis. Regardless of the continuing major political and security challenges in 2018, oil production has increased, with Libya producing more than one million barrels per day. However, the government is failing to convert the wealth from oil production into welfare for Libyans who have been heavily affected by the crisis (OCHA, 2020).

Libya is considered a middle-income country with its GDP per capita of $15,000 PPP in 2018. Note that prior to the political crisis and domestic violence that started in 2011, Libya had a higher GDP per capita in 2010 compared to its GDP per capita in 2018. However, it seems that the GDP per capita has been trending upward since 2015. Its unemployment rate among its young population is about 50 percent. The vast majority of populations (80%) lives in the country's urban areas, especially in the major cities near along the coast. But these statistics also indicate that 20 percent of population lives in rural and sparsely populated areas (WB, 2020).

Table 4. Economic Indicators of Libya

Variables	2000	2005	2010	2015	2018
GDP per capita, PPP (constant 2017 international $)	16,746	19,883	22,540	11,022	15,018
GNI per capita, Atlas method (current US$)	-	6,860	12,380	5,690	6,800
Labor force participation rate, male (% of male population ages 15+) (modeled ILO estimate)	28.90	31.76	33.64	34.01	34.04
Unemployment, male (% of male labor force) (modeled ILO estimate)	16.34	15.90	15.82	15.54	15.30
Unemployment, youth total (% of total labor force ages 15-24) (modeled ILO estimate)	46.40	47.47	49.09	50.65	49.85
Urban population (% of total population)	76.39	77.08	78.05	79.27	80.10

Source: Health Nutrition and Population Statistics, World Bank, 2020

Libya's Human Development Index (HDI) value for 2018 was 0.708, which is considered a high human development category, and positions Libya 110th out of 189 countries and territories. Between 1990 and 2018, Libya's HDI value increased from 0.676 to 0.708, an increase of 4.6 percent. Between 1990 and 2018, Libya's life expectancy at birth increased by 4.2 years, average years of schooling increased by 3.8 years and expected years of schooling decreased by 1.2 years. Libya's GNI per capita decreased by about 42.6 percent between 1990 and 2018 (UNDP, 2019).

Libya's 2018 HDI of 0.708 is below the average of 0.750 for countries in the high human development group, and is above the average of 0.703 for countries in the Arab States. Among the Arab States, the countries which are close to Libya in terms of HDI 2018 ranking and to some extent in terms of population size are Jordan and Tunisia, whose HDIs are ranked 102 and 91, respectively (UNDP, 2019)

Table 5 compares GDP per capita in Libya and other countries. In 2019, Libya's GDP per capita, expressed in US$, is higher than MENA and its neighbors. Turkey's GDP is the highest among the countries compared.

Table 5. GDP Per Capita (Constant 2010 US$)

Country Name	2000	2005	2010	2015	2019
Libya	8,963	10,642	12,064	5,899	8,122
Egypt	1,981	2,147	2,644	2,703	3,008
Algeria	3,557	4,290	4,480	4,777	4,710
Morocco	1,976	2,363	2,839	3,222	3,396
Tunisia	3,001	3,490	4,142	4,308	4,405
Turkey	8,237	9,692	10,672	13,853	14,999
MENA	5,795	6,480	7,169	7,572	7,857

Source: Health Nutrition and Population Statistics, World Bank, 2020

2.2.2 Health Status

In the three decades leading up to 2011, Libyan authorities invested significantly in the health sector, resulting in significant improvements in health service delivery and the general health status of the population. The achievement of Libya's Millennium Development Goal (MDG) health targets is clear evidence of this (WHO, MoH of Libya & EU, 2017). But, Libya experienced a major armed conflict that resulted in significant loss of life and economic disruption, as well as the disintegration of public health care system. As a result, the Libyan health system has faced great challenges under extremely unusual circumstances (Daw, El-Bouzedi, & Dau, 2016).

Table 6 summarizes Libya's health status indicators over the past 20 years. Even health status indicators in Libya are not very good compared to indicators in developed countries, they are better than the measures in many developing countries. Life expectancy of population at birth (72.7 years in 2018) increased by 1.8 years and the infant mortality rate decreased from 24.1 to 9.9 deaths per 1,000 live births over the past 18 years. The under-five mortality rate decreased by 30.7% from 16.6 deaths per 1,000 live births in 2010 to 11.5 deaths per 1,000 live births, although the rate of improvement has clearly declined drastically since 2010 compared to the rate of decline between 2000 and 2010. The neonatal mortality rate has also improved in the last 20 years. The total Fertility rate has also declined, with 2.2 births per woman in her lifetime (WB, 2020).

Table 6. Health Status Indicators of Libya

Variables	2000	2005	2010	2015	2018	2019
Life expectancy at birth, total (years)	70.9	71.9	72.0	72.1	72.7	..
Life expectancy at birth, male (years)	69.2	70.0	69.5	69.2	69.9	..
Life expectancy at birth, female (years)	72.8	74.1	75.0	75.3	75.8	..
Mortality rate, infant (per 1,000 live births)	24.1	19.8	14.2	11.4	10.2	9.9
Mortality rate, under-5 (per 1,000 live births)	28.1	23.1	16.6	13.3	11.9	11.5
Maternal mortality ratio (modeled estimate, per 100,000 live births)	70.0	57.0	53.0	70.0..		..
Mortality rate, neonatal (per 1,000 live births)	15.9	13.0	9.4	7.5	6.7	6.5
Death rate, crude (per 1,000 people)	4.6	4.5	4.8	5.1	5.1	..

Source: Health Nutrition and Population Statistics, World Bank, 2020

Non-communicable diseases (NCDs) account for 78% of total 26,000 deaths. Cardiovascular diseases are the leading causes of death with 43%, while cancers and injuries are the other main causes with percentages of 14 and 12, respectively. The smoking rate is very high among men (45%) but the smoking rate among women is less than 1%. The national system response to NCDs is very low (MoH of Libya, 2020).

The health sector is reportedly one of the sectors most affected by the conflict and other regional issues such as migration to Europe and other continents. Undesirable circumstances affected 1.6 million (22% of the population) and left 0.82 million people (11% of the population) in unmet need. More than 60% of those in need were refugees in 2018. Public health services have been heavily impacted by the crisis due to insecurity and governance failures. As a result, Libyans and foreign nationals have no access to essential primary and secondary health care. Children are among the most affected groups (OCHA, 2020). The consequences of armed conflict in Libya impose considerable burdens on the economy and health services, particularly in countries that are not equipped to deal with them, such as countries in the Middle East, and North Africa (Daw, El-Bouzedi, & Dau, 2019).

2.3 Governance and Management

The Libyan health care system has come a long way since 1951, when it started functioning with limited resources: 14 hospitals (with a bed capacity of 1,600) and a small number of health centers. In 1972, the country's planned development process started with the first Three-year National Transformation Plan (1973-75) emphasizing that access to health services was a right of every citizen. Community health centers were introduced between 1970 and 1979. “Health for all” has been the mandate since 1980, with the Libyan government providing free universal coverage of health services (WHO, MoH of Libya & EU, 2017).

Decentralization of the health system started in 2000, when the central body (Secretariat of health) was dismantled in favor of the district level. In 2003, the Health Care Planning Authority was established, and the Inspector General of Health was appointed at the central level to supervise the district health secretariats, which had no executive authority. The year 2006 saw a return to centralization. The Secretariat of Health was re-established and authorized to supervise central institutions and district health secretariats. The Ministry of Health was established in 2011, and a Minister of Health was appointed. The onset of the second round of conflict in 2014 resulted in a fragmentation of health care governance due to changes in the country's political system. Health services are now provided by a mix of public and private providers, with some traditional medicine also being prescribed. Health services have deteriorated significantly since 2011, with severe constraints in terms of technical capacity and financing (WHO, MoH of Libya & EU, 2017).

The study of Saleh et al. (2014) aimed to evaluate the development of health-care systems in the Arab world with respect to health-care coverage and financing, with a focus on Egypt, Libya, Tunisia, and Yemen. Libya supported the transition to a market economy in other sectors by reducing subsidies and considering privatization strategies. In parallel, the private sector has been passively encouraged to increase its involvement in service provision. This resulted in a high supply of health care services (Libya, with 37 hospital beds per 10,000 people, has the highest number per capita in the region) provided in a two-tier system, with deteriorating quality of care and consequently low confidence in public health care facilities. Additionally, out-of-pocket payments were substantially higher at 31.2%. In Libya, widespread distrust of the quality of care in health facilities has given rise to a multi-million-dollar medical tourism industry in neighboring countries (Saleh et al, 2014).

Zarocostas recalled some facts about the Libyan health system before the revolution. Libya had the means to attract foreign health professionals, purchase life-saving medicines and send people abroad for treatment. But these approaches diminished the institutional capacity of the Libyan health system. The negative effects were felt when many foreign health employees left Libya after the revolution and economic crisis. The political conflict and economic crisis reduced the quality of health services and access to care (Zarocostas, 2018).

Although health services provided in public facilities are free of charge for Libyans, the number of people seeking treatment in neighboring countries is of great concern due to the lower quality of services provided. Concerns about the quality of health services and trends in treatment abroad are encouraging the private sector to invest more in the health sector. Public sector management is hampered by the lack of a clear sector

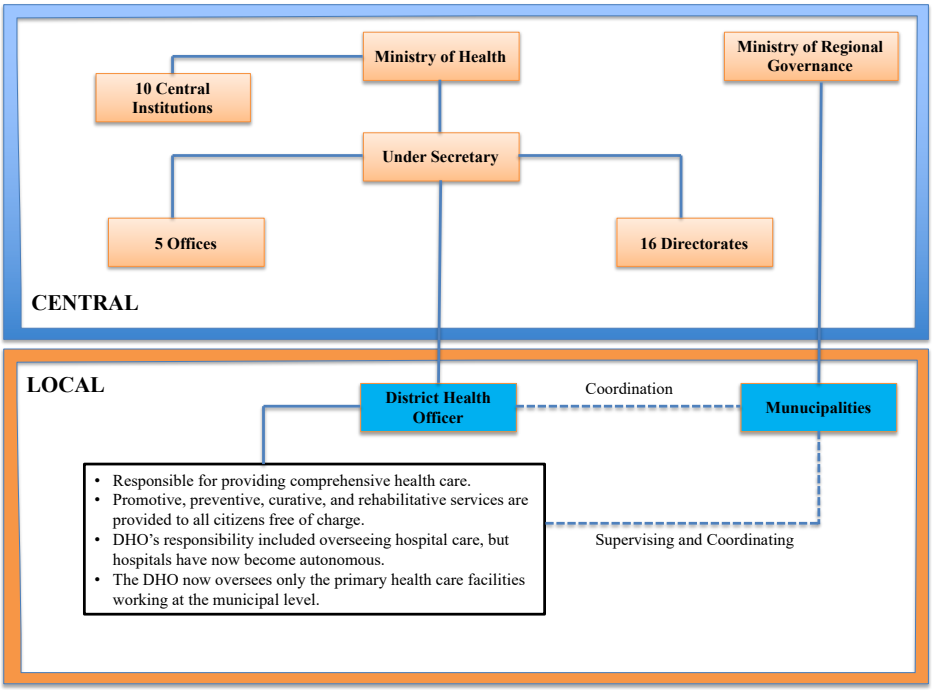
strategy, the absence of a proper information system, and a distribution of financial resources that is not based on health needs (EU, 2013) or any form of even basic planning. For this reason, it was concluded that the Libyan health system needs urgent reforms in various aspects to meet the Health care needs and improve health outcome indicators in terms of governance, financing and delivery. The provision of safe, effective, and accessible health services to all citizens should be the heart of reform processes (Mahmud, Ali, Salhin, Mohamed, & Elkhammas, 2013).

2.3.1 Health System Organization and Regulation

The Ministry of Health (MoH) is responsible for the regulation and delivery of health services. Through a chain of public health facilities, the MoH provides health care services and regulates the growing private health sector. Municipalities also play some role in the health care system. More than 101 municipalities are responsible for health planning, implementation, monitoring and evaluation. Municipal health offices provide comprehensive health care, including promotion, preventive, treatment and rehabilitative services to all citizens, free of charge, through primary health care units, health centers and district hospitals. In addition to municipal health offices, the military and the National Oil Company provide health services to members of the armed forces and company employees. A growing private health sector is also emerging, although it currently has a limited role. However, there has been a trend toward centralization since 2006. (WHO-ROEM, 2011; WHO, MoH of Libya & EU, 2017).

Figure 2 shows how the Libyan health system is organized at the central and local levels. Previous reform attempts to decentralize the health system and subsequent attempts to recentralize created a fragmented health system. There are 10 central institutions (National Information Center, National Center for Disease Control, Central Hospitals & Medical Centers, Libyan Council of Medical Specialties, etc.), and 16 directorates (Health Planning, Human Resources, Health Education, Primary Care Services, etc.). These centers and directorates are responsible for the governance, regulation, planning and coordination of health services throughout the country. The Ministry of Regional Governance has also some responsibilities in the health system through the municipalities in the regions. District Health Officers in six health regions are responsible for coordinating the delivery of health service and other health-related aspects in their respective regions, in coordination with local authorities.

Figure 2. The Organization of the Libyan Ministry of Health



Source: Authors' own figure

There are a number of laws, executive regulations and decrees issued by the legislative authorities, the government and the Ministry of Health. The most important piece of legislation is the Health Code No. 106 of 1973 (the "Health Law") which was specified in Decree 654/1975 issued by the General People's Committee, the government body at the time (the "Executive Regulation"). This code regulates the establishment and operation of hospitals and the practice of medical professions. The code defines the responsibility of the state to provide free health services to all citizens. Many experts consider many laws related to the health system and services to be outdated, unhelpful, and fail to regulate some important issues such as confidentiality, regulation of electronic storage, quality, accreditation, governance of public hospitals, etc.

The Health Act No24 of 1994/1423 gave primary health care a fundamental position within the health system. A series of legislations (No. 9/1992, No. 6/1430, and 535/1993) regulated the involvement of the private sector in health care. Another important strategic decree was issued by the government (828/1423), which aimed at self-reliance in human resources. There is a need to introduce appropriate legislation, including those aimed at ensuring coordination between different sectors.

2.3.2 Health Services Planning

Planning is the process of determining in advance who should accomplish what, when, how and at what cost. It represents the first step in an orderly process to accomplish the things necessary to improve the health status of individuals and populations. It is an essential component of good governance. In the 1960s and 1970s, the health sector plan followed the national development plan of 3-5 years. These were correlated with substantial improvement in health indicators shown in the decline of many infectious diseases such as tuberculosis, trachoma, and others, in diseases associated with poor socioeconomic conditions as nutritional disorders and rheumatic fever, and various mortality indicators. Much of these improvements might also be related to improved living standards due to changes outside the health sector (WHO, MoH of Libya & EU, 2017).

The MoH in Libya had weak planning capability. It was constantly subject to changes in its empowerment and the central government was unsure whether to choose between centralized or decentralized governance approaches (NATO, 2013). Although in the 1990s, there was a 10-years plan, it was never launched as such. Lack of political stability and unstable socioeconomic conditions, and leadership weakened the planning process in the health sector, which almost disappeared. The decision-making process was mainly reactionary and more operationally oriented than visionary or strategic planning as it used to be (El Taguri et al, 2008). The weakness of the health system and the dissatisfaction of the population became evident and was reflected in the increase in health tourism to neighboring countries, even for relatively mild conditions or non-complex interventions (Al Taguri, 2007).
In 2012, a major event for planning and reform took place with the organization of H500 health reform conference (Oakley et al, 2013). These activities almost came to a halt due to oscillation of violence and political division with health authorities becoming drowned in daily shortages of drugs, equipment, spare parts and human resources due to lack of financing and security. In 2016, a national center for health system reform was established to institutionalize health reform activities. International organizations and local institutions worked individually to form many national strategic plans such as maternal and child health (RMNCAH), HIS, Primary Health Care Strategy, etc. However, the planning and evaluation cycle is not complete, as there is generally a lack of political will, and no liaison of these strategies or plans with indicators to assess performance and the typical monitoring and evaluation needed to actualize such plans.

2.4 Health Care Financing

Health system in Libya is financed by the state budget. The Ministry of Finance determines the budget for the Ministry of Health each year. However, there is no

explicit rule or process for how much money is allocated to the health sector. Usually, the size of the overall state budget is the main determinant of the MoH's budget. Then the budget for health care facilities in the different districts is determined within the MoH. The salaries of the health personnel working in the different health facilities in the different districts are paid centrally from the MoH budget. Administrative and some other items of health care expenditures of health care facilities are financed through line-item budget procedure, and the managers of health care facilities do not have the autonomy to spend the line-item budget for different purposes other than pre-determined.

There is no budget for pharmaceutical expenditures of health care facilities, as the pharmaceuticals and drugs needed for pharmacies of health care facilities are distributed by the Department of Drugs and Pharmaceuticals, also known as the Medical Supply Organization (MSO). Pharmaceuticals and medicines are distributed by the Medical Supply Organization (MSO) and its branches in different regions. The Department of Pharmaceuticals and Supplies at the MoH only selects, decides and allocates the drugs to which establishments and before that registers the companies and the drugs that can be imported into the country.

The Ministry of Planning is responsible for meeting the infrastructure and construction needs of health care facilities not the Ministry of Health. The budget for the needs of health care facilities is prepared or approved by the government, and the Ministry of Planning allocates the money.

Under this financing procedure, health care facilities do not receive additional budgets for their pharmaceutical, infrastructure and construction needs. Although municipalities are responsible for coordinating and providing some health care services in their regions, they do not receive funds and they cannot collect money from local taxes or other revenue sources.

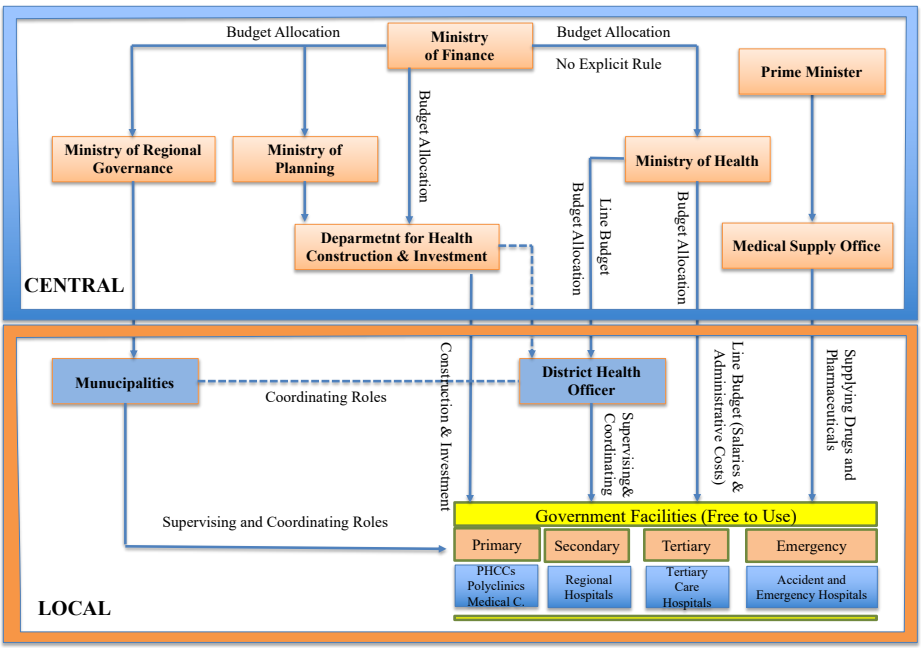
Managers of some health care facilities have the authority to employ health care personnel. For this reason, there is a criticism that health care facilities are over-employed and that there are no rules on how to decide who and how many people should be employed in health care facilities.

There is no authority or body attached to a public authority to purchase health services from public and private health facilities, as all public health facilities are required to provide free health services to their users, and people are not covered financially for health services provided by the private sector. All health services and drugs provided by

the private health sector have to be financed either through direct payments or through private health insurance companies.

The financing of the health system and the roles of the Libyan Ministry of Health and other ministries are summarized in Figure 3.

Figure 3. Financing the Health System in Libya



Source: Authors' own figure

2.4.1 Health Expenditures

Health financing performance are evaluated by comparing four main indicators. These are the overall level of health spending, the government's share of total health spending, the share of out-of-pocket payments for health, and the role of international nongovernmental organizations.

Table 7 indicates Libya's spending on its health system by year. Data are not available for the last 10 years in Libya, and the latest figures are for 2010. According to the Table 7, Libya spent 3.59% of its GDP on health, and per capita health spending in PPP-adjusted USD was about US$958. The majority of health expenditure (69.94%) came from general government while the rest (29.97%) was private for the year of 2010. It appears that all private health expenditures came from out-of-pocket expenses. A very

small share of total health expenditures, 0.09%, was spent by external sources of health expenditures.

Table 7. Health Expenditures

Health Expenditure Categories	2000	2005	2010	2015	2018
Health Expenditures (per capita, PPP, USD)	696.50	603.77	958.13	n.a.	n.a.
Current health expenditure (% of GDP)	3.43	2.60	3.59	n.a.	n.a.
Current health expenditure per capita (current US$)	244.77	212.27	400.86	n.a.	n.a.
General government domestic health expenditure (% of general government expenditure)	6.04	5.78	4.33	n.a.	n.a.
Government domestic health expenditure per capita, PPP (in current international $)	339.26	390.36	670.10	n.a.	n.a.
Private domestic health expenditure (% of current health expenditure)	51.29	35.35	29.97	n.a.	n.a.
External health expenditure (% of current health expenditure)	-	-	0.09	n.a.	n.a.
Government domestic health expenditure (% of current health expenditure)	48.71	64.65	69.94	n.a.	n.a.
Government domestic health expenditure (% of GDP)	1.67	1.68	2.51	n.a.	n.a.
Out-of-pocket expenditure (% of current health expenditure)	51.29	35.35	29.97	n.a.	n.a.

Source: Health Nutrition and Population Statistics, World Bank, 2020

The share of health expenditures in a country's total GDP is an indicator of the priority given to the health system by the country. Libya spent 3.6% of its GDP on health services in 2010 and this level is the lowest compared to other comparable countries in Table 8. This means that the health sector in Libya, in terms of funding, was not considered a high priority sector, even the year prior to the political turmoil of 2011. With a percentage of 7.0% of GDP allocated to health, Algeria and Tunisia appear place a higher priority on the health sector than comparable countries in the region.

Table 8. Current Health Expenditure (% of GDP)

Country Name	2000	2005	2010	2015
Libya	3.4	2.6	3.6	..
Algeria	3.5	3.2	5.1	7.0
Egypt	4.9	4.9	4.2	5.3
Tunisia	5.1	5.4	5.9	7.0
Turkey	4.6	4.9	5.1	4.1
Arab World	4.0	3.5	4.0	5.1
MENA (excluding high income)	4.8	4.6	5.5	6.1

Source: Health Nutrition and Population Statistics, World Bank, 2020

Although Libya's share of health expenditures in GDP in 2010 is the lowest, its per capita health expenditure in current dollar terms is not the lowest. This is because Libya's GDP is relatively higher than many other Arab countries. Turkey is another country with higher per capita health expenditure than the countries compared.

Table 9. Current health expenditure per capita (current US$)

Country Name	2000	2005	2010	2015
Libya	244.8	212.3	400.9	..
Algeria	61.3	100.3	228.4	290.5
Egypt	72.5	62.8	111.4	180.8
Tunisia	111.8	172.4	243.6	268.2
Turkey	199.5	364.9	539.3	454.6
Arab World	114.8	139.0	248.9	351.1
MENA (excluding high income)	80.9	108.2	224.8	240.1

Source: Health Nutrition and Population Statistics, World Bank, 2020

The share of public health expenditures in total health expenditures is usually considered a good indicator of the equity of health service financing in a country. With public health expenditure accounting for 78.1 of total health expenditure, Turkey's health system is predominantly publicly financed among the countries listed in Table 10. In Algeria, just over 70% of total health expenditure in 2015 came from public sources, while in Libya, the proportion was 70% in 2010. It seems that Libya's private health expenditures are higher than those of the other countries. This could be an indicator of deteriorating equity in the financing of health services in Libya.

Table 10. Domestic General Government Health Expenditure (% of Current Health Expenditure)

Country Name	2000	2005	2010	2015
Libya	48.7	64.7	69.9	..
Algeria	72.0	69.3	69.5	70.5
Egypt	35.2	32.3	32.9	31.2
Tunisia	52.7	50.8	55.8	57.0
Turkey	61.7	67.7	78.0	78.1
Arab World	54.9	57.3	58.2	58.4
MENA (excluding high income)	40.6	42.7	43.2	46.8

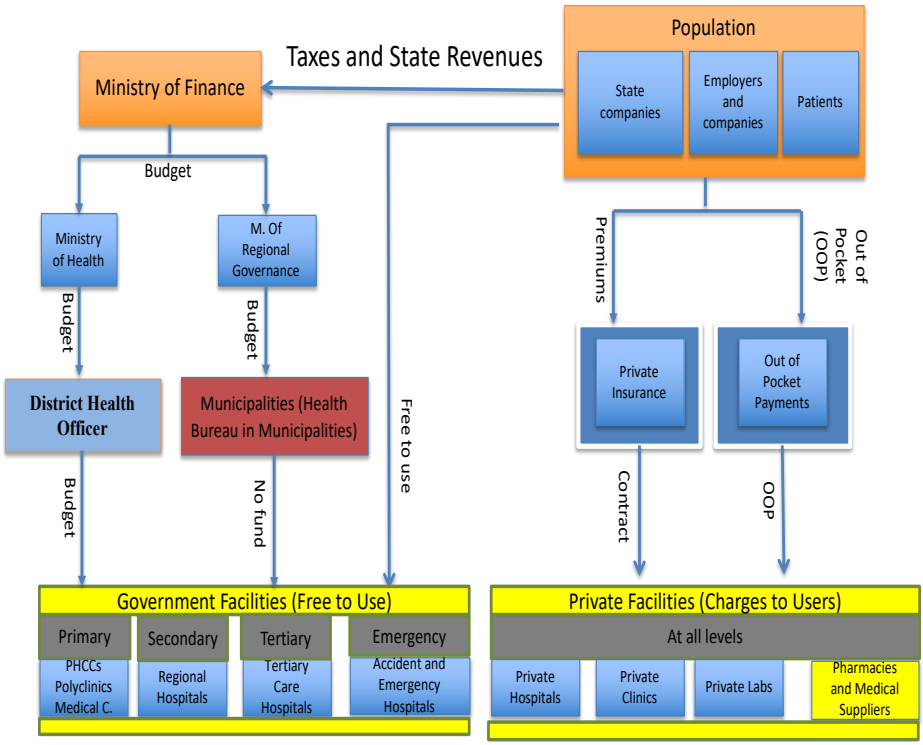
Source: Health Nutrition and Population Statistics, World Bank, 2020

2.4.2 Sources of Health Financing

Services provided by public health care facilities at all levels are free of charge, and public health care facilities are funded through a line-item budgeting process by Ministry of Health. The Ministry of Finance determines the budgets of the ministries each year, and its main sources of revenue are taxes and revenues from public enterprises. Libya has provided health care services primarily through public health care facilities. The private health sector also has been encouraged for many years. The Libyan government has even allowed the private sector to operate at the primary care level. Libya has benefited from its rich oil resources for years, but the oil revenues decreased after armed conflict began. The decline in government revenues has had a negative impact on the health sector, as the Ministry of Health has not been able to receive the needed budget to provide effective, quality health services in its health facilities. It is not even able to meet the most basic needs of health facilities including basic medicines.

People choose to use private health facilities to meet their health needs because public health care facilities are not adequately staffed and equipped. Although public health care facilities are responsible for distributing medical supplies and drugs from their own pharmacies, they usually are generally unable to carry out their responsibilities due to supply shortages. They lack specialist doctors in some areas, and other materials to provide better health services. In such a situation, many Libyans have to resort to private health care facilities by paying the costs out of their own pockets, as these are not covered by the government. Health insurance companies have been growing in Libya as they purchase better, more efficient and advanced health services either from the private health sector in Libya or by sending their members to other countries.

Figure 4. The Source of Revenues of Public and Private Health Care Facilities



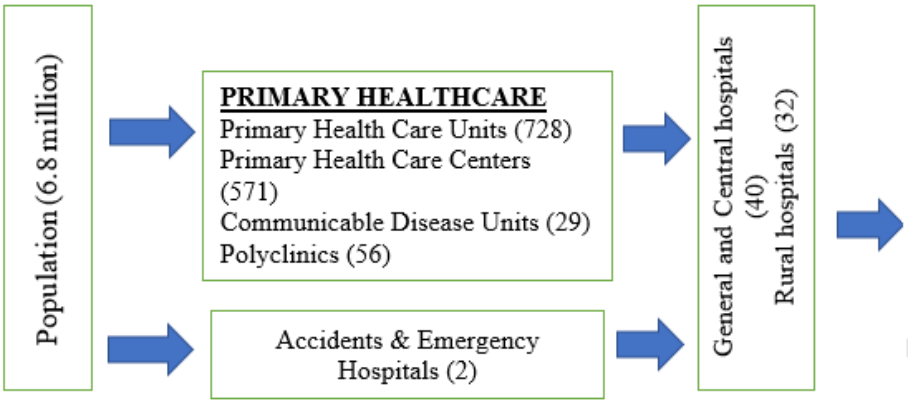
Source: Authors' own figure

2.5 Health Services Provision

In Libya, there is a mixed system of public and private health care, rather than a purely state-run model. Health care is delivered through a series of primary health care units, centers, polyclinics, rehabilitation centers, and general hospitals in urban and rural areas, in addition to a number of specialized tertiary care hospitals. Although their role and the number of health care facilities are limited, it may be important to mention that there are other public and nongovernmental organizations such as Social Security, the Red Crescent and the Armed Forces in the provision of health care services. The health care delivery system operates at three levels (WHO, MoH of Libya & EU, 2017):

Figure 5 summarizes the type and number of health facilities at different levels and how the health system delivery is organized in Libya.

Figure 5. Health Services Delivery Organization in Libya



Source: Authors' own figure

The role of these health care facilities at different levels can be defined as follows (Daw, El-Bouzedi, & Dau, 2016):

1) Public Health Care Providers: Primary health care units, centers, polyclinics are all primary health care providers, but they have different population bases. These providers offer basic health care, such as check-ups and vaccinations, and are the main referral points to regional hospitals. The services offered by primary health care providers are free of charge for all patients.
2) Regional Hospitals: Referral hospitals in the region where patients are referred and/or admitted for hospitalization for either either specific treatment or operations. The services offered by these hospitals are free of charge for all patients.
3) Tertiary Care Hospitals: National Hospitals/facilities where patients referred by regional hospitals for complicated cases, as special care or operations may be needed. The services within these hospitals are free of charge for all patients.
4) Private Hospitals and Clinics: Hospitals managed by the private sector. Services offered in these hospitals are not free. Charges are paid by patients or covered by health insurance.
5) Accident and Emergency Hospitals: Hospital specialized in traumatic accidents and burns. Services within these hospitals are free of charge for all patients.

2.5.1 Primary Health Care

Primary health care services are provided with a decentralized manner by four main public providers: Primary health care units (n: 728), primary health care centers (n: 571), communicable diseases units (n: 29), and polyclinics (n: 56).
Primary Health Care Units (PHCUs) serve an area of 5,000-10,000 inhabitants area

and provide these services: maternal health care; neonatal, child, and school health and vaccination; early diagnosis of infectious diseases and implementation of local control measures; health promotion (education); registration and follow up of chronic diseases; curative services for cases presenting to the unit; nutrition awareness; water quality monitoring and sending samples for analysis, and community-based environmental health surveillance (WHO, MoH of Libya & EU, 2017; NATO, 2013).

Primary Health Care Centers (PHCCs) serve an area of 10,000 to 26,000 people and provide the following services: maternal and child health care; curative medical and dental services for walk-in patients and those referred by affiliated PHCUs; infectious and endemic disease mitigation and control; regulation of vaccination services; health promotion (education); nutrition awareness; supervision of school health responsibilities in the area; environmental health surveillance; and sanitary oversight of factories and stores in the area. Communicable Diseases Units (CDUs) provide TB diagnostic and treatment services.

The polyclinics serve an area of 50,000-60,000 people and provide the following services: specialized curative services, including dental care to walk-ins and referrals from affiliated PHCUs and PHCCs. In addition, they provide maternal and child health, school health, and nutrition education services.

The organization of primary health care services starts at the periphery. Basic health care is provided at this first level through PHC units and centers. There is an intermediate level between the first and second levels of PHC, where more sophisticated services are provided by polyclinics and workplace clinics. Primary health care centers are staffed by a physician, a nurse, a dentist, a laboratory technician, X-ray or radiology assistant, pharmacist and medical records clerk. In some large centers, maternal child health, pediatrics and ambulatory surgery services are provided. In some urban areas, 3–4 primary care centers are supported by polyclinics, where specialists from the catchment area hospital provide services to patients (WHO-ROEM, 2011).

2.5.2 Secondary and Tertiary Health Care

District and general hospitals provide care to people referred from the first level. At the third level, specialized and teaching hospitals provide advanced care to people referred from the second level. The referral system needs to be improved as many centers operate on an open access basis (WHO-ROEM, 2011).

Secondary and tertiary health care officially have an adequate number of beds (more than 37 per 10,000 population), but not all beds are functional. Public facilities also lack necessary facilities to meet many basic expectations (NATO, 2013).

There are two types of hospitals providing secondary level health care. General hospitals, with fewer than 100 beds provide inpatient care in multiple specialties areas including dental care for patients referred from primary care facilities. The total number of general hospitals is 40 as of 2017. Rural hospitals with a capacity of 40 to 60 beds provide inpatient care in pediatrics, obstetrics and gynecology, general surgery, dental care, and general medicine. There are 26 specialized or tertiary care hospitals that provide specialized inpatient services, such as chest care, cardiology, trauma and eye care.

2.5.3 The Role of Private Sector

Libya has 157 private inpatient facilities with a capacity of 2,812 beds. Most of the private facilities are located in Tripoli, Benghazi, Aljafara and Misrata. The private sector also includes 503 outpatient clinics, 302 dental clinics, 2,254 pharmacies and 426 laboratories (WHO, MoH of Libya & EU, 2017).

The government decided to encourage the expansion of private clinics and hospitals and to introduce family doctor practice with the necessary regulations (WHO-ROEM, 2011). However, the continuous growth of the private health sector was initially hampered by the lack of a comprehensive policy approach to the private sector by the MoH. In the absence of a clear and consistent government policy, private clinics generally faced deep uncertainty and could not afford to invest in their expansion and development. These clinics were granted operating licenses without clear criteria or inspection policies, which made owners fear that their license could be arbitrarily revoked by the authorities. Staffing in the private sector relied on health professionals who worked in the public sector and were transferred to the private sector, a factor that negatively affects the quality and quantity of services available in the public sector. An ill-advised decree in January 2006 prohibited this "dual practice", which obviously had serious consequences for both the public and private sectors, as most doctors depend on their private work for most of their income. At present, services delivered by private providers are generally limited to basic activities such as simple operations, as the absence of health insurance means that the population would have to pay out of pocket for more expensive treatments in the private sector (WHO, MoH of Libya & EU, 2017).

The establishment of non-governmental organizations (NGOs) was first allowed in 1971 and the Associations Act. "*Act no 19*", issued in 2004, expanded the role of NGOs in the health sector and organized their registration mechanisms, role, and scope of action. The Libyan Red Crescent Society and a small number of international, national and subnational NGOs provide health care in the areas of disability, mental health, HIV/AIDS, infertility, kidney disease and cancer (WHO, MoH of Libya & EU, 2017).

2.5.4 The Capability of Health Care Facilities

The Service Availability and Readiness Assessment (SARA[1]) Libya measured service readiness scores for hospitals and primary health care facilities by assessing the availability of tracer items in five domains: Basic Amenities (six tracer elements), Standard Precautions for Infection Prevention (seven tracer elements), Basic Equipment (five tracer elements), Basic Medicines (20 tracer elements), and Diagnostics (seven tracer elements), each of which are needed to provide adequate basic services. The SARA Libya report showed that the overall readiness score for basic service delivery by hospitals was 69%, indicating an average readiness to deliver services. The overall score was lowered mainly due to low availability of basic medicines (44%) and fairly limited availability of diagnostic tests (63%). The overall readiness score of 45% for PHC facilities was unacceptably low and indicated that the capacity to provide basic health services in these facilities was severely constrained. The greatest limitation lay in the availability of basic medicines, with a score of only 16%. The availability of standard precautions and diagnostics was higher, at 49% and 48%, respectively, while the score for basic equipment was 50% (WHO, MoH of Libya & EU, 2017). In particular, the number of hospital beds per 1,000 people is 3.7, which is 1.1 bed more than WHO standard of 2.6 beds.

Table 11. Hospital Beds (Per 1,000 People)

Country Name	2000	2005	2010	2015
Libya	4.1	3.4	3.7	..
Algeria	..	..	..	1.9
Egypt	2.1	2.2	1.7	..
Tunisia	1.7	1.8	2.1	2.3
Turkey	2.1	2.3	2.5	..
Middle East & North Africa (excluding high income)	1.6	1.7	1.6	..

Source: Health Nutrition and Population Statistics, World Bank, 2020

[1] SARA Libya report assessed the general service readiness and service specific readiness of all health facilities using the WHO framework in 2017. General Service Readiness refers to the overall capacity of health facilities to provide general health services. Readiness is defined as the availability of five specific components (basic amenities, basic equipment, standard precautions for infection prevention, diagnostic capacity, and essential medicines) required to provide services. Service-specific readiness refers to the ability of health facilities to offer a specific service and the capacity to provide that service, as measured by selected service-specific tracer items in five domains: trained staff, guidelines, equipment, diagnostic capacity, and medicines and commodities.

SARA Libya accepted general service and service specific readiness measures as an indicator of service accessibility and availability, and discussed that the physical availability of health services in Libya was good and higher than WHO targets considering the health infrastructure density index consisting of three components: (1) density of facilities per 10,000 population, (2) density of hospital beds per 10,000 population, and (3) density of maternity beds per 1,000 pregnant women.

2.6 Health Workforce

The health workforce in Libya was characterized by poor human resource management, high attrition, outdated education and training programs, poorly applied skills, absenteeism, inadequate support, and lack of supervision. Libya had trained too many health workers, whom the country was then forced to hire and had instituted a practice whereby some workers held multiple positions and were thus paid twice. Both of these phenomena drained financial resources. The health workforce, especially nurses, was heavily dependent on expatriate staff; most qualified nurses were not Libyan. Quality control and continuing education programs were limited and morale was reportedly low (NATO, 2013; Congress, 2005).

The production of health personnel for health is the prime responsibility of Ministry of Education. Ministry of Health also plays a role in production of some health professionals that need specialization in certain areas, but there is a clear disconnect between the two ministries. Pre-service training institutions should have the capacity to meet the demand for health services. There is a need to understand the critical gaps in the supply of certain health professionals and to take informed decisions about allocating the limited resources available to cadres that meet current health system goals and requirements (MoH of Libya, 2018)
Libyan universities have 18 medical schools (1 private), 15 dental schools (3 private) and 9 nursing schools. There are 11 schools of pharmacy (1 private), 3 schools of health sciences, 3 schools of public health and 11 schools of medical technicians. But 2 universities related to medical and paramedical education (Sidra and Aljofra) are not in operational mode (MoH of Libya, 2018).

The shortage of health personnel has many causes and may be the result of an insufficient number of trained individuals, an inadequate skill mix, or a poor deployment of health personnel. The decade-long emergency and instability in the country has had a direct impact on human resources for health. SARA Libya has clearly highlighted the imbalance and misallocation of human health resources. The outflow of qualified national and foreign workers, the inability of mangers to enforce vague regulations, the lack of monitoring and supervision, the continued absence or limited

presence of some staff coupled with limited availability of medicines have severely affected service delivery in the country (MoH of Libya, 2018).

Table 12. The Number of Health Workforce for the Year 2017

SPECIALIZATIONS	NUMBER
Specialists	4,391
General practitioners	9,336
Nurses	41,934
Midwifes	1.041
Dentists	5,776
Pharmacists	3,956
Health technicians	29,375
Others	36,400
Total	132,209

Source: MoH of Libya, 2018

Libya has a large number of health professionals but they are poorly distributed, resulting in severe human resource shortages in many health facilities. Weak governance due to security concerns and financial constraints has discouraged the staff from working effectively and efficiently. Some health workers do not visit the facilities at all and some visit only once a week. The imbalance in the distribution of health workers in Libya is recognized as a major problem, as shown in Table 13 below (MoH of Libya, 2018).

Table 13. Distribution of Health Human Resources across Libya

Region/Specialization	Specialists		General Practitioners		Nurses		Midwifes	
Distribution	Sanctioned	Filled	Sanctioned	Filled	Sanctioned	Filled	Sanctioned	Filled
Tripoli	1807	728	3624	2570	6819	3498	265	116
South	220	40	235	192	797	952	60	50
Eastern	536	241	663	601	2022	1735	134	70
Benghazi area	630	333	946	880	2153	1421	127	90
Central	359	166	439	387	1267	847	68	50
Western	705	389	851	796	2602	2210	172	91
Total	4257	1897	6758	5426	15660	10663	826	467

Source: MoH of Libya, 2018

As can be seen from Table 13, the southern region has a high surplus of nurses and a shortage of doctors, while Tripoli faces a shortage of nurses and midwives. The central (middle) region has a high percentage of midwives and a shortage of specialist doctors and nurses. The Eastern region has a shortage of medical specialists and midwives, while

Benghazi and the western regions have a shortage of specialist doctors. There is also a shortage of nurses and midwives in the Western region (MoH of Libya, 2018).

A breakdown of all health staff at the municipality level indicates that there are 12 municipalities that do not have a GP or family doctor working in a PHC facility, with 12 municipalities having only one staff employed, while four municipalities employ over 100 staff. This indicates an inequitable distribution of basic service providers (WHO, MoH of Libya & EU, 2017).

Table 14 shows the latest figures for health workforce per 1,000 population. The number of physicians and nurses/midwifes per 1,000 people is around the figures suggested by the WHO.

Table 14. Health Workforce and Health Facilities

Variables	2000	2005	2010	2014	2015
Physicians (per 1,000 people)	-	-	1.90	2.1	1.89
Nurses and midwives (per 1,000 people)	-	-	6.80	6.65	-
Dentists (per 1,000 people)	-	-	-	0.89	
Pharmacists (per 1,000 people)	-	-	-	0.6	
Hospital beds (per 1,000 people)	4.10	3.40	3.70	-	-

Source: Health Nutrition and Population Statistics, World Bank, 2020; MoH of Libya, 2018

Table 15 compares doctors and nurses/midwifes per 1,000 population in Libya and other countries. Given the numbers, the density of health personnel in Libya is quite good, better than most countries in the region.

Table 15. Physicians and Nurses/Midwifes (Per 1,000 People)

Country Name	2000		2005		2010		2014/2015		2018	
	Phy.	Nur.	Phy.	Nur.	Phy.	Nur.	Phy.	Nur.	Phy.	Nur.
Libya	-	-	-	-	1.9	6.8	2.1	6.7	-	-
Algeria	-	-	1.0	-	1.2	1.9	-	-	1.7	1.5
Egypt	2.1	-	2.4	-	2.8	3.5	0.8	1.9	0.5	1.9
Tunisia	0.8		0.9	-	1.2	2.2	1.3	2.7	-	-
Turkey	1.3	1.8	1.5	1.8	1.7	2.3	1.8	2.6	-	-
Arab World	1.1	-	-	-	1.5	-	-	-	-	-
MENA (excluding high income)	1.2	-	-	-	1.4	2.5	-	-	-	2.5

Source: Health Nutrition and Population Statistics, World Bank, 2020; MoH of Libya, 2018

2.7 Medical Supplies and Technologies

The shortage of medical supplies (disposable medical products and essential pharmaceuticals) and the inadequate medical supply system are considered important problems of the medical supplies and technology aspect in Libya (Daw, El-Bouzedi, & Dau, 2016). The acute shortage of essential medicines is a common problem, contributing to ineffective health services delivery in Libya. WHO defines essential medicines as those medicines that " meet the priority health care needs of the population", and these are the medicines that people should always have access to in sufficient quantities. A total of 397 (27%) of the PHC facilities and hospitals surveyed reported offering pharmaceutical services or having a main storage area for pharmaceuticals, with 80% of services available in PHC facilities and 20% in hospitals. Additionally, 52 functional medical supply stores were available to house and distribute medical supplies to individual health facilities (WHO, MoH of Libya & EU, 2017)

2.8 Health Information System

Health Information System (HIS) is a key component of any health system. All components of the health systems model depend on HIS to guide their planning and decision-making activities. Health information is vital to provide planners and policy makers the evidence and information needed to make effective policies and decisions for quality patient care and optimal system performance. It is an indispensable tool for health system reform as it is an essential source of health information data for program monitoring, performance monitoring, quality of care, planning, and policy making, among others. Successful health reform requires relevant, timely, and accurate information on the health system itself. The essence of a health information system is to collect, organize, analyze and safely store and protect this information (WHO_1, 2007).

The HIS would only fulfill its role by completing the “data-information-knowledge-intelligence” cycle and the presence of a monitoring system. Information would be meaningless if the necessary actions are not taken to address the problems and attempt to solve them. In addition, HIS are closely related and highly dependent on vital registration systems and statistics. Examples would include live births, birth rates and mortality statistics, including causes of death. Measuring equity of service provision and responsiveness requires disaggregated data and well-functioning HIS data at the sub-national level (El-Taguri, 2008).

In Libya, the Health Information Centre (HIC) of the Ministry of Health was established in 2006 under Law No. 4 of 1990. Since then, the center has its own annual budget, collects routine data from the health facilities, conducts health surveys, trains human resources for statistical units and publishes various statistical reports. Currently, the HIC is headed by a director general who supervises 26 staff, consisting of statisticians, computer specialists, data entry and documentation clerks and a health

information consultant. The HIC has five offices for statistics and research, data analysis, information technology, documentation, and an office for administration and financial matters (WHO_4, 2017).

Historically, health information was received directly from the statistical offices of all the hospitals and from the statistical units of the health department at the district level. Reports were generated annually. However, due to current political challenges, the flow of information has been interrupted and significantly reduced from the hospitals and PHCs. The National Centre for Disease Control is the main entity responsible for disease surveillance and response. All the disease-specific programs have a disease reporting system and report annually to the HIC (WHO_4, 2017).

There are some strengths and weaknesses in terms of HIS in Libya. The existence of a functional Health Information and Documentation Center, the growing demand for data from multiple key health players including donors and NGOs, and the presence of various appropriate documents indicating a relatively well-defined system for basic data collection and reporting from the facility to the national level are strengths of the current HIS. However, the HIS in Libya suffers from many shortages such as inadequate forms and legislations, insufficient training, poorly generated outputs, and feed-back. The data collected is not comprehensive, focused, and organized (WHO_4, 2017).

3

ASSESSMENT OF HEALTH SYSTEM PERFORMANCE INDICATORS AND MAIN ASPECTS OF LIBYAN HEALTH SYSTEM

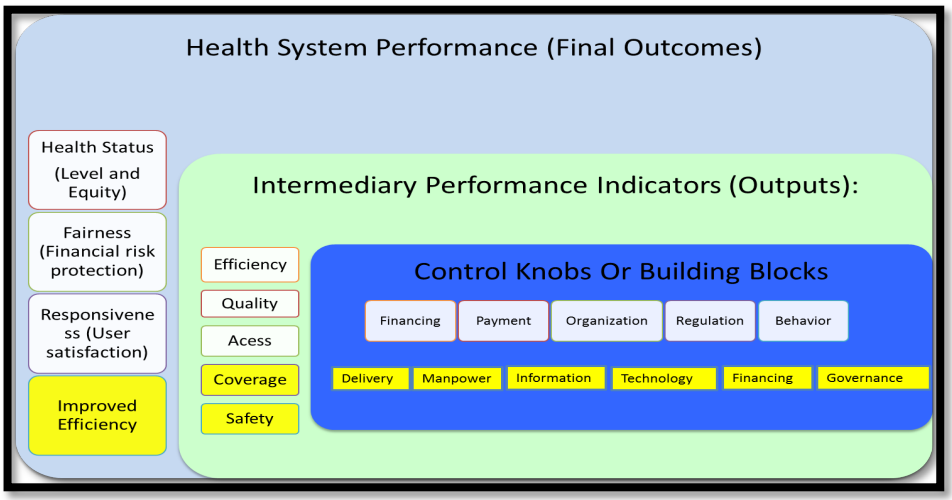
Health system performance (outcome) indicators provide evidence of the system's success in improving population health. System outcomes are influenced by the effectiveness of the constituent elements that define the structure and functioning of the system. The root causes of specific health system problems can be traced to six elements of the WHO health system framework. These elements are service delivery, health workforce, information, medical products and technologies, financing, and leadership and governance (stewardship). Roberts et al (2002) also state that the root causes of problems can also be identified through the five system control knobs: financing, payment, organization, regulation, and behavior. The building blocks and control knobs are important not only for diagnosing problems but also for developing proposals for health reform. Health problems are not always related to a single cause; sometimes several factors cause the problem or increase its severity. Solving or eliminating a problem to achieve a desired outcome through a reform proposal may require addressing issues related to multiple control knobs or building blocks, since the problem might result from inadequate financing, delivery, staffing and other elements of health system.

3.1 The Framework Used to Assess Libyan Health System Performance and Identify Paths for Improvement

Two different frameworks developed by WHO (2007) and the framework proposed by Roberts et al. (2002) are combined for this report to propose health system reforms with the aim of strengthening the system. This involves assessing the performance indicators of the Libyan health system and carefully examining key aspects of the country's health system (Figure 6). Even though both frameworks follow the 2000 WHO health system performance measurement methodology, they provide different and useful approaches to identifying problems and barriers in a health system. Both approaches pay particular attention to the health system’s overall goals (outcomes) and intermediate performance indicators (outputs).

The ultimate goals of improved health status, equity in financing, responsiveness, and improved efficiency can be achieved through intermediate objectives (access, coverage, quality, and assurance) based on the supply of health care, health workers, data, technology and medical goods, financing, and governance. Roberts et al. (2002) identified three intermediate outputs as performance indicators: efficiency, quality, and access (Roberts, Hsiao, Berman, & Reich, 2002). WHO added two more indicators to these: safety and coverage (WHO_1, 2007). It is a fact that achieving better intermediate outputs depends on the efforts of different stakeholders. Safety, quality and efficiency can be considered as the main responsibilities of providers, and these indicators can be closely related to implementation and third-party payer rules. In addition, the European Commission pays attention to the determinants of health status other than health care in a broader context called external influences and the socio-economic environment to increase the efficiency of health systems (European Commission, 2019).

Figure 6. The Framework for Assessing Health System Performance and Main Aspects of Libyan Health System



Source: Adapted from WHO (2007); European Commission (2019); and Roberts et al, (2002)

It should be noted that there is no gold standard for deciding whether a health system is successful in achieving desired outcomes. Comparing countries' health systems in terms of health system achievements is often used to understand the relative performance of systems. In this report, a similar approach was used to decide whether Libya's health system achievements are better than those of the region and a few selected comparable countries.

3.2 Health System Performance Indicators and the Main Aspects of Libyan Health System

Comparing the performance indicators of Libya's health system with those of other countries enables a decision to be made about whether the system is effective in achieving its desired goals. The comparison can also provide insights into the root causes of problems. The assessment of performance indicators as well as the identification of problems in the Libyan health system used the framework presented in Figure 6. Data were obtained from national and international reports and documents for the assessment.

3.2.1 Overall Health System Achievements

The WHO stated in its 2000 Report "Health systems: improving performance" that there were many questions about health system performance, but there were no clear or simple answers. The WHO's conclusion in 2000 still holds true because outcomes are difficult to measure and it is hard to disentangle the contribution of the health system from other factors. The WHO ranked the member countries on three fundamental health system objectives, namely health status measured in disability-adjusted life years, responsiveness, and equity of financial contribution, to compare their performance. Libya was ranked 87th among member countries, placing it behind of many countries in terms of overall health system achievements (WHO_2, 2000)

Despite its poor performance as estimated by WHO in 2000, Libya was ranked as the 11th most efficient health systems when considering the country's health expenditures and health system achievements in terms of life expectancy in 2014. In this comparison, life expectancy in Libya was estimated as 75 years, while per capita health expenditure was estimated at only $398 per person (Bloomberg, 2014).

Health Status

Life expectancy at birth is widely used in international reports and documents to indicate population health. Table 16 shows life expectancy at birth in Libya and selected countries since 2000. All countries have increased their life expectancy over the past 18 years including Libya. Even though Libya is not the most successful country increasing its life expectancy, the average life expectancy of the Arab World and Egypt is lower than that of Libya. It is also important to mention that the post-2011 conflicts seem to have a negative effect on life expectancy in Libya because the country has not significantly increased its life expectancy since then (only 1.8 years in the last 18 years). According to the latest data reported in 2018 for comparable countries, Turkey has the highest life expectancy, followed by Algeria. Considering life expectancy as an important goal of the health systems, it can be concluded that Libya has managed to increase its life expectancy.

Table 16. Life Expectancy at Birth, Total (Years)

Country Name	2000	2005	2010	2015	2018
Libya	70.9	71.9	72.0	72.1	72.7
Algeria	70.6	73.1	74.9	76.1	76.7
Egypt	68.6	69.4	70.3	71.3	71.8
Tunisia	73.2	74.2	75.0	75.9	76.5
Turkey	70.0	72.4	74.5	76.5	77.4
Arab World	67.8	69.2	70.3	71.2	71.8
MENA (excluding high income)	69.4	70.8	72.0	73.0	73.6

Source: Health Nutrition and Population Statistics, World Bank, 2020

The infant mortality rate is another important indicator of health status to compare the health system performance of countries. The rate is also a very strong determinant of life expectancy in a country. Preventing mortality in the early years of childhood has an important effect on prolonging life expectancy. When comparing the infant mortality rates of selected countries and Libya in Table 17, it can be seen that Libya has been one of the most successful countries in reducing its infant mortality rate over the past 18 years. Libya has reduced the infant mortality rate from 24.2 deaths to 10.2 deaths per 1,000 live births. This means Libya has averted 14 infant deaths per 1,000 live births. Turkey was the most successful country in reducing its infant mortality rate, averting 21.8 deaths per 1,000 births during the same periods. These figures simply suggest that Libya has been successful. However, it also important to say that the infant mortality rate as well as life expectancy are strongly affected by other socioeconomic and demographic characteristics and by education. For this reason, it may be biased to consider that success is solely due to a country's health system.

Table 17. Infant Mortality Rate (Per 1,000 Live Births)

Country Name	2000	2005	2010	2015	2018
Libya	24.2	19.8	14.3	11.4	10.2
Algeria	33.9	28.8	23.5	21.4	20.1
Egypt	37.2	29.5	24.2	20.0	18.1
Tunisia	24.9	18.8	15.8	14.8	14.6
Turkey	30.9	21.4	14.9	10.9	9.1
Arab World	43.9	37.7	31.8	28.1	26.5
MENA (excluding high income)	36.3	29.5	24.3	21.2	19.8

Source: Health Nutrition and Population Statistics, World Bank, 2020

Given that the causes of maternal deaths are largely preventable, the maternal mortality rate is often considered as an indicator of the accessibility and responsiveness of a health system. Libya's current maternal mortality is estimated to be at the same level as countries such as the United Kingdom and New Zealand, indicating good overall performance of the local health system in terms of emergency obstetric care (WHO, MoH of Libya & EU, 2017).

Table 18 compares the selected countries in terms of healthy life expectancy (HALE) at birth by gender. As shown in Table 18, Egypt has the lowest health expectancy for both sexes, but Libya comes in second.

Table 18. Life Expectancy and Healthy Life Expectancy (HALE) at Birth by Sex in 2016

Countries	Female	Female (HALE)	Male	Male (HALE)
Libya	77.59	65.47	72.62	63.00
Algeria	78.41	66.11	76.43	66.04
Egypt	74.98	63.54	69.44	60.64
Tunisia	80.46	68.32	74.58	65.02
Turkey	82.33	69.20	75.84	65.94
Morocco	76.44	64.38	73.55	63.58

Source: Global Health Metrics, Lancet (2018)

Equity in Finance

Equity is defined in terms of health care utilization and financing, and it is one of the primary goals of a well-functioning health care system. People use health care mainly due to their health care needs, and these needs are determined primarily by the diseases and their complexity. However, there are a number of factors that influence Health care utilization. An individual's decision to seek health care services and the amount of services he or she receives are affected by predisposing factors, which are the characteristics of the individual, facilitating factors, which are the ability of individuals to obtain health care services, and need factors that indicate the severity of the need for health care. Equity is considered a problem if health care utilization is affected primarily by enabling factors such as income, health insurance existence, geography, ethnicity, etc. (Andersen, 1995).

Fair financing in health systems means that the risks each household faces due to the costs of the health system are distributed based on the ability to pay rather than the risk of illness: an equitably financed system ensures financial protection for all. A health

system in which individuals or households are sometimes forced to impoverish themselves by purchasing needed care, or are forced to do without because of its cost, is unfair. This situation is characteristic of most poor countries and some middle- and high-income countries, where at least part of the population is insufficiently protected against financial risks (WHO_2, 2000).

Paying for health care can be unfair in two ways. It can expose families to large unanticipated out-of-pocket expenses, i.e., costs that could not be anticipated and must be paid out of pocket at the time of service use rather than being covered by some sort of pre-payment. It can also impose regressive payments, in which those least able to contribute pay proportionately more than those who are better-off. The first problem can be solved by minimizing the taxpayers' share of the system's financing, so as to rely as much as possible on more a predictable prepayment, unrelated to illness or utilization. The second problem can be addressed by ensuring that each form of prepayment – through tax revenue, social insurance, or voluntary insurance – is progressive or at least income-neutral, and related to capacity to pay rather than to health risk (WHO_2, 2000).

The level of Out-Of-Pocket health expenditures in selected countries is compared to assess the equity of the Libyan health system in terms of financing by using the latest figures reported by the World Bank (WB, 2020). It is important to see that the level of health expenditures is very high in the Arab World and MENA countries compared to other high-income developed countries. Having a higher level of health expenditures is the main characteristics of poor and less developed countries. Although Libya does not have the highest level of out-of-pocket spending, 29.7 percent of out-of-pocket health expenditure in total health expenditure is high and should be reduced. Turkey has been successful in reducing out-of-pocket health spending in the last 18 years. Table 19 indicates that there could be serious concerns in terms of financial equity in Libya, although not worse than in neighboring countries.

Table 19. Out-Of-Pocket Expenditure (% Of Current Health Expenditure)

Country Name	2000	2005	2010	2015
Libya	51.3	35.3	30.0	29.7*
Algeria	25.8	28.1	28.9	28.2
Egypt	62.5	64.6	62.6	59.5
Tunisia	38.6	42.1	42.1	39.6
Turkey	28.6	24.2	16.9	16.9
Arab World	37.6	34.9	33.0	31.4
MENA (excluding high income)	53.9	51.1	51.0	46.5

*Data for 2013, Libya's Health Profile, 2015. Source: World Bank, 2020; WHO_5

The per capita out-of-pocket health expenditures provided in Table 20 indicate that Libya has the highest per capita health expenditure with US$120.2 in 2010. This means that a person living in Libya is expected to spend more on health from out-of-pocket expenses than a person living in other selected Arab and MENA countries. It is also important to mention here that the purchasing power parity and total health expenditures of countries are different.

Table 20. Out-Of-Pocket Expenditure Per Capita (Current US$)

Country Name	2000	2005	2010	2015
Libya	125.5	75.0	120.2	..
Algeria	15.8	28.2	66.0	81.9
Egypt	45.3	40.6	69.8	107.5
Tunisia	43.2	72.6	102.6	106.1
Turkey	57.1	88.2	91.0	77.1
Arab World	43.5	48.6	82.0	109.9
MENA (excluding high income)	43.6	55.2	114.4	111.3

Source: Health Nutrition and Population Statistics, World Bank, 2020

Considering Libya has a national health system that finances health services from general revenue sources, it is arguable that the level of out-of-pocket spending in total health expenditures and per capita health expenditures should not be accepted as normal, and should be close to the figures of other countries that finance their health systems from general government revenues. However, if there are formal programs that protect the poor from catastrophic health expenditures, and target the poor to facilitate access to quality health services, then out-of-pocket health expenditures may be acceptable to the rich.

The constitutions of many countries in the Arab world clearly emphasize the role of governments in ensuring the provision of health care as a right for all citizens. However, citizens still benefit from inequitable health care systems. One component of this inequity is limited financial access to health care services (Saleh et al, 2014).

Responsiveness

Responsiveness is not a measure of how well the system is responding to health needs, and it may not be an appropriate indicator for measuring health outcomes, but it could be useful for assessing how the performance of the health system in relation to non-health aspects, in meeting or not meeting the population's expectations of how they should be treated by providers of of preventive, curative, or non-personal services (WHO_2, 2000).

Indeed, while overall health indicators in Libya are relatively satisfactory, the system has a number of shortcomings, particularly the quality of care, motivation of medical personnel, quality of nursing care and quality of nursing education, absence of guidelines for diagnosis and treatment of diseases, weakness in continuing professional training, and lack of a clear sector strategy based on health indicators to be achieved (EU, 2013). Health services were weak and did not meet the needs of the population, leading to distrust of the system despite some achievements. Many Libyans sought health care abroad, mainly in Tunisia. In 2007, the total amount spent by Libyans on medical tourism was estimated at US$100–200 million per year, although exact figures are not known (El-Taguri, 2007)

Improved Efficiency

Any health system faces two different efficiency issues: technical efficiency and allocative efficiency. Technical efficiency is concerned with how services are produced with limited resources, while allocative efficiency is concerned with what services are produced. Improving allocative efficiency requires changes in what is produced, which may impose very high costs on those involved in the production and consumption of the products to be reduced. The transfer of resources (people and money) from some activities to others—from high-tech services to primary care, for example—is often rejected (Roberts, Hsiao, Berman, & Reich, 2002).

It is also true that countries sometimes have to make a choice between efficiency and equity. For instance, serving people living in rural areas can be characterized as "inefficient," because more health services could be produced for the same amount of money in urban areas if equity was not offered. For this reason, Roberts et al. (2002) state: "Correct approach to efficiency: whether a nation's health system is effective in achieving its equity goals" (Roberts, Hsiao, Berman, & Reich, 2002).

Efficiency has become an essential dimension of the quality of health care services to the extent that, recently, resources have emerged as a fourth objective of the health system under the WHO framework. The Libyan health system is an excellent example of how inefficiency can hamper effectiveness, as in the case of reliance on high-priced brand-name drugs when the health sector has been unable to ensure their universal availability for years. Another manifestation of inefficiency would be the high number of non-professional human resources employed for various reasons in health facilities. The budgeting system, lack of autonomy in decision-making, low staffing levels, over-staffing, and inefficient use of resources are the main factors contributing to low efficiency (WHO, MoH of Libya & EU, 2017; WHO-ROEM, 2011)

3.2.2 Assessing Intermediate Health System Performance Indicators

As mentioned previously, achieving final outcomes of a health systems is only possible if the intermediate health system indicators as outlined in the framework are met. This section of the report seeks evidence on intermediate health system performance indicators by analyzing previous studies and reports on the Libyan health system.

The overall service availability index for Libya was 81%, indicating that potential access to health services was good in Libya. Although Libyan health system had good indicators in terms of availability of health facilities such as health facility density (2.8 per 10,000 population), health workforce density (76 per 10,000 population) and maternity bed density (13 beds per 1,000 pregnant women) compared to WHO targets. However, there were problems with equity, quality, and distribution, as well as with the quality and adequacy of basic medical supplies and medicines. The health workforce and the health information system were other major problems in the Libyan health system (WHO, MoH of Libya & EU, 2017).

Equity

Equity is best measured by analyzing individual-level data on key determinants of health status as well as barriers and problems in using and accessing health services. Since measuring equity is beyond the scope of this report, evidence of equity in health services in Libya has been collected through previously published articles and reports on the Libyan health system. Based on the results, it can be said that equity in health care utilization is a problem in Libya.

The geographic distribution of health facilities and the ongoing conflict in the country are the main causes of equity problems in health services. For instance, SARA Libya found that not all districts met health facility density targets set by WHO. The Benghazi and Sirt regions were behind the targets, as both were affected by the conflict and had many damaged or inaccessible facilities. Areas with inpatient bed densities above target had health facilities serving as referral centers for a number of neighboring districts. The report also found that a large majority of private sector bed capacity was located in one city, Tripoli. According to the report's discussions, there was a problem of distributional justice in terms of maternity beds by districts, as the report found that eight out of 22 districts had less than the WHO target of 10 maternity beds available per 1,000 pregnant women in Benghazi, Al Jabal Al Akhdar, Sirt, Al Jifarah, Azzawya, Wadi Al Haya, Murzuq and Ghat (WHO, MoH of Libya & EU, 2017).

Regarding equity in health services utilization in Libya, SARA Libya indicated some equity issues. It concluded the readiness indicators for delivery services at primary health care facilities and availability of emergency, obstetric and neonatal care in the districts

of Sirt, Wadi Al Haya, and Ghat were unacceptably low, at 9%, 36% and 24%, respectively. The private sector is considered the main provider of family planning services. Although antenatal care (ANC) coverage in Libya is high, availability and readiness of this service were limited at the national level, as nearly 50% of municipalities did not have a facility offering basic ANC service, indicating inequitable distribution of services (WHO, MoH of Libya & EU, 2017).

Quality and Safety

Quality has two main aspects: technical quality, which is defined relatively objectively by health care providers, and perceived quality, which can change according to the expectations of users. The quantity of services provided, however, is also an important aspect of health care quality.

Even if the Libyan health system is good in terms of numbers, it has some weaknesses in terms of the quality of health services delivered in health facilities at all levels. SARA Libya reported some issues closely related to the quality of health services such as (WHO, MoH of Libya & EU, 2017):

- There were shortages of well-trained staff, specialist medical doctors, essential medicines, equipment and diagnostic tests,
- Many patients sought treatment in other regions and districts since they are not able to meet their needs in their region and district,
- Some districts (Darnah, Sirt, and Al Jifarah) had very low levels of hospital and outpatient service utilization, while others (Nalut, Al Betnan, and Al Jabal Al Akhdar) had very high levels,
- Readiness scores (48%) for health facilities were low due to limited availability of guidelines (21%), trained staff (18%) and diagnostic services (40%).

In practice, however, primary health care suffered from poor maintenance and management. Almost all primary Health care centers were reportedly "down" for years prior to the revolution. The burden for primary health care fell on on secondary and tertiary health care centers, which were overburdened and also often inadequately maintained (NATO, 2013).

Safety is a major challenge for health care in Libya. There is a high prevalence of hospital-acquired infections, manifested by post-surgical wound infections, reports of high levels of multi-drug resistant strains, and the role of sepsis in neonatal and adult mortality in hospitals. There are many inherent challenges in implementing the medical

liability law, and some of the details of the law must be widely accepted by stakeholders. Regular data on the effectiveness of health services are not regularly collected.

Access, Availability, and Coverage

Another important intermediate performance indicator of the health system is access. Access can be defined as physical and effective availability. Physical availability shows how health care resources (beds, doctors, or nurses) are distributed across regions or population groups, while effective availability relates to how easily citizens can access health services. Cost, travel time, poor service, etc. can be the main causes of poor availability, and all of these are related to the financing, payment and organization of the system (Roberts, Hsiao, Berman, & Reich, 2002).
SARA Libya reported that physical availability, based on overall numbers, is good in Libya. For instance, the density of health facilities was 2.8 facilities per 10,000 population, which is higher than the international WHO target. However, there are evidence that actual availability is limited. The functional density of inpatient beds in Libya was 15 beds per 10,000 population, well below the target value of 25 beds per 10,000 population. Primary health care facilities were mostly clustered in areas of high population concentration, and some primary health care facilities did not have pharmacies. All districts had at least five facilities offering immunization services, and these facilities had adequate stock levels. Utilization index scores by districts ranged from 5% or 6% in Al Jifarah and Wadi al Haya to 89% in Al Wahat/Ajdabia. Some districts (Ghat, Sirt, Al Jifarah) did not have sufficient or properly functioning diagnostic imaging and laboratory services and facilities. The overall availability of a full package of essential medicines was low in both hospitals (41%) and in primary health care facilities (10%) and medical stores (13%) (WHO, MoH of Libya & EU, 2017).

All Libyan citizens have the right to use health services free of charge. However, underfunding of the health system and the poor quality of the health services provided lead people to use private health facilities and pay out of pocket for the medical supplies they need (29.7% in 2013). In this respect, it can be said that the effective coverage of the health system in Libya is low.

3.2.3 Assessment of the Main Aspects of Libyan Health System: Building Blocks or Control Knobs

Following the framework in Figure 6, this section seeks evidence on the root causes of poor final and intermediate health system performance indicators based on previous national and international reports and publications.

Governance and Regulation

Libya's complex political framework has had a negative impact on the health structure by creating a fragmented health system (WHO_4, 2017). The capacity of the Libyan MoH to perform the health stewardship function at the central level needs to be developed, while its capacity at the local level needs to be improved (WHO-ROEM, 2011).

Libya is still struggling to define clear sector strategies for health and education due to recentralization process decided in 2006. The general trend in both sectors has been to increase the share of the private sector in providing health care and education. The government aims to reduce overstaffing in both sectors, while increasing workers' pay and improving the quality of services (EU, 2013).

Public health services in Libya have been heavily affected by the crisis due to ongoing hostilities and governance failures. In conflict-affected areas, armed groups have carried out attacks on medical facilities and personnel, including bombings, theft of medical equipment, assaults on medical professionals, and interference with medical work. In addition, the lack of an effective public administration has resulted in poor service provision due to lack of resources, qualified staff, trained personnel, equipment, and supplies (OCHA, 2020).

In spite of the apparent wellbeing of public health in Libya, the Libyan health system is an unresponsive, inefficient and ineffective system which lacks SMART (Specific, Measurable, Achievable, Realistic, Timely) goals and/or objectives. Most of the improvements that have taken place over the past few decades were due to public actions outside the health sector rather than a clear vision from within the health system. These public measures include education especially for women, food subsidy policies, and increased purchasing power (El Taguri & Nasef, 2008).

Health Financing

Although health services in public health facilities are provided free of charge to all citizens, it is estimated that about 30% of health expenditure are due to out-of-pocket expenses paid for private care in the country or abroad (WB, 2020).

Libya has good natural resources to pursue universal health coverage (UHC). However, improper planning and misuse of valuable resources have prevented it from taking advantage of the global push toward UHC. For example, in 2000, the government launched a major decentralization project, which included the abolition of several

ministries (including health and education) and the transfer of important powers (e.g., human resource management, financial independence, and planning) to regional authorities. Overstaffing in the public sector was accompanied by inefficient human resource management policies and poor workforce planning (e.g., poor skill mix). Lower salaries and unclear accountability structures led to widespread absenteeism and inefficient use of human resources (Saleh et al, 2014).

Organization and Delivery

The organization and delivery dimension shows how well a health system achieves desired outcomes by providing effective, safe, and quality health interventions to those who need them, when and where needed, with minimum waste of resources. Utilization might be one of best indicators providing any evidence on the appropriateness of organization and delivery aspect (WHO_1, 2007).

SARA Libya indicates that there may be serious problems in the delivery of health services and the organization of health care facilities in Libya. The overall utilization score for all health care facilities was low (36%) and its level in some districts (Al Jifarah and Wadi al Haya) was as low as 5%. This means that the current delivery systems do not meet the needs of people at the right place and time. All of these problems can be seen as evidence of access, quality and equity problems in the delivery system in Libya. The report also found that the overall readiness score for delivery services provided by PHC facilities was 20% while this score was 54% for hospitals. The main reason for these relatively low scores can be attributed to the limited availability of guidelines (40% for hospitals) and trained staff (35% for hospitals) (WHO, MoH of Libya & EU, 2017).

SARA Libya showed that 17% of hospitals and 20% of PHCs (polyclinics, health centers and units) were closed. The availability and readiness of services in PHCs and hospitals was significantly low. The lack of readiness was due to acute shortage of life-saving medicines, medical supplies and equipment, as well as a severe shortage of human resources, particularly physicians, nurses, midwives and specialized technicians. These shortages were critical at the primary care level. As a result, referral and tertiary hospitals were overloaded with patients suffering from common illnesses and were unable to meet the demand (WHO_4, 2017).

The availability of preventive and curative services for children under five is also extremely limited. Over one-third of municipalities are unable provide child health care to their residents, and even where primary health care facilities do provide services, the supply is very limited. There are significant gaps in integrated management of childhood illnesses and essential newborn care. The three main reasons for not being able to access

Health care when needed were: (1) lack of medical staff in general (43%), (2) no/lack of money to pay for care (37%), and (3) lack of medical supplies (OCHA, 2020).
In post-conflict situations, there is a marked deterioration and damage of the health care system. Libya experienced a major armed conflict in 2011 that resulted in heavy damage to the health system. Of 216 health facilities, 62 (28.7%) suffered structural damage. Of those damaged, 11 (5.1%) were completely destroyed and 51 (23.6%) were partially damaged. Primary health care centers accounted for 49 (22.7%) of damaged facilities, followed by Emergency & Accident Hospitals. The extent of the damage varied from region to region and even among provinces within the same region. Transportation, communication, and patient information systems within the Libyan health system were severely hampered, particularly in primary and emergency services. This combined with direct damage to the buildings and the infrastructures (Daw, El-Bouzedi, & Dau, 2016).

Health Workforce

Human resources assessment, production and management are a high priority for the health sector. There are no clear plans to match needs with number and categories of health personnel in Libya. The lack of accreditation system, weak inter-sectoral collaboration, lack of linkage between continuing medical education programs and career development, and inadequate management training are other factors that hinder health care delivery (WHO-ROEM, 2011).

Access to essential health professionals is a key component of health service delivery. Acute shortages and an uneven geographic distribution of health workers are common problems that lead to unreachable or unequal access to essential health services. WHO measures the density of the core health workforce to determine whether there is a shortage of health workforce in a country's health system. The core health workforce was defined as only basic medical professionals: physicians, non-physician clinicians, clinical officers, nurses and midwives. SARA Libya reported the overall density of basic health workers in Libya was 76 per 10,000 population, which is more than three times the target which is 23 basic health workers per 10,000 population, and well above the recommended 45 basic health workers per 10,000 population. This result indicates that there is no shortage of basic health workers at the national level (WHO, MoH of Libya & EU, 2017).

SARA Libya found an uneven distribution of health workforce across the districts. For instance, health workforce density in Sirt was relatively low compared to other districts. Seven districts had readiness scores below 50%, and it was discussed that these low scores were mainly due to a lack of trained staff and essential guidelines in the health

facilities. Of the 12 municipalities offering delivery services, only Aujala achieved a readiness score of 60% while the other readiness scores were all below 40%, with three municipalities (Albawanees, Daraj and Marada) scoring as low as 6%, all well below the acceptable level of 80% (WHO, MoH of Libya & EU, 2017).

A capable, competent and motivated workforce is essential to the success of these reforms. Consequently, the training and regulation of health professionals, including physicians, nurses, pharmacists, dentists and other "allied" health professionals, are among the highest priorities of the reform agenda (Mahmud, Ali, Salhin, Mohamed, & Elkhammas, 2013).

Medical Products and Technologies

A well-functioning health system ensures equitable access to essential medical products, vaccines and technologies that are of assured quality, safety, efficacy and cost-effectiveness, as well as scientifically sound and cost-effective use (WHO_1, 2007). The Libyan pharmaceutical sector is predominantly public, with the government aiming to provide medicines to all citizens. This vision is embedded in the orientation of the country's health care system. The institutional responsibilities of the partners involved in the management of medicines and medical supplies have not been clearly defined. Until recently, a budget was allocated for the purchase of medicines, mainly through imports. Selection, procuremen, quality control, regulation and use of medicines were serious challenges. Because of the problems with supply management and regulation of medical products, central stores and hospitals sometimes had more drugs than they needed, but expired on site before being supplied to peripheral health facilities. Indeed, the disposal of expired medicines has become a major problem. However, thanks to recent actions, the management of medicines and medical equipment is moving in the right direction (WHO-ROEM, 2011).

SARA Libya has called for urgent action to restore the supply of essential medicines and improve the availability of diagnostics, as these two areas represent both the greatest need and the best potential for improvement for hospitals and primary health care facilities. The report indicates that the availability of delivery equipment is relatively good in hospitals (80%) and low in primary health care facilities (46%). Hospitals and primary health care facilities suffer from a lack of essential medicines for delivery services, with domain-specific readiness scores of 62% and 4%, respectively (WHO, MoH of Libya & EU, 2017; WHO_3, 2018).

All districts in Libya have at least one facility that offers laboratory and diagnostic imaging services. However, Nalut district had the highest ratio of facilities offering

imaging services to population, and it was lowest in Al Jifarah and Sirt districts. The districts of Wadi Ashati and Ghat had only a small number of available health facilities with low readiness scores, which could be an indicator of limited service delivery in these districts. Wadi Ashanti and Wadi Al Haya districts did not have primary health care facilities with dispensary pharmacies. Hospitals with pharmacies were present in 20 districts, but Wadi Al Haya and Ghat did not have functional hospitals. Nationally, at least one public health facility with a dispensary pharmacy was available in all districts except Wadi Al Haya (WHO, MoH of Libya & EU, 2017; WHO_3, 2018).

SARA Libya estimated that Essential Drug Availability Index scores were highest in hospitals (41%), followed by warehouses (13%) and lowest in primary health care facilities (10%). The overall scores indicate a severe shortage of medicines. The Basic Medicine Availability score for hospitals (20 medicines) was 44%, while the General Medicine Availability score of 41% for the hospital indicates availability of a set of 122 medicines. For PHC facilities, the Basic Medicine Availability was 16% (20 medicines), while the PHC General Medicine Availability score (111 medicines) is 10%. Of 101 municipalities, only 50 municipalities had PHC facilities with in-house pharmacies for the provision of essential medicines, while the remaining 51 municipalities did not have public pharmacy services. Of these 50 municipalities, eight reported having no stocks available at all, while another eight municipalities had a general medicine availability score below 5% (WHO, MoH of Libya & EU, 2017).

SARA Libya also showed that the time from order to delivery of pharmaceuticals was less than two weeks for 34% of the PHC facilities. However, other PHC facilities reported having to wait for more than two months to restock their stores with pharmaceuticals (WHO, MoH of Libya & EU, 2017).

The drug availability score by treatment category also changed. The overall score for drug availability across eight treatment categories (IV fluids, mental health, maternal and neonatal, cardiovascular, communicable/anti-infective, general, surgical, and diabetes) was 40%. IV fluids were found to be the most widely available (73%). But drug availability scores for the following treatment categories: mental health, maternal and neonatal, cardiovascular, communicable/anti-infective, general, surgical, and diabetes treatment categories were below 50%. The lowest score was for mental health medications, at 14%. Medicine availability in hospitals was consistently low in all treatment categories, suggesting a general failure in the pharmaceutical supply chain (WHO, MoH of Libya & EU, 2017).

A recent research on Libyan health system highlights the following issues: Libya had zero stock of HIV drugs; TB drugs were available for 3 months; insulin for 3 to 5 months; only 20% of the supply of specialized drugs for cancer patients; and there was a 40% shortage of trauma care medicines and supplies (Zarocostas, 2018).

Health Information System

Health information refers to the production, analysis, dissemination and use of reliable and timely information on health determinants, health system performance and health status to make sound decisions. A health information system with a strong human resource component can help build an evidence base for planning the availability and accessibility of needed health workers in the right place, at the right time and in the desired quality (WHO, MoH of Libya & EU, 2017; WHO_1, 2007).

A properly functioning health information system has been lauded as the cornerstone of any effective and equitable health care system. Unfortunately, health systems in many low- and middle-income countries are characterized by poor health information infrastructure, which reduces their ability to respond to challenges and monitor system performance in a timely manner. This theme is common to most low- and middle-income countries, including many in the Arab world (Saleh et al, 2014).

Since the onset of the conflict in Libya, the country's health information system has suffered setbacks in its capacity to provide routine reporting, partially due to movement of staff and population, and partially due to unreliable communication systems and the inability to conduct regular supervision. A more thorough understanding of the functioning of the health information systems in place in public health facilities would therefore be useful. SARA Libya reported that staff and infrastructure were sufficient for manual reporting, but that access to computers and the internet was limited to 36% of hospitals, and only 28% of hospitals had computerized record-keeping. Only 4 out of 80 hospitals used ICD-10 classifications in their reporting (WHO, MoH of Libya & EU, 2017).

Prior to the conflict, 23 sub-centers were responsible for collecting, collating, and transmitting data centrally to the Ministry of Health through electronic reporting. Although there were significant gaps in the collection and transmission of information, data on disease burden, service utilization, and outcomes were available to some extent. The central level was to use all the data received to publish an annual report. Since 2013, however, no such report has been published due to some difficulties. Of 1,656 primary health care facilities, only a limited number were reporting the data. Reasons for this lack of reporting include the closure of some hospitals and primary health care centers,

the closure of most sub-centers due to lack of training, unavailability of human resources, limited access to the internet, and the use of old versions of data recording tools and formats (WHO_4, 2017).

Another challenge for the Libyan HIS is the lack of training of resource persons in information offices, hospitals and district health administration. Existing data are seldom used for decision making, as the Libyan system and Ministry of Health have limited capacity in this respect. Although WHO supported the MoH in the strengthening of a comprehensive CRVS system, there is still a need for capacity building (WHO_4, 2017).

Health care informatics expertise is inadequate. The information and telecommunication infrastructure in health care facilities is weak. Most hospitals, primary health care centers, medical schools, and other health care facilities lack the infrastructure necessary to take advantage of e-health solutions. For example, hospital and health facility records and information are not computerized. Vital statistics data need to be improved. Cause of death is not clearly reported (WHO-ROEM, 2011).

Behavior

This involves the design, implementation, and evaluation of programs intended to change individual behaviors in order to improve health system performance. A variety of approaches in the areas of information, education, and communication (IEC) and social marketing are relevant (Roberts, Hsiao, Berman, & Reich, 2002).

There is a belief that public health care facilities provide poor quality health services, and people are not able to access to the most basic and essential medicines in the public sector. This belief drives people to seek treatment abroad or make greater use of private health care facilities. Private health care facilities in Libya are better positioned to provide quality and effective health services by offering a wide range of services due to the poor management and inadequate equipment of public health care facilities in Libya. This increases out-of-pocket payments for health, and reduces health equity, while increasing the reliance on treatment abroad.

4

THE RESEARCH ON IDENTIFYING THE ROOT CAUSES OF HEALTH SYSTEM PROBLEMS

As mentioned several times, this report aims to propose a set of reform ideas and priorities in the health sector. It aims to develop more relevant reform proposals by drawing on international experiences and best practices and by basing reform proposals on the current problems and obstacles in the Libyan health system. To achieve these objectives, it is necessary to obtain data from key stakeholders in the Libyan health system on problems, obstacles, and possible solutions. To this end, three different studies were planned and conducted: a literature search, in-depth interviews, and a health survey.

4.1 The Research Methodology

The methodologies of three different studies are described under the following sections.

4.1.1 Desk Research

The objective of the literature research (desk research) was to identify international best practices and document lessons learned from other countries' experiences. A comprehensive literature search was conducted using the following keywords: '*health reforms, health reform experience, successful health systems, good lessons learned from health reform experiences, health reforms in Turkey, etc.'* A special effort was made to obtain and review reports and publications on health reforms and health reform experiences of various countries published by WHO, EU, WB and other international organizations. A total of 23 country health reform experiences were reviewed to draw lessons to improve the current health system in Libya. The summary reviews are provided in Appendix 1.

4.1.2 Focus Group Interviews

A qualitative approach with semi-structured interviews was used to gather the views of key informants. The open-ended questions used in the interviews to assess the current Libyan health system are presented in Appendix 5. A convenience sample was used to collect opinions. Interviewees in the sample were identified by an experienced Libyan

expert working in Libya both as a health professional and as a policymaker in the Ministry of Health. The experienced and information-rich interviewees were selected from those working either in the health facility level (both public and private) or within the Ministry of Health. The online interviews were conducted with the participation of international and local consultants in December 2020 and January 2021. Interviewees were asked to rate the Libyan health system on six main aspects of health systems, namely; delivery, finance, human resources, health information system, medical supplies, and leadership and governance. Additional questions and their recommendations were also asked based on the interviewee's field of expertise or certain issues raised during the interviews.

The views of participants at the brainstorming meeting held on November 10, 2020 were also considered, and this brainstorming meeting was considered part of the focus group interviews in the qualitative research of this project. The views of four international and four Libyan participants were recorded at this brainstorming meeting, and were used to develop more tailored and implementable health care reform proposals.

In the end, the views of 25 information-rich international and national interviewees on the Libyan health system or international best practices were recorded, transcribed and then analyzed. Conventional content analysis was used to code categories to be derived from the recorded video files and textual data. Six WHO Framework building blocks or six health system pillars were assigned as parent codes (or main themes), and sub-codes were created under each the six building blocks based on the transcribed videos and texted files. The main purpose of the grouping and coding was to facilitate data analysis. The sub-codes were intended to show the relative problems and obstacles, as well as the root causes of the main problems observed in the six building blocks of Libyan health system. The units of analysis were words or concepts, themes, and the numbers of subjects who described the same concept or themes. Participants were coded numerically, and any information that could be used to show the identity of the key informants was not reported during the findings.

4.1.3 Health Survey

The health survey aimed to collect empirical data and information on the Libyan national health system to better understand its capacity/limitations in meeting the demand for health services and its responsiveness to the country's health challenges. To this end, a health survey was designed and conducted with a convenience sample of relevant stakeholders who were mainly Health care providers in Libya, and representatives of unions, associations, or non-governmental organizations. Based on a comprehensive literature review on health system assessment tools and approaches, a

sample questionnaire consisting of 93 questions (Appendix 4) aimed to assess six main aspects of the Libyan health system in terms of quality, accessibility, equity, transparency, corruption, affordability, etc. There was no attempt to verify its validity and reliability since this questionnaire was developed to assess the current health system in Libya, and no specific questions were imported from another questionnaire. However, there is a high level consistency among respondents' answers. In addition, participants' views on their experiences with the Libyan health system and the problems and priorities of the health system in Libya were also collected. Finally, the views of 83 participants in the convenience sample of the health survey were analyzed by using descriptive statistics such as frequency and percentage distributions.

4.2 The Findings

This section summarizes the findings of the literature search, qualitative research, and quantitative health survey.

4.2.1 The Lessons from Best International Practices in Health

It is obvious that many countries that are reforming their health system are searching for the best approach. However, there is single model that can be applied to all countries to solve their health problems. Country characteristics, health system history, tradition and many other factors play vital role in determining the success of proposed reforms. Some countries are considered to have succeeded in transforming their entire health care system such as Turkey, or in solving problems of equity, access or efficiency by implementing new methods such as Italy, Ireland, etc. (Gottret, Schieber, & Waters, 2008).

Wealth alone does not guarantee success. The health systems of the United States and Canada spend a larger share of their GDP, but rank very low in the WHO report and Europe Health Consumer Index, respectively (El Taguri & Nasef, 2008). There are many studies comparing health systems around the world, both for developed and developing countries. The reason for the growing interest in these studies is the fact that reforms and experiences of other countries could be a laboratory for innovative policies for health systems in other countries (Okma et al, 2018).

Gottret et al. (2008) stated that evaluating good performance and selecting country case studies can be categorized into two groups, ranked by order of importance. Criteria in the first group included: (a) improvements in health care coverage, (b) applicability and relevance to other low- and middle-income countries, (c) large-scale initiatives, and (d) availability of information and data. The criteria in the second group were: (a) health indicators and outcomes, (b) the relation between expenditures and outcomes. The authors concluded that achieving desired health outcomes (life expectancy, infant

mortality rate, maternal mortality rate) by using health resources more efficiently and protecting citizens from catastrophic health spending (measured primarily by out-of-pocket payments) determined the success of the proposed health reforms, and countries that could be considered as having and implementing successful reforms were selected as case studies to draw lessons for other countries in need of health system reform. Based on these criteria, a fairly heterogeneous group of low-, middle-, and upper income countries (Chile, Colombia, Costa Rica, Estonia, Kyrgyz Republic, Sri Lanka, Thailand, Tunisia, and Vietnam) were considered successful. They have achieved remarkable health outcomes in terms of health expenditures and their health inputs in terms of hospital beds and number of physicians per 1,000 population. All of these countries stand out for their ability to raise revenue, their public-private financing mix, and their financial protection relative to the world average

Braithwaite and others shared the success stories from 60 countries around the world. Despite constraints facing health reformers everywhere, each country was able to share a success story—defining how their case was managed, what services were affected and ultimately how patients, staff, or the system as a whole benefited. The authors looked at a wide range of reforms covering policy, care coverage and governance; quality, standards, accreditation and regulation; organization of care; to safety, staffing and resources; technology and IT; and the practical ways in which stakeholders forged collaborations and partnerships to achieve common goals. They concluded that common factors related to success included the 'acorn to oak' principle (a small-scale initiative can lead to system-wide reforms); the 'data to information to intelligence' principle (the role of information technology and data is becoming increasingly critical to providing efficient and appropriate care, but it must be converted into useful intelligence); the 'many-hands' principle (collaborative action among stakeholders is essential); and the 'patient as pre-eminent player' principle (placing patients at the center of reform design is critical to success) (Braithwaite et al, 2017).

Developed countries in particular are struggling with different problems in their health care systems than developing or less developed countries, mainly due to their aging populations. These countries are exerting considerable effort to combine health and social services and to ease the burden of social care for years. These countries are adopting a variety of approaches to the provision of health and social services. What almost all of them have in common is that they have recently reformed their health or social care systems, or are in the process of doing so. However, it is obvious that differences in history and context make it notoriously difficult to transfer lessons from other countries (Robertson, Gregory, & Jabbal, 2014).

The important question here to ask here is "what have these countries done to reform their health care systems?". According to Gottret et al. (2008), many countries share a

common experience: they have recognized the considerable amount of time it takes to expand health care coverage and have committed to doing so. Their success has been fostered by political stability and economic growth and buttressed by sound planning, institutional strengthening, and financial investments in human resources, physical infrastructure, and information systems. The different paths taken by the countries depended heavily on historical factors, as well as the political economy and institutional arrangements in the individual countries. A key question remains, *"since health systems and health reforms are so country-specific, can a common set of enabling conditions be found in successful countries, or are generalizations impossible?"*. It is perhaps clear that significant changes in coverage would have to be accompanied by serious reforms in delivery systems. The sequencing of delivery system changes with financing reforms has been an important element in all the reforms. Physical infrastructure and human resources for health have gone hand in hand. Several of the countries, perhaps most notably Thailand, have implemented advanced human resources for health policies to staff rural areas. The implementation of modern procurement techniques, provider payment systems, and risk-sharing mechanisms has also been an important element of all reforms. Financial resources for health have increased in these countries, but most have curbed cost escalation through prospective payments and other supply-side risk sharing approaches. Pharmaceuticals have also been subject to reform, given their high share of total and out-of-pocket health spending, in terms of essential drug lists, prices, and practice patterns (particularly in the former Soviet Union) (Gottret, Schieber, & Waters, 2008).

Universal health coverage is usually accepted as an ultimate goal of many health systems around the world. This is because it protects people against many health risks as well as financial burden of disease. Sharing and disseminating the experiences of countries that have attained this ultimate goal is important to contribute to the global effort of sharing lessons that are potentially useful in addressing policy concerns regarding the design and implementation of radical reform strategies. Vietnam is one such country whose experience has transformed its health system by introducing financing and delivery reforms in the last two decades. Countries as diverse as Brazil, France, Japan, Thailand, and Turkey, which have achieved universal health coverage (UHC), demonstrate how UHC programs can serve as vital mechanisms to improve the health and well-being of their citizens, and lay the foundation for economic growth and competitiveness grounded on the principles of equity and sustainability. Lower- middle-income countries face multiple constraints to expanding health coverage, such as limited financial resources from public and private sources, or low quality of care and productivity of services (Barroy, Jarawan, & Bales, 2014).

Dominis et al. (2018) used the five control knobs framework to track the reforms efforts in five countries. Then, they reported that the major reforms selected by the Central Asia countries focused on three of the five control knobs (financing, regulation, and behavior). In the context of health financing, any work on benefits packages goes

beyond costing and financing and requires the integration of reforms in the other control knobs as well as service delivery mechanisms and the use of evidence and information. Another key initial step was the introduction of diagnosis-related groups to improve hospital efficiency. The use of diagnosis-related groups began to facilitate the transfer of hospitals to less expensive primary care centers, precipitating the need for increased clinical capacity in primary care. Reflecting on the role of PHC in driving reforms, many experts who participated in the virtual focus group noted an important link between system strengthening and outcomes. Indeed, health system strengthening requires improved service delivery to succeed and, conversely, improved service delivery needs health system strengthening to be sustainable. The shift to primary health care has also led to other improvements in service delivery, including the introduction of evidence-based medicine, the development of quality improvement mechanisms, the integration of vertical systems and programs, and the extension of services to population and community (Dominis, Yazbeck, & Hartel, 2018).

Although some efforts are underway to integrate primary and hospital care in Asia, overall care delivery remains fragmented and diverse in terms of the sharing and availability of electronic medical records, patient registries, and empowerment of primary health care providers to treat chronic illnesses. The primary care sector requires stronger and more effective initiatives targeting specific diseases, particularly chronic conditions such as diabetes, hypertension, depression, and dementia. This can be achieved through integrated care – a health model of care that involves the delivery of collaborative care. To successfully implement an integrated care policy, key stakeholders must have a thorough understanding of the high-risk patient population and the resources needed to address the impending demographic changes in the population due to the extremely rapid increase in the rate of in the aging population in Asia (Tham et al, 2018).

To learn from other countries, it can be very important to consider some of the factors shaping countries' systems. These factors are ideas (or values), interests and institutions. Ideas (or values) are important. Of three main values, the first, hierarchical collectivism, refers to the collectivist traditions of northwestern Europe, with social policy based on solidarity and equality. Second, competitive individualism assumes that the allocation of goods and services is based on individual demand and competing suppliers, with a limited role for the state (often seen as characteristic of the United States and the United Kingdom). Third, the sectarian orientation is characterized by segmentation into groups with strong ideological preferences, such as religious sects (the United States also has a fairly strong sectarian tradition). It is also possible to distinguish between (semi-) corporatist (e.g., Germany and Holland), (semi-pluralist (e.g., the United States and the United Kingdom), and exclusionary (e.g., the military dictatorship in Chile) modes of action. In the latter, powerful governments exclude certain groups from decision-making process (Okma et al, 2018).

Another study shared the universal health coverage reform experiences of 11 countries and provided some key messages to other countries at all stages of UHC. Some countries aim to achieve UHC through national insurance systems that purchase services from public and private providers, while others, such as Bangladesh, Brazil, and Ethiopia have worked to provide greater access to services through the public delivery system. While each country's health system has its own history and faces its own set of challenges, each country's experiences offer valuable insights into some of the common challenges and opportunities being faced (Maeda et al, 2014).

Success is defined primarily by higher life expectancy, lower health care spending and coverage of the majority of the population against the financial risks of disease and disability (Gottret, Schieber, & Waters, 2008). It is clear that some countries have really high life expectancy, health insurance coverage and lower out-of-pocket payments by spending more money on their health systems, as is the case in many developed countries, while many developing or underdeveloped countries have higher life expectancy and health insurance coverage but higher out-of-pocket payments by spending less money on their health system. For this reason, it is necessary to examine the reforms that enable these countries to successfully change their health systems. There is no single viewpoint or criteria for judging whether a country has been successful in developing better, implementable health care reforms, and success may depend on the severity or variability of the problems a country's health system has witnessed and faced. Appendix 2 also presents countries and their successfully implemented health system reform proposals.

As shown in Appendix 3, almost all of the selected successful countries were able to change their previous health financing systems to protect the majority of their citizens from the negative effects of illness and disability by establishing mandatory or statutory universal health coverage. As the review of the best evidence from successful countries shows, there is no gold standard for health sector reform in any country, and it seems irrational to copy a system in one country to make another country's health system successful. There are some countries considered successful in delivering health services even if the public or the state is the sole provider, like Sri Lanka, while other countries are considered successful in delivering health services with greater use of the private sector, such as in many European countries and Japan. Some countries have been successful in assigning responsibility for financing and delivering health services to the same authority (usually the ministry of health), such as Vietnam and Costa Rica, while others have separated the purchasing and delivery functions by introducing a separate health insurance fund and purchasing health services from both public and private providers, as in many European countries, including Turkey. Some countries have succeeded in organizing health care services in a centralized manner, such as the United

Kingdom and Turkey, while others have succeeded in decentralizing health care services by devolving many responsibilities to regional authorities, such as Italy, New Zealand and Ireland. Some countries have succeeded in limiting the role of local authorities in providing and financing health services, like Turkey while others have succeeded in increasing the role of local authorities in the provision, management, and financing of health services, like Sweden. All of this evidence indicates that Libya needs to determine its own direction and health system reforms by considering its own history, past health system and reform experiences, its own capacity, demographic and country-specific factors, and considering the experiences of other countries. Health sector reform in Libya can be evolutionary or revolutionary depending on the severity and variability of health and public administration problems in the country. But as discussed in the section of qualitative research findings, there are many serious health and public administration issues related that should be considered in reforming and changing health system in Libya, and these issues could lead Libya to accept revolutionary reforms.

4.2.2 The Findings of Qualitative Research

The findings related to the views of key informants were reported under the six components of the Libyan health system and their recommendations as separate subheadings. Key informants mentioned and sometimes repeated the most relevant problems and obstacles. As presented in Table 21, 641 items were stated by 21 Libyan key informants during the online interviews and health brainstorming meeting. The key informants made 179 recommendations regarding different aspects of the health system in Libya. In addition, the most frequently stated problems or obstacles were related to "organization and delivery", "health workforce", and "governance and leadership". These findings simply indicate that the majority of problems in the health system in Libya were observed or experienced in the delivery of health services, the health workforce, and the governance and leadership of the health system. But it does not mean this does not mean that problems with other aspects of the health system are any less serious or important.

Table 21. Distribution of Statements by Six Building Blocks Coded as Parent Codes

Six Building Blocks	Segments	Percentage
	641	**100.0**
Governance and leadership	94	14.7
Health Financing	32	5.0
Organization and delivery	124	19.3
Health workforce	115	17.9
Medical products and technologies	73	11.4
Health information system	24	3.7
Recommendations for reform proposals	179	27.9

Governance and Leadership

Governance and leadership aspect involves the development of strategic policy frameworks to enable the health system as a whole to function effectively, efficiently, and responsively through sound, transparent and accountable decision making. The views of key informants on governance and leadership aspect were categorized into 13 groups. Although some of these categories, such as strategic vision, planning or regulation, could be grouped into one category, it was preferred to report these categories separately to describe the issues in more detail or to better describe the health system as a whole.

As reported in Table 22, corruption was the most frequently identified issue in 8 texted documents when key informants were asked to describe how the health system in Libya was governed, managed, and regulated or to describe more relevant problems and obstacles. Leadership and support, governance, and strategic vision were the other most frequently reported issues under the governance and leadership aspect.

Table 22. Sub-Codes and Frequency of Segments and Documents Containing Sub-Codes

Governance and Leadership	Segments	Percentage	Documents
	94	**100.0**	**21**
Corruption	20	21.3	8
Leadership and support	18	19.2	8
Governance	10	10.6	6
Strategic vision	9	9.6	7
Decentralization	8	8.5	4
Planning	7	7.5	4
Political instability and sustainability	7	7.5	4
The role of government	4	4.3	4
Coordination	4	4.3	3
Management and administration	3	3.2	3
Accountability	2	2.1	2
Economy	1	1.1	1
Regulation	1	1.1	1
Documents with code(s)	-	-	14
Documents without code(s)	-	-	10
Analyzed documents	-	-	24

Corruption was reported as one of the most important problems in the Libyan health system. Key informants mentioned corruption in aspects related to medical supply and health workforce, but they also believed that the main cause of corruption was related to the governance and leadership of the overall health system. Using the words of the key informants, the issue of corruption was defined as following:

"…. The Libyan health system has been facing a lot of problem for years. Part of the problem is not only related to the Ministry of Health, but the country as a whole. There is a lot of corruption, conflict, lack of health education, and other problems [10]. …. The MoH is interested in its own benefits, it is selfish, it has commissions, and a lot of corruption. They have brand new machines, but they do not work well. In the south region, I have been told there are seven CT Scan machines, but only one works properly. Because there are no human resources to run them. There is a lot of corruption [1]. ……There is lack of central planning. No good planning. Things are corrupted [2]. "

Leadership and support for previous health care reforms were also questioned in the interviews. Previous health reform activities have not worked as expected. Based on the views of key informants, it can be concluded that health reform proposals failed because of lack of support for the reform proposals or the way in which the leaders, managers or people expected to make the changes were selected. When asked about the reasons for the failure of attempts to change heath system, key informants explained in these words:

……. We were in transition period with our government and we had very little money. And no access to money. But I think the situation got worse. We had a lack of support from senior management. …….. When one of their close relatives or friends try to make a contract with the Ministry of Health, they are either corrupt and they have planned to buy counterfeit medicine in Libya, and this request was refused. Unfortunately, the head of the department was behind it. Because his friend, the chap brought the medicines. The Prime Minister and other parliaments were very dissatisfied. The medicines were bought without the approval of the minister. We did not have the support. We had the exact opposite [3]. Leadership is important. Leaders should have to be high-quality. Leadership must be there to say: this is my strategy. When you have a strategy, it is easy to make improvements. All this requires leadership. The reason leaders failed in Libya is because they didn't take the time to strategize and plan. They do not give them enough support and everything. That is why they failed [5]. Leaders or managers are selected on the basis of relationships, tribes, and sometimes affiliations [21]. Leadership issue is due to inappropriate selection criteria [18]"

Issues related to governance and strategic vision are among the most frequently mentioned factors affecting health system governance and leadership. Some key informants identified leadership capacity and training as the main causes of poor governance and strategic vision. In their own words, these aspects were described by key informants as follows:

> *" The health system in Libya suffers from poor training in management and good governance. The system is dysfunctional [14]. I think health reforms should start with governance. There should be good governance. We need more transparency in health sector spending. We need to explain what we are spending to convince people. We need to remove the idea of corruption from their minds when they think of the health sector. Health is a priority sector. It has become more important, especially after Covid-19. We get different opinions, even from the MoH itself. We still do not have a strategy or vision which can improve health system in Libya. I can assure you that if we have a clear vision, a clear map, or roadmap to improve the health system, it will receive a lot of support from the political level. In fact, we want to have more organized system in the health sector in Libya, starting with strengthening the capacity for policy formation at the ministry level to a clear vision between the ministry and local branches at the district and regional level [8]. There were no systematic efforts to reform health system in Libya. There is no real plan. There is no comprehensive vision [9]."*

In the past, Libya used to have a centralized health system. But there were some attempts to make the health system more decentralized between 2000 and 2011. After the failure to implement the decentralization of the health system, mainly due to increased corruption, Libya decided to recentralize the system. During the interviews, decentralization was mentioned as another issue among the failed attempts over the past 20 years. Key informants explained this issue by mentioning:

> *"To be honest, decentralization needs a strategy ..... in order to be better organized in the health sector. Until now, the relationship (between local and central government) is quite confusing. The relationship between the Ministry of Health and municipalities is not clear [8]. .....The idea of recentralization was to stop corruption. Actually, it increased corruption. They said that if we controlled from one place it would be easy to stop corruption. Decentralization worked really bad. The ministry has to be regulatory body. I think the whole*

political system in Libya needs to be changed. Municipalities must have their own budget for health services. It has to be regulated. It is not about giving money and buying whatever they want [5]. It is not in favor of decentralization because of the lack of experts at the municipal level. The proposals are seen as simply moving problems from one place to another. For example, shifting beds, allocating funds, burden of diseases, procuring equipment etc…. [14]. "

Some key informants also stated their support for decentralization by saying that:

"If a person wants to buy a MRI machine, he cannot buy it by himself, he has to go to Tripoli and get an authorization. That's a waste of time. If you have a regulatory body, policies and standards and a clear guideline on how to buy these devices, then the final decision has to be made in a decentralized way (authorities or managers). There is no problem. To do everything from the center makes people's lives difficult and increases corruption. Because the people who are in the center can be influenced by other people who corrupt them. It is very easy. Centralization increases corruption. I have seen it. I think centralization has to be completely eliminated. It is that the Ministry of Health be only a regulatory body, which develops strategies and plans. But the purchase of equipment, medicine and other things has to be done locally. Autonomy is to be given to hospitals, institutions and facilities. We need to give them financial responsibility. They should determine their needs. But everything has to be regulated [5]. There is a difference between decentralization and deconcentration. Decentralization is related to governance and delegation of decision making to local administration. With deconcentration, we have created organizations to perform certain tasks. One of them is planning, which is very important. Leadership is also one of them. We thought that leadership was not working properly in the government. The creation of these institutions is part of the devolution strategy, not the decentralization strategy [18]."

Some key informants stated that political instability and unsustainability were the major governance and leadership problems. They indicate that security and war affect policy and economy in a negative way, and that the overall health system and reform activities are adversely affected. They defined these problems in their own words as following:

"The problems with the Libyan health system as a whole are also our concern. We are part of the problems. Political issues, political instability, etc. [1] In every conference, every training course, we have several recommendations to the Ministry of Health. They are not implemented. This is the problem with the health system in Libya. In the last 10 years, they have changed the head of pharmacy and medical devices 14 times. Some of them worked only 6 months. ..... They are changing even the ministers every year. This is the biggest problem [4]. The politicians in the last ten years do not have the leadership or capacity to lead these people. I do not blame them. Because the country is not stable. But what I did in nine months was to just manage the crises, single-handed [5]. The main problem is we have two governments. People are fighting each other. We did so many things to improve health system. But we have always faced four problems: economic, political, social, and security. We have the resources, but we do not use them because of the war [7]."

Other important factors identified as concerns in the area of governance and leadership were planning, management and administrative capacity. During the interviews, key informants stated that the health system was not adequately planned due to lack of management and administrative capacity in the Ministry of Health, and that the government did not play its role effectively and efficiently. They summarized these problems by stating:

"We need to look at building a good health system. This is the priority. The second problem is that we do not have planning. Many people are assigned at the MoH and Planning, but the outcome is not good because we did not include all stakeholders in the planning process to get their views [11]. While policy and regulations are clear, the problems lie in their implementation. The problem often lies in the lack of planning [14]. The health care system needs to be reorganized to fit the new situation of Libya. At some points, the government has to assume certain responsibilities and expenses for the public and society to solve the problems in the health sector.....So, we believe that government should be regulator to form the health sector policy [8]. ….. One of the problems was the absence of managers who deal with these problems. They were doing their best. They did not have the capacity or opportunity to develop a strategic plan for health services. The capacity and training of the workforce that was supposed the problems of the health system was limited [5]. The health system in Libya suffers from poor training in management and

good governance. The system is dysfunctional [14), and inefficient in management [18]."

Key informants also cited inadequate regulations, lack of accountability, and inefficient economy as the main governance and leadership problems of the health system in Libya.

"We need to be accountable for answering the who, what, how, where, when, why questions. If we do that, no one wants to interfere the health system, so it can be easily changed. Yet it is not easy. But if we define all the process, we might be successful [11]."

Health Financing

WHO defines a good health financing system as one that raises sufficient funds for health and protects people from catastrophic health expenditures by ensuring that people use needed services, and that provides incentives for health care providers and users to be efficient. within the key informant interviews, the objective was to understand whether health system was adequately funded, whether spending produced the desired results and improved efficiency, whether the responsible organizations played their roles effectively, and so on. As seen in Table 23, there were 36 statements in the 23 transcribed documents.

Table 23. Sub-Codes and Frequency of Segments and Documents Containing Sub-Codes On Health Financing in Libya

Health Financing	Segments	Percentage	Documents
	36	**100.0**	**21**
Inappropriate funding and improper way of spending	13	36.1	7
Inefficiency	6	16.7	5
Corruption	5	13.9	5
Resource allocation	4	11.1	3
Autonomous health insurance fund	4	11.1	4
Coverage	1	2.8	1
Prices	1	2.8	1
Copayment and raise money	1	2.8	
Central financing	1	2.8	1
Documents with code(s)			14
Documents without code(s)			10
Analyzed documents			24

More than a third of the statements under the aspect of health financing indicated that the level of money allocated to the health sector in Libya was inadequate, and that the

allocation of money among different health categories was not consistent with the objectives of efficiency and protection of poor individuals from out-of-pocket payments. Some also recommended separating funding and service provision responsibilities, and increasing the autonomy of hospitals by allowing them to develop their own financial plans and decision-making about how to use the financial resources to increase efficiency. Key informants described this issue by stating that:

> *"….. The second problem with the health system in Libya, which is invisible to many people, is that we spend very little money on health as a country, we spend less than $500 per capita, which is far less than many countries. We have to run the system on a very low level of money. There are big hospitals, more employees, lots of patients. But the amount of money is not enough [3]. The second problem is the lack of funding. The share of health expenditures in GDP was low. The money and the resources have to be controlled. In this point, the most important problem is corruption [5]. The budget of the MoH is very low. The per capita expenditure on health is around $500 which is very low compared to other countries. But people expect better quality services [10]. We have a very big problem with our financial system. It has been judged by Porter. He said this system was designed to fail. And he was right. It is complete failure. Many motivated people, even directors with good idea, have to work with very little money. Even the Tripoli medical center does not have enough budget for two years. They are expected to provide very high and advanced care to their patients, like heart surgeries [11]. Hospitals can set their own plans and priorities to meet their needs with the money coming directly to them. As a health department, you cannot control the money because it goes through the MoF to reach the individual hospitals, and the manager has very little influence over this [3]. I totally agree that the flow of funding is a problem in Libya. The MoH provides and funds health services. This is a problem. Another agency should be responsible for funding. It is better idea to separate funding from service delivery That way, the MoH could provide better services [10]."*

The second most frequently stated issue under the health financing aspect is the inefficiency of the health system. Some key informants believe that the main causes of inefficiency are salaries in overstaffed health care facilities, sending patients abroad for treatment, or corruption in the health system. Key informants described this issue as follows:

"More than half of the money is spent on salaries for people who usually do not go to work. This means that more than 50% of allocated budget is wasted [3]. Treatment abroad, which is an important source of financial burden, was at one time encouraged by the authorities [14]. The current health financing system is one of the major issues. It is marked by corruption and monopoly. I think the reason for developing a new financing system is trying to deal with this highly corrupted network. Because right now, all the money you put into the system basically is wasted [21]."

Corruption was the third most frequently stated issue, in five text documents, when health financing was the focus of the interview. Some key informants think that health tourism agencies or individuals involved in sending patients to other countries for treatment, private insurance companies that contract contracts with health care providers for their premium payers, or the individuals for responsible for spending and allocating money among different purposes or health care providers are the main entities and individuals involved in corrupt practices. Corruption in health financing was described by key informants as follows:

"There is a lot of corruption. The Libyan people who live in Turkey are part of this corruption. The corruption is there [1]. …… Some big and old insurance companies, they pay money but people do not get good services. The directors of big insurance companies make contracts with hospital directors. In this case, hospital directors and companies are interested in contracts rather than providing better services or decreasing costs (a source of corruption) [3]. Money and resources have to be controlled. In this respect, the most important problem is corruption [5]."

The creation of a stand-alone health insurance fund to separate financing from health service provision was presented to key informants to determine the relevance of this idea and to obtain evidence of support for a proposal recommending an autonomous health insurance fund in Libya. The establishment of a health insurance fund in Libya has been discussed for almost 10 years by the Ministry of Health authorities. Although there is a decree on establishing a health insurance fund, it has not yet been implemented. Health services provided by public health care facilities at all levels are also free of charge for all citizens, which leads to overcrowding in front of public health care facilities and a decline in the quality of health services. Thus, the introduction of some sort of co-payments for health care users when they want to use private sector health care services,

and the possibility for the health insurance fund to buy private sector health services are the ideas that key informants were asked to evaluate during some interviews. Based on their experience in setting up a health insurance fund in Libya, or their opinions on the advantages or disadvantages of an autonomous health insurance fund and co-payments, they described or evaluated these ideas as follows:

"We held a conference in 2012. We ended up separating the health services budget from the MoH, and allocated it to the national health insurance fund [6]. Yes. I support the idea of a health insurance fund in Libya. I am doing it now. But we have problems. But they do not pay what you deserve. The MoH buys the service from the private. But the private is not working properly. Payment comes later on. This is a problem [1]. Resistance (against the autonomous health insurance fund) can be at different levels. Policymakers, even if you start with the MoH itself, there can be resistance. Those who do not understand the advantages of new payment systems or financial reforms will resist. If they are not engaged and included in discussions, they will resist change. And others, the Minister of Finance and other financial agencies, may resist because they are convinced of the old school of financing, such as line item budgeting. If these stakeholders are not convinced, they will of course resist. Many health care employees appreciate receiving the same salary as those who work hard. They may resist change. If they see that others are receiving higher salaries, those who receive less will demand higher salaries. Otherwise, they will resist change [12]. If copayment is accepted, there will be a lot of resistance. Because it is in the constitution of Libya. National health is free. The law forbids us to take money from patients. We were not even allowed to receive donations. But now, this has changed. Patients or people can give us money to buy some necessary equipment or technology. However, we should not do that if we follow the laws [6]."

With respect to health financing, key informants also stated some issues and obstacles related to limited financial resources, resource allocation, central funding, pricing and financial coverage.

"There is no entity that takes the responsibility of setting prices. This is a problem as well. The prices charged in the Libyan private sector, and by the government are not reviewed by an independent body. There must be an independent body for this purpose [1] Many Libyans travel abroad for health care. The public sector does not cover most of the services requested by citizens.

Funding is not adequate [17]. There is instability of funding and abuse of resources. Financial resources are not properly deployed [18]. There is a desire to increase spending. But the obstacle to this is the economic crisis that the country has been experiencing for the past few years. They would like to improve the health sector and see public health care facilities operate more efficiently so that they can serve those who cannot afford to seek care in the private sector or abroad [8]."

Organization and Delivery

Health service delivery is the provision of effective, safe, quality health interventions to those who need them, when and where they are needed, with minimum waste of resources. It includes health services delivered by primary, secondary and tertiary care facilities. It also includes the management and organization of small or large primary health care facilities or university hospitals, public or private. Quality, responsiveness, accessibility, referral system, equitable distribution, availability of essential medicine and equipment, and other important aspects of service delivery were assessed by key informants in the interviews. The organization and delivery of services was addressed in 18 text documents. Fourteen different elements important to organization and service delivery were stated or repeated 124 times by key informants.

Table 24. Sub-Codes and Frequency of Segments and Documents Containing Sub-Codes on Organization and Health Services Delivery in Libya

Organization and Delivery	Segments	Percentage	Documents
	124	**100.0**	
Private sector	30	24,2	12
Hospitals	29	23,4	14
Inefficiency	12	9,7	7
Primary Health care	12	9,7	7
Quality	10	8,1	9
Planning	7	5,7	4
Lack of confidence in the health care system	6	4,8	5
Organization and referral system	4	3,2	4
Access	3	2,4	3
Family physician	3	2,4	2
Lack of resources	3	2,4	2
Regulation	2	1,6	2
Security	2	1,6	2
Out of pocket payments	1	0,8	1
Documents with code(s)			18
Documents without code(s)			6
Analyzed documents			24

Key informants were encouraged to discuss the private sector and its role in Libyan health system since Libya has a rapidly growing private sector that sends many patients abroad for treatment. For this reason, it is not surprising that the private sector is one of the most frequently stated issues under the heading of organization and delivery of services. During these discussions, some key informants compared the private sector with the public sector, and mentioned the inefficiency and some other weaknesses of public health care providers as follows:

"We have many public health care facilities, but they are very poor and weak. We have a private sector, which is good. It is much better than government one. I know there will be a lot of changes taking place during the change of the system, but it will not happen overnight [3]. It is impossible to say that the private sector depends on the public sector. The private sector benefits from the collapse of the public sector. It might be true. But the public sector should keep itself in check. It should look at the number of its employees. … I think the public sector is like a big dinosaur, the private sector is like a rabbit with better speed. When I compare prices in the private sector and compare the cost of a knee replacement in the public sector, it is almost twice as expensive in. In the private sector it is less expensive [1]."

One key informant stated that private sector should be regulated appropriately and that both the private and public sectors should not compete, but rather complement each other. This key informant believes that public sector should continue its role in health care by improving itself and providing better salaries to its staff.

"Private sector can provide services fast. In Libya, for the private sector, you have to create competition. Before that, you have to regulate the private sector. You need to have standards, policies, and a regulatory body that issues standards of the private sector before allowing them to provide their services. You also have to empower the public. That way, people can gravitate to the private Many countries have a private sector. In Libya, the government and stakeholders think about how to deal with the private sector. This cannot be done quickly. it has to be done slowly. The public should stay and the private can improve. We need to improve the public. By doing this, people may feel that there is no big difference between the private and the public sector. If you keep them (workers) in the public sector, they will work well. But if you do not give them good salaries, and other incentives for workers and their families,

then the workers will go to the private sector that offers them more opportunities. The private sector is a good competitor for the public sector although itis very expensive [5]."

Some key informants also mentioned the disadvantages of increasing the role of the private sector, stating that the private sector can abuse the system to increase profit at the expense of quality and safety.

How do we control this? We have two problems: public sector inefficiency and private sector profit. In the private sector, you cannot control performance, safety, professionalism, etc..... They are smiling but the services may not be up to standards. They are inefficient [10]. Libya has a very good budget for private hospitals. Private hospitals provide less than what is needed. They do not treat them (patients) as they should. They are not accountable for their actions. Quality management systems should be put in place for the private sector to improve safety. We should support public hospitals by training their leaders and we need young leaders, not more than 35 years old. This is our problem in Libya [11]."
Some key informants noted the competition between the private and public sectors, particularly in attracting physicians who specialize in certain areas. They also believe that the private sector provides more incentives and that the private sector should be guided by appropriate health policies. They described this issue by saying that:

"There is legislation that prohibits multiple jobs ((i.e. working in both the private and the public sectors). But in the reality, this is not the case. But in some specialties, the private sector offers higher salaries to doctors. If you prohibit feasible work in certain specialties, it could cause further problems because the number of experts in certain specialties is very limited. …….. If you force them to work in only one sector, that might have negative effect on the health of the population because these physicians will not travel to other regions and cities [9]. The current system is not effective. The public sector and policy makers view the private sector as a partner of the public. The private sector usually uses the human resources of the public, pays higher salaries and provides a better working environment. They need to sit down together and find solutions to make the private sector a partner of the public. In my opinion, it is not good to see the private sector as a competitor to the public sector. That's not going to be a good choice. The health care market is a bit complicated, it cannot be run solely by the public sector, you cannot ignore the private sector, even if it is not for profit [12]. The private sector offers significant incentives. This explains its success in many areas [14]. Strengthening the relationship between the private and publics is necessary.

The private sector can be free, but it needs policy guidance from the government to determine the maximum price [8]."

Hospitals were another topic discussed during the interviews. The roles of hospitals in the overall health system and their organization and management structure were the topics discussed. Many participants in the key informant interviews believe that hospitals in Libya should be autonomous and free to make their own decisions in areas of hospital management, such as purchasing their own equipment or medicine or setting pay for performance pay criteria for their employees.

"One of the problems of the Libyan health system is the way public health care facilities are managed [22]. It might be necessary to give autonomy to hospitals. They can compete with the private sector. They can develop themselves. They are still public, but they increase their revenues. A trust fund might be suitable for this purpose [5]. If we give them real autonomy, these hospitals may provide better health services. But the decision should be made by the parliament [10]. So, I think the way we do governance within the hospitals themselves needs serious reform so that money would be linked to performance indicators, and our managers, if there is no accountability for them, are be eager to improve performance [17]. The executive board would be composed of the chief of all department heads. Chief of medicine, Chief of surgery... and also key managers such as financial or human resources managers. This council should sit down and discuss how they should spend the money we receive. And other functional responsibilities. In this way, the managers could have used the authority to make decisions and also be responsible for the consequences of their decisions and the management of the hospital. ...You should create a team spirit [3]."

But other informants also believe that hospitals are not ready to be autonomous to make their own decisions since they do not have administrators with good managerial skills and managers should be trained in these areas before making hospitals autonomous. They also believe that making hospitals more autonomous may increase corruption in the system.

"Hospitals are not mature enough in terms of management to be independent. I do agree that there is corruption in the MoH and I am afraid there is also a

lot of corruption in the management of hospitals. Trying to solve these problems, you have to go to the central level and try to implement reforms and transformations in the central government and Ministry of Health and then try and calm down the game with the reforms and changes. If your first step is to make and give a lot of autonomy to individual hospitals, you may end up with is a separate hotbed of severe corruption in all its forms that you will never be able to control [2]. Management and administration is big problem. Hospital managers are recent graduates. They are now in charge of management and administration. They have no experience in management and financing. They are placed in the position of the general director of the hospital. Sometime they do not work in administration at all. Before assigning these people as general director, they should be trained through short term courses, or at least through orientation [7]. We should train managers in the financial aspects of the organization. If a manager is not trained, he or she can leave the management of these tasks to competent and experienced people. We should support public hospitals, while imposing very strict requirements for hospitals [11]."

Some concerns were expressed regarding the consequences of making hospitals relatively more autonomous, based on their experiences with previous attempts to change hospital management, and the way health care facilities are currently managed in the country. They expressed their concerns by saying that:

"We've had proposals like payment by results, payment for performance. I think these ideas are fine, but they are very difficult to implement, so there will be a lot of change and improvement in terms of providing good health care. In terms of other aspects of improving inefficiencies, we should have good leaders at the heads of departments and directories. Empowering them to be able to engage the rest of the staff working in implementing the new rules is easy to say, but they are very difficult to implement [2]. We had an executive order proposing a board and CEO for hospitals. I was the nominated as a CEO and chairman of the board. The board included the deans of five faculties, and a few other people. There was no success. When you put in place a position of chairman or CEO… We have to change the rules. The board is made up of the heads of departments mainly, and the directors of divisions. They do not include outsiders. I was not a totally free [6]. The heads of hospitals in Libya are mostly doctors. They are specialists. They might be very good in their areas.

But not in management. Managers of hospitals need to have special skills. We need to work on this aspect [8]."

Primary health care services and facilities are playing very important role in delivering health services throughout the country. However, they are criticized for not meeting the expectations of their users. Many key informants stated that primary health care facilities are not well equipped and lack the necessary pharmaceuticals and medicines for their patients. According to key informants, the referral system is not functioning well and some secondary health care facilities are expected to provide some primary health care services.

"First thing to do is to strengthen PHC. PHC also needs leadership. You have to pick the right person. The people I have seen do not have a clue what PHC is. There are so many small PHCFs. We do not need hospitals. PHC need leadership because we have PHC facilities everywhere. We need manpower. The most important thing is to have GPs who will be on the front lines with people. They need to be trained. We should not have those people in PHC facilities who do not want to work in hospitals [5]. We used to have a very good primary health care system. At that time, it was connected to the MoH as local authority. Now the primary health care system has three problems: maintenance, overstaff, and equipment. We have to equip PHCFs with new equipment. We also need to educate the people who use these PHCFs and train the staff working there [7]. There are some problems with PHC services: safety conditions, financial reasons, and overcrowding at the primary care level. Staff working in primary health care facilities, such as doctors and nurses, are not trained to work in these facilities. Primary care facilities are shifting patients to secondary and tertiary care hospitals. We have more physicians in primary health care facilities than we do in hospitals [9]."

Key informants were also asked to give their opinions about what should be done to improve primary health care services and facilities to enhance their roles in Libya'shealth system. They mentioned that PHC needed leadership, more investment, good governance from the MoH, and a systematic approach to be an essential component of the health care delivery system in Libya.

"You have to make it compulsory to go to PHCFs first before going to hospitals. PHCs are for many purposes such as treating children, the elderly, giving vaccinations, etc. It takes a lot of work, funds, and training of the people on how to use PHCs. It also needs leadership and support from the governance. It also takes commitment. It will save a lot of money. It will allow for more efficient use of physicians [5]. The MoH should be responsible for primary health care for preventive measures. If we improve and develop PHC, nobody will say anything. If the MoH wants to work, if Libyans want to work, they should work on PHC. That is the main issue. If we improve PHC or develop family medicine it will be very good success [7]. There have been many global initiatives in many countries. They have built many PHC facilities. But there were no systematic attempts to strengthen PHC. There was no sustainability. And PHC services are not attractive for many policy makers. But many policy makers are not interested in PHC. They do not talk about the positive aspects. They think that PHC is important just to help hospitals. They use PHC as filter for hospitals. For this reason, they did not invest more in PHC [12]."

It is clear that inefficiency is a significant management concern for health care managers and policy makers in the Libyan health system. In this process it might be very useful to know the root causes of inefficiency in order to develop more tailored and implementable proposals to address inefficiency problem. During the interviews, many key informants mentioned system inefficiency and stated that overstaffing was the major cause of inefficiency in the public health sector. In their words, this issue was described as follows:

"They should look at the number of their employees. There are too many. With this huge number of people, what are they going to do? We have fewer people, but we produce more.....we are more efficient and effective, almost 800% more efficient and effective than public. I think the public sector is like a big dinosaur, the private sector is like a rabbit that is much faster … They have brand new machines. But they do not work well. In the southern region, I was told there are seven CT Scan machines, but only one is working properly. Because there are no human resources to operate them. There is a lot of corruption [1]. While health facilities are over-staffed with administrative and non-medical staff, administrators are poorly paid [15]. What I meant to say is that the Ministry of Health's budget is actually used for something else in

secret, namely to support the unemployed [21]. All building blocks are ineffective, especially in rural areas and outside the cities, even at 400 KM from Tripoli [14]."

Training and education hospitals play a special role in health systems by providing tertiary care services as well as training services to health professionals. They also develop new skills and treatment methods by using advanced technologies. For this reason, the role of university hospitals in the Libyan health system was assessed by some key informants as important for improving the skills and knowledge of health care providers. In interviews, it was mentioned that the number of medical training centers was lower than needed. They also have unique organization and financing mechanisms compared to other countries. It is clear that university hospitals are faced with limited financial resources controlled by the MoH, and they are not able to make their own decisions.

"The role of university hospitals actually did not change. They are supposed to provide tertiary care, have more advanced technology and specialties. Actually, that was the plan. Misallocation, lack of funding, and centralization are the main problems. Everything is in the hand of the MoH. We thought the MoH should only be a supervisory, legalizing, and organizing body. We tried to separate the funding from the MoH by creating a national health insurance. We tried to separate the delivery of services between the hospital part and the primary health care part. We had to close many departments because of lack of funding, maintenance of equipment and facilities. University hospitals were supposed to have independent budget and authority under the supervision of the MoH. They were planned to be under the financial and management supervision of the Libyan Prime Minister. But that was the plan. So far, we are under the MoH. The budget is allocated to the MoH, and then it is passed on to university hospitals through the MoH. They (university hospitals) receive what is left over. The directors of hospitals, including myself, are suffering. We do not have any independence. Even in signing with a specialist. We have no independent budget and governance. We have to go through the central government. We do not have any autonomy [6]."

Quality of services was another issue frequently mentioned by the key informants. Many of the statements indicated that the quality of health care services was poor and that the

main causes of poor quality were related to lack of human resource skills and knowledge, lack of standards and regulations, and poor laboratory services.

> *"A lot of investments are devoted to improving technical quality. Perceived quality is not really the focus of policies. They do not do patient satisfaction surveys. We need to study satisfaction with health services. We did a survey before and found that some regions are fully satisfied and others are totally dissatisfied. It depends on the regions and people [12]. Overall, health system in Libya is less effective than normal level, the system is not safe, the quality of services is poor. Both the public and private sectors are of poor quality, but the private sector is little better in providing services. Professional quality with respect to international standards varies from good to normal [16]. There is no appropriate regulation of service quality, nor of health care providers [18]. Another point is the weaknesses of laboratories. Laboratory services are provided by people who have received inadequate training [11]."*

Due to poor quality, there is also lack of trust in Libyan health care providers and facilities. For this reason, many patients are reportedly seeking treatment in neighboring countries as well as EU countries.

> *"Libyan citizens do not trust the health services provided throughout the country. We are trying to regain that trust. COVID-19 helped us to some extent. Now people cannot travel to other countries. All people have to come to us [6]. People are ready to pay for health insurance contributions. But first they have to trust. They have to trust the quality of health services they use. Primary health care facilities are in better position in terms of trust. But this is not the case for public hospitals [8]. Health in Libya is free. This is another problem. Most of the services delivered by the public sector is free, and people are not satisfied with these health services, and they try to get them abroad. Treating patients abroad is not good idea. But it requires political action. People are not satisfied with health services in Libya provided by the private and public sectors. Many people go to abroad to receive health care for different purposes. This has some sort of social significance. The problem is not the actual quality of the services. It is in the mind of people. We have to work on that in order to get the service inside the country. If you provide service for free, people feel that cheap service means poor quality. People and even our*

doctors have this problem. Doctors do not talk too much to the patients since they are busy or simply do not like to talk. They just offer their service [10]. "

Key informants indicate that the planning of health services is a problem due to bureaucratic or administrative barriers, the large geography and the low population density of rural areas, as well as the persistent environment of political conflict. Some believe that centralization of the health system is the solution to establishing sound health service plans in the country.

"It is true that plans are needed, but these should be based on the realities on the ground and not purely bureaucratic or administrative considerations [14]. It is not easy to provide and plan health services because Libya has a big geography, the cities are not equally populated, and the demographics have changed due to the conflict. The central planning office for the sector was lost due to division of the country [18]. We need to distribute the capacity well in the country, the new health system should be re-centralized [8]."

Libya needs reorganization of its health system, but there is a lack of vision as to which direction to take: creating more decentralized system or making it more centralized; or changing the roles of health care facilities at different levels or tiers. Some believe that decentralization is necessary to overcome the significant problem of trust in central government and public authorities while others believe that centralization is the only solution to the current problems of the system. A number of key informants believe that reorganization of the system should reinforce the importance of primary health care facilities and one approach could be the introduction of family doctor or general practitioner.

We are spending 40% of our budget on providing primary health care services. People come directly from the street to the tertiary referral center. There is no functional referral system. If PHCFs play their role as gatekeepers, we can better control our budget. We have better infrastructure for PHC. We have more than 1,400 primary health care facilities (PHCFs) in the country. We have also some other health care facilities in between the PHCFs and tertiary care hospitals. We have many general hospitals [6]. If primary care works well, then people go there. If we improve the primary health care facilities and

maintain them effectively, people will use PHCFs. For the secondary level, we have to have good primary health care to apply the referral system. If we have good primary health care, people will have confidence [7]. We need to educate people on how to use the health care facilities in Libya's health system. They directly go to university hospitals without visiting primary health care facilities. People think that primary health care facilities are only doing vaccines [9]. We have a problem of understanding of decentralization. Decentralization should be at the level of service delivery, not governance. Because of this misunderstanding, people have brought it down it to the municipal level. I think they have not understood the meaning of decentralization [21]."

The family medicine approach was opened up for discussion as a strategy for strengthening primary health care services, and to learn about the likely resistance or suitability of this approach in Libya. Many key informants supported this idea and some recommended solutions to increase the acceptability of the family medicine approach.

"People are not well connected to the health system, and there is no family physician implementation. The family physician should be there to connect people to the health system [18]. Polyclinics and some primary health care centers (PHCCs) are providing both preventive care and treatment services. If we reach family medicine, that's a good success. We can give training to our GPs in short term, for example six months, to make them work as family physicians. That's how we can build a family physician system. The family physician system is a good solution and will help the MoH to make the PHC system work [7]. It is acceptable and implementable. But we are not ready. We need three or four years to implement family physician system. We need a big jump [10]. I think the same system (as in Turkey) could be useful in Libya. But we need trained FPs rather than general practitioners. We do not have FPs. GPs in rural and remote areas need training and support to work actively at the PHC level. We need to market this specialty to attract more physicians to become FPs. We also need to educate the public. We sent some physicians to Egypt to be trained as FPs. But when they came back, they found no family folders, no recruitment area, no registration, no qualified nurses. We should consider this unsuccessful experience in Libya [12]."

According to the key informants, other important problems that prevent the successful reorganization of the health system and service delivery are security issues, access, lack of resources, direct payments. These issues were described by them as follows:

> *"...Because of the conflict and lack of security in Libya, a large number of foreign health staff left the country. Health services were previously provided mainly by foreign nurses and other staff. All these problems plunged the Libyan health system into a crisis [10]. People in remote and rural areas have few options [12]. Some of the current problems of under-coverage are being managed by mobile teams and medical convoys to fill these gaps in service provision. However, this is not a sustainable solution. These activities are currently dependent on donations. Increased resources would improve things [14]. People are practicing without common standards. Doctors see themselves as a God [21]. There were out-of-pocket payments since the public was not able to provide effective health care to its citizens [17] "*

Health Workforce

More than one-fifth of subcodes related to problems or obstacles of the Libyan health system were in the general area of the health workforce. Codes related to the health workforce were stated or repeated in 18 of the 24 documents. This shows the level of importance that key informants place on health workforce issues. As shown in Table 25, motivation and incentives, training of health professionals and quality of training, and maldistribution of health professionals were the most frequently stated or repeated issues.

Before the era of political conflict and social disruption, the Libyan health system was heavily dependent on foreign health care staff. Most of the nurses in Libya were foreigners from countries such as Bulgaria, Russia, and Southeast Asian countries. Discussions during interviews indicate that there is no problem with the number of doctors and nurses graduating from national Medical or Nursing Schools. But the problem is that those nurses and especially doctors are leaving the country and working in other countries such as Europe or the United States because of the conflict or moving to more developed countries in the world.

Table 25. Sub-Codes and Frequency of Segments and Documents Containing Subcodes on Health Workforce in Libya

Health Workforce	Segments	Percentage	Documents
	115	100.0	
Motivation and incentives	25	21,7	14
Training of doctors and nurses, and quality of training	23	20,0	11
Human resources-maldistribution	11	9,6	8
Salary regime	11	9,6	8
Pay for performance	10	8,7	7
Over staff in health care facilities	9	7,8	6
Quality	9	7,8	6
Shortage	6	5,2	2
Mismanagement	4	3,5	4
Planning	4	3,5	3
Medical Law	3	2,6	1
Documents with code(s)			18
Documents without code(s)			6
Analyzed documents			24

The conflict that broke out in the country after 2011 caused foreign health staff to leave the country and the system experienced a severe lack of qualified nurses and physicians. One-third of the Libyan population is enrolled in the public sector as employees, and the high level of public sector employment also affected employment in health sector as well. Like other government sectors, The Libyan health system is also overstaffed. Having a large number of staff, especially administrative staff in public health care facilities, is seen as a source of inefficiency and reduces the level of motivation and incentives. The situation has been exacerbated by allowing health facilities to hire health e staff on contractual basis. Since the salaries of contract employees are paid by the Ministry of Finance, the incentives to hire additional personnel are high. Because there is no objective performance evaluation and almost all contracts are renewed regularly, this decentralized hiring system has greatly increased the inefficiency of the system.

The issue of motivation and incentives was the most frequently stated problems with respect to the health workforce in the health system. Some key informants believe that paying additional income, providing fringe benefits to the families of health care providers, prohibiting other health care professionals from doing the work of doctors, or providing other incentives were necessary to increase the motivation of health workforce in Libya. Key informants described this issue in their word as following:

"The health system in Libya has a moral hazard problem. We have a lot of moral hazard in the health system. The moral hazard lies in the behavior of physicians in their clinics. They do not care how many patients treated. Because they do not receive additional income when they increase the number of patients [3]. Right now, the doctors in hospitals are working with very simple cases. They have to have incentives. The doctors in big cities do not want to go elsewhere. The facilities for them and their families in the big cities are good. They put their families before their work. The current power will be on the women. There are a lot of female workers in Libyan health system. They need incentives as well [5]. …. Maybe the employees of the university hospitals work 60 hours a week. But they get the same salary. They do not have any other incentives. They deserve more relaxation [6]. In the eastern region of the country and in the private sector, other health professionals are considered as doctors, they do their jobs, they are employed as doctors with the same salaries but they do not have the same responsibilities [9]. The problem is not infrastructure, equipment, and staff. The problem is the absence of adequate incentives. Clearly, ideas and policies need to be developed to make the best use o available resources [15]."

The quality of physicians and nurses and training of health professionals were other issues that key informants frequently mentioned. According to key informants, the training of nurses in short term courses, the lack of planning and coordination of physicians in certain specialties, the lack of regulation of who performs medical functions, and the quality of health professional schools are the main reasons of the lower quality of health professionals and schools in Libya.

"If I want to classify the problems: 1. Human resources is a problem in terms of training, number of staff, quality… I absolutely agree that more than 80-90% of the nursing staff is unqualified. They are in trained in very short courses [2]. Nurses are not qualified. They are helpers. They work in the role of nurses [6]. …..But for nurses, there are different schools whose training duration ranges from 4 months to 4 years. There are schools in the private and public sector. Their qualities are low. Many of them are not real nurses [12]. The training system for health professionals and the results are poor. It is actually inefficient for other sectors as well. There is no clear plan on what the country needs, what kind of specialists we are looking for, and what kind of

knowledge we need to feed our institutions [8]. There are medical technicians that are treated as physicians. But their education is not medical training [9]. Currently, there is no special training strategy to fill the gaps in the competencies of certain skills of human resources that are really needed for optimal service delivery performance [15]. Due to the large number of medical schools and assistants, the quality of medical education decreased in the last 20 years. According to the WHO standards, Libya should have 6 medical schools. But we have 12 and it is more than necessary [9]."

Even though the health workforce per 1,000 population in Libya is above WHO standards, the quality and distribution of the health workforce in the country were the focus of discussions during interviews. Since Libya has a relatively small and widely scattered population, the equitable distribution of the health workforce was seen as a problem. In addition, population dispersion, conflict and war, the lure of large cities, and inadequate human resources management have resulted in a poor distribution of health workforce. Key informants described this issue using the following statements:

"There is another important problem with human resource issue. It is maldistribution. Easy work places, low pressure departments are overcrowded with nurses. There is another barrier which is at the primary health care level. PHCFs are pulling a lot of health care staff out of secondary care. They offer them very low pressure, very short work hours for the same salary. For this reason, a large number of health professionals left secondary care facilities [2]. After the departure of foreign health human resources, especially in the South and rural areas, there are few doctors and nurses in health facilities [6,7]. There are shortages in certain regions for security reasons. For instance, one city in the south has a hospital with more than 200 beds, but there has not been a single doctor for seven years [9]. If we talk about the numbers, let's look at the basic health workers (according to WHO standards) we have 76 workers per 1000 population, which is higher than WHO recommendations. But the problem is that most of the workers are concentrated in the big cities, and the distribution is not good [12]. The functions of human resources are fragmented at all levels. That's why we have a problem with planning, distribution, and other aspects of human resource management in Libya [21]."

Key informants cited inadequate salary packages, absenteeism of health care providers, and lack of performance evaluation of health care staff.

> *"….. we have a problem of overstaffing in the MoH, who receive their salaries from the MoF. If we change this, these inefficient people will lose their jobs, and there will be another problem. Actually, you may solve one problem but you will create another. It takes a very strong government to support health care reforms that can create other problems [10]. Health professionals are paid centrally by the MoH and by the MoF. Therefore, they (public health facilities) are overcrowded, overstaffed, and do not provide good service at all [22]. We had problems with human resources and payment of salaries during the corona period. … We have people working but they are not getting their salaries on time. Our occupancy rate is less than 50%. It is not because of the lack of patients. …… There is no guarantee you will be paid [2]. There is no annual performance review [21]. Now, all people working for MoH are on contract. But nobody says you do not work well. You have to go home. You have to do this [7]."*

Some key informants recommended that the pay-for-performance system in health care facilities could be useful in producing good results by increasing efficiency and motivation of health workforce in Libya. In their comments:

> *"….. So, we managed to do this with separate funding. The funding came from the MoH or the national health insurance. We managed to keep our specialist working in their hospitals, they get paid if they work until two pm. If they work after 2 p.m., on weekends or holidays they get paid for that. We managed to pay them more money. They had incentives. They closed those private clinics, and went back to working in university hospitals. This was a successful experiment. I requested to continue this implementation. We are still negotiating with these companies to renew their contracts. ..... This application costs us less than the private sector. Doctors can get more money. Nurses came to us to work in university hospitals [6). Pay-for-performance which was my thesis at the University of Liverpool for a master's degree. According to this thesis, pay-for-performance was promising to improve the performance of doctors in Libya [18]."*

Many participants in the qualitative research mentioned that there were huge number of employees in the health system in Libya. Many also stated that there were not too many physicians and qualified nurses, but their main complaint was the number of administrative staff and unqualified nurses. They described this issue in their words as follows:

> *"If we consider all types of health care staff in the general health system, it is absolutely true that we have far more staff than necessary [2]. I visited a PHC unit only three year ago. There were only two examination rooms, small labs and a kitchen. But there were 300 employees. There were 36 dentists, 34 dental assistants. There were no chairs. They only work four hours a week. They work once a week or half a day [6]. In the Ministry of Health, we have corruption. We have a lot of people working, but they are doing nothing [7]. Overstaff is problem. There is no problem with the nurses and doctors that we need to provide services. But there is a problem with the huge number of staff working at administrative positions. We don't need many of them [10]."*

Shortages, mismanagement of health workforce, medical law and planning were other issues that key informants mentioned as important problems facing the Libyan health system. According to informants, there is a need to change the Medical Law in Libya. This issue was also mentioned by other participants. It is also clear that the functions of human resources management have been carried out by separate ministries and departments in an uncoordinated manner, which causes a lot of problems. It might be better if selection, training, needs assessment, hiring, contract renewal were done by a central human resources department under the MoH, in coordination with the Ministries of Planning and Finance. Informants also point to another fact which is the selection of managers of health care facilities. Selection should be based on the qualification and competence of managers rather than on their connections and relatives. For this reason, professional health managers should be educated and trained in universities as a separate specialty of management. These issues were described by key informants in the following terms:

> *"The number of specialized physicians and nurses is limited [7]. There may still be some shortage in some geographic areas and in certain fields. Some specialties are in short supply, such as radiotherapy, anesthesia and*

neurosurgery [15]. There is no real data on health human resources showing where we need to fill the gaps [8]. We have two main problems with HRs. We do not monitor how many we need, where they should be, what is their specialty is. Medical education is focused on acceptance, teaching and graduation. They are not interested in many important aspects of HRs such as their need etc. [11]. Medical Law or public health law has not changed since the war. The original medical law does not permit physicians to treat or examine patients. It does not even permit to take sample from patients. But they insist on performing these tasks [9]. There is no trust in the public sector. The reason is that for the last 30 years, they have worked in a way that people work for their benefit. That is the mentality of the public. .....The problem is the leaders here in Libya. Those who don't work are the most corrupt. If they don't work, they will be managers [1]. "

One of the key informants listed many problems with the health workforce in Libya. These include: Lack of predefined missions, qualification and eligibility; lack of plans determining future needs and outcomes; inadequate training programs and research initiatives; lack of awareness of new emerging technologies, procedures and techniques; and lack of infrastructure to accommodate doctors and other health care professionals. This key informant recommends that adequate and continuous training should be provided to address many of these issues.

Medical Supplies and Technologies

The fifth building block of a health system is medical supplies and technologies, and a well-functioning health system is expected to ensure equitable access to essential medical products, vaccines, and technologies that are of assured quality, safety, efficacy and cost-effectiveness. During the key informant interviews, all these different aspects of medical products and technologies were discussed. As shown in Table 26, this aspect is considered very problematic. The four most frequently cited topics indicate that corruption, irrational decisions and regulations have a negative impact on the entire health system in a negative way since medical products and technologies are essential for a well-functioning health system.

Table 26. Sub-Codes and Frequency of Segments and Documents Containing subcodes on Medical Products and Technologies

Medical Products and Technologies	Segments	Percentage	Documents
	85	100.0	
Corruption	16	18.8	9
Organization, maintenance and supply chain	11	12.9	6
Central distribution by the MoH and irrational decision	11	12.9	7
Procurement	10	11.8	6
Registration	6	7.1	3
Availability and positive list	6	7.1	5
Pricing and reimbursement	6	7.1	3
Private pharmacies and companies	5	5.9	4
Essential drugs	4	4.7	3
Generic drugs	3	3.5	2
Distribution	2	2.5	1
Regulations	1	1.2	1
Local production	1	1.2	1
Rational drug use	1	1.2	1
Drug expenditures	1	1.2	1
Exported drugs	1	1.2	1
Documents with code(s)			14
Documents without code(s)			10
Analyzed documents			24

Corruption is the most frequently mentioned or repeated issue for the medical products and technologies aspect. The participants of qualitative research identify the procurement and purchasing process for medical products and technologies as a source of corruption, and usually blame Medical Supply Organization (MSO), which is responsible for planning the needs, purchasing, storing and distributing all medical products and technologies needed by public health care facilities at all levels. Informants describe this issue as the following:

> *"There is a lot of corruption. If you talk to people in the public or the MoH, they care about high standards, they want to buy new machines, but 90% of them are just not working. This is the truth of inefficiency. There are a lot of holes in the public. The population is just 7 million. It can easily be manageable. There is a problem of corruption somewhere. I do not know where. There is a lot of punishment. But it is always a case [1]. There is also a lot of corruption. The machines without consumables, it's like they have nothing [2]. Because of the issue of corruption and misuse of items (a lot of supplies) distributed in Libya and then smuggled to Tunisia. They are used in*

the black market in Libya in private companies. Yes, corruption is a very big problem. The structure of the MoH does not relate directly to the Medical Supply Office (MSO). We have a number of organizations and one of them is the MSO which is supposed to be under the MoH but not really. Often, he (the minister) will have very little influence. And that is why it is corrupt [3]".

According to the views of key informants, "organization, maintenance and supply chain" is the second most frequently cited issue for improving medical supplies and technologies. This issue is closely related to the issue of central distribution and irrational decisions made by the MoH. These issues were coded as separate themes since participants spent considerable time indicating how these issues were important to address. In the opinion of key informants, irrational decisions are often made by MSO since that department is interested in purchasing products and technologies, but not interested in maintaining the purchased products by supplying other necessary consumables and employing or training employees to run these technologies. Storage and cold chain to protect medicines and drugs such as vaccines are limited. These issues were described by key informants in their own words as follows:

"Maintenance is another problem. The MoH does not seem to be the key to contracting maintenance. It is not necessarily periodic; it is very haphazard. There is a lot of stoppage and disruption in services [2]. For instance, it is forbidden for anyone to obtain or import certain drugs, except for MSO. Insulin and other medicine are examples. Many people do not have access to insulin. It is cheap and available on the private market [3]. The supply chain in Libya is not going to disappear. Due to inadequate legislations and regulations, the chance to have well-trained staff, the chance to have facilities like medical stores and standard medical stores. There are no standard medical stores in Tripoli. They rent stores. The problem is the cold chain stores for vaccines and other medicines and pharmaceuticals [4]. It has been decided to buy a very expensive machine of 50 experts, too much expensive in the long run for a destroyed country like Libya. But we do not have qualified people to use these machines. We also need a quality management system in our laboratories [11]. They focused on more expensive care, not affordable for the population. They focused on specialized care rather than essential drugs. This is not the right policy. It needs to be changed. They need to put more essential drugs [12]. There is no central laboratory that could evaluate the potency of drugs. Transportation, poor storage, source of drugs, etc… are all factors that

could contribute to the problem of substandard and falsified products. In addition, there is no control over drugs on the market [13]."

Some examples of problems caused by central distribution and irrational decisions by the MoH were also mentioned during the discussions.

"Facilities are always lacking, and often the wrong machines are bought for the wrong purposes just because the MoH thinks that our hospital needs them, but that is not necessarily the case. Consumables are a really weird phenomenon here in Libya: any machine you buy comes with three-month supply, and when the consumables run out, it takes a long time to buy more. During this time, the machines are not available to provide services [2]. Another significant amount of money, more than US$1 billion, is wasted by medical supply organizations or MSOs. The MSO is working as a third party that purchases and distributes medicines for Libya. The MSO, unfortunately, is not adequately monitored and supervised. There is lot of waste at this level [3]. We have another problem with medical supplies. Medical supplies are in the hands of the MoH. There is a separate institution under the MoH that brings all the medicines, drugs, and medications into the country. And the medical supplies are distributed not based on need, but based on numbers, on some sort of percentage. We do not have regular supplies and equipment [6]. Medical supply is another problem in Libya. We have a department, the supply department, which is responsible for importing and distributing medicines throughout the country. The process of purchasing medicines is very bureaucratic and takes a long time to complete. You cannot imagine what happens. They will not distribute the products in the right way [10]."

The procurement process is managed by the MSO. This department plans and purchases all drugs and medical supplies. Many key informants consider the process of procurement as a significant problem; they believe that the process is either corrupt or takes long time to procure items due to bureaucratic red tape. Often, procurements are carried out without regard to needs. The lack of appropriate guidelines encourages the purchase of expensive equipment when less expensive equipment should be adequate for the country. Examples of this issue, as mentioned by key informants include:

"But, only a few km away, the MoH decides to install a brand new CT machine in a PHCF or a complex, just because of the people from the outside put pressure on the MoH to install this CT. So, the CT is installed in the wrong place, at the wrong time, and with the wrong indication. This is not based on the needs of the patients, but mainly on political and not rational decisions [2]. Unfortunately, there has been no tender since 2009. And the MoH has tried to provide medicine and medical devices through elegant purchases. Purchases which were done through direct orders. As you may know, the best procedure for providing medicine and medical devices is open tendering [4]. Executive legislation governing the process of procurement is deficient. There is no uniform overall strategy and guidelines governing the process of procurement. No negotiating power exercised when purchasing drugs from outside the country [13], and the futility of procurement that is frequently directed to expensive equipment [14]."

Key informants also stated that there were some attempts to address these issues in the past, without any success. These attempts failed to change the way things are done things under the MSO. Some informants believe that making health care facilities more autonomous by enabling them to plan their own needs and purchase their equipment and medicine might be useful in both decreasing corruption and increasing efficiency, while others recommend changes in the way medical products and technologies are procured. The suggestion was made to contract directly with suppliers rather than going through the MSO.

"Purchasing is a problem. I have encountered many problems in this area. If you are trying to sell a medicine or device in Libya, you have to have a representative in Libya. There is an office (Medical Supplies Office-MSO) under the MoH. This has to be stopped. I think the MoH could go directly to the big companies to contract supplies. It would save a lot of money and reduce corruption. Procurement is one of the most corrupt department in the MoH. I think it needs to be abolished. The MoH has to regulate these purchasing functions. The people who are guilty of corruption should be identified and punished, and exposed to the public……. Centralization increases corruption. I have witnessed a lot. I think centralization has to be completely abolished. It is necessary that the MoH be only a regulatory body, making strategies and plans. But the purchase of equipment, medicine and other things must be done locally. Autonomy must be given to hospitals and institutions. We need to give them financial responsibility. They should determine their needs. But

everything has to be regulated [5]. Once we purchased some equipment for a hospital. For heart surgery, I signed the paper. But 50,000 items were never delivered. I talked to the manager and told him: "We have spent a lot of money on this equipment. We need this equipment to start providing services". He said 'No, no. First we have to go to MSO (Medical Supply Organization)'. MSO is a completely massive organization [3]."

Registration, pricing, reimbursement, and availability of drugs were other issues that were discussed mostly in the interviews. Key informants stated that there is no proper registration process, no department responsible for pricing medical products and drugs, no proper reimbursement method, and problems with access to certain medicines and drugs in the Libyan health system.

"We do not register pharmaceuticals or medical devices. The last registration for pharmaceutical products was in 1995. Since 1995, we do not register medicines in Libya. The two most important elements for registration are quality and source, and a reasonable price. Even if we put out open tenders, we are sure that we will not get true prices. Because we are not registering drugs and medical devices in the Pharmacy and Medical Devices Administration. We do not have a pharmaceutical pricing department. We tried to create a department for the pharmaceutical pricing, but we could not. All countries have a pharmaceutical pricing department [4]. There are certain criteria that must be met in order to import drugs. The drug has to be registered. There are active procedures of registration of medical dosage forms since 1983. However, no registration of drugs since 1995, there is only registration of the factory. Good Manufacturing Practice (GMP) rules are mandatory [13]."

Pricing is a major issue since there is no department responsible for setting prices. The process of setting prices has remained unclear. Key informants describe this issue as follows:

"Ministry of Economy is responsible for the pricing of medicines. The MoH is also responsible for drug pricing, and especially for the registration of pharmaceuticals and medical devices. What the Ministry of Economy does is cost plus. It calculates the cost of imported medicine and applies a 20% profit

margin. But pharmacies and community pharmacies do not obey this rule and everybody sells what they want as they wish. You can find different prices ranging 20% to 50% from one pharmacy to another [4]. There is no pricing unit for drugs in Libya. The Ministry of Economy has a role to play, but it is limited. Compared to neighboring countries, prices of drugs in Libya are high [13]."

Libyan government spends considerable amounts of money on medical products and technologies. Based on the views of the participants of qualitative research, the consensus is that health policy or decision makers prefer to spend money on brand-new equipment or brand-name drugs that are generally more expensive than generic drugs. The Libyan government requires medical suppliers and pharmaceutical manufacturers to register in Libya. All manufacturers have to register all manufacturing facilities located in different countries even if they are owned by the same company. Before making or signing a contract to purchase drugs or devices, manufacturing facilities are visited by Libyan officials to check that they meet the requirements of Good Manufacturing Practices (GMPs). Although the authorities are aware that many neighboring and MENA countries are using the generic drug policy to decrease the cost of medicine and use financial resources more efficiently, Libya insists on continuing to purchase branded drugs. This issue was criticized by many key informants as a source of corruption. In their words, this issue was described as:

"Before, most of our medicine was generic. Now they are branded, original. This happened in the last five years. There is an idea that generic medicine is not the same quality as original products. This is due to the fact that companies are importing medicines from the original medicine producers [4]. In the latest tender, there were some generic drugs. The Accounting Office has criticized the generic drugs. There is a negative effect of private companies on generic drugs. More measures are needed to test drugs and control them. The war between companies also contributes to negative effects on the image of generic drugs among the public. The reputation of some drugs from countries like Egypt, Turkey, and India is not good. This may be due to safety and security, and the absence of a drug import system. There is no local production of drugs [13]."

Libya has an updated list of essential medicines and these medicines are centrally procured, stored, and distributed by the MSO. Pharmacies located in public health care

facilities distribute these medicines to patients. However, many of the participants of the study mentioned that health facilities lack essential medicines, and that users of public health facilities usually purchase their prescribed medicines from private pharmacies by paying out-of-pocket, even though the medicines are supposed to be free for users when they access public health facilities. The lack of proper stores and cold chain, the slow procurement process due to bureaucratic controls, and similar problems in the medical supply chain make the health system inefficient and ineffective.

> *"We have our essential medicine list which is updated every two years in terms of inclusion or exclusion. Any medicine not on the list cannot be imported. But the MoH accepts orphan medicines [4]. They (MSO) focused on more expensive drugs that were not affordable for the population. They focused on specialized care rather than essential drugs. It is not the right policy. This policy needs to be changed. They need to put more essential drugs [12]. There are certain root causes of not having essential drugs. There is a list of adopted drugs. There is a detrimental effect of private companies that have strong negative influences. The essential drug list is not yet endorsed due to these interventions. The WHO is filling the gap of needed drugs through donations and support, while the UNICEF is ensuring the availability of vaccines [14].*

It is also necessary to mention that the Medical Law regulating the pharmaceutical sector is too old and needs updating. This issue affects other aspects of medical products and technologies in Libya, such as the rational use of drugs.

> *"We have our tailored national pharmaceutical policy which consists of 17 elements. The first element is legislation and regulation. For 30 years, we have been trying to adapt the drug bill and the pharmacy profession law. It is still project. We are dealing with the drug bill that was issued in 1973. Over 40 or 45 years. It hasn't changed. We have our national pharmaceutical policy and one of its elements is the rational use of medicines.... There are no standard treatment guidelines.... Last year we had some guidelines for certain chronic diseases. In community pharmacies, all medications are over the counter. There is no need for a prescription. You can get any medicine over the counter [4]."*

Health Information System

Health information system (HIS) ensures the production, analysis, dissemination and use of reliable and timely information on health determinants, health system performance and health status to make sound decisions. The HIS provides evidence to make better decisions.

Qualitative research participants mentioned four important elements of the health information system in Libya. In interviews, they stated that the health information system was incapable of processing good quality data and making it available to users.

Table 27. Sub-Codes and Frequency of Segments and Documents Containing Sub-Codes on Health Information System

Health Information System	Segments	Percentage	Documents
	24	**100.0**	
Inappropriate HIS	7	29,2	7
Data availability	7	29,2	4
Data processing	5	20,8	5
Quality	5	20,8	5
Documents with code(s)			8
Documents without code(s)			16
Analyzed documents			24

There were many attempts to improve the HIS in Libya, and some of these attempts were supported by international organizations. Libya used to have health information centers at the national, district and facility levels. The information collected was transmitted to the center and the data were analyzed at the center to produce annual reports. Lately, Libya has taken steps to develop and modernize the HIS. The country has established district HISs in cooperation with the EU, among others. So far, they managed to train many people and distribute the necessary equipment.

"The health information system is almost non-existent [18] …… First, we do not have a documentation system. Health information technology is really very fragmented and not interconnected.... That is a very big problem. We do not have IT [11]. But the challenge is data entry. People are not very motivated to enter data on a regular basis. They used to enter the data annually in the previous years. But now they are expected to enter data every month. If you

want them to enter data every month, they are not willingly to it. They are waiting for incentives. HIS is making slow progress [12]."

Data availability was another important issue frequently mentioned by key informants. Participants identified the collection, analysis and dissemination of good quality data as the main problems. They complain that they do not receive relevant data in a timely manner, which makes it difficult to make rational decisions. Key informants described this issue by saying:

"It is important even for PHCs. We need to have this monthly data on access, quality, coverage, etc. It is better than any report. There is not much data on the quality of service [12]. We do not use data, the decision making process is not based on information. Data is not really collected. Data is not collected and there is no real information. Even if some data is collected, it is not processed to produce information [17]. ….. First, there is no routine data flow system. This may be due in part to the fact that health workers in the periphery do not follow the instructions of the central health authorities. There is no regular collection of data [15]."

Producing good quality data is another important aspect of HIS, and key informants stated that the current HIS was not able to collect and disseminate good quality data. Participants think that it is necessary to address: who reports the data, how the information is obtained, and the process of reporting the data. It was clear that health system stakeholders have little or no trust in the data collected and reported, and some believe that the data reported is essentially fabricated information to show that things are improving.

"Normally at the local level, they always integrate the numbers in order to get more budgets [8]. There was an attempt to implement NHA in Libya. But it was not an initiative of the Ministry of Health. Rather, it was an international initiative. The MoH did not believe NHA was so necessary. There was not much investment in this area. We need the MoH to believe in it itself [12]. The quality of the current health information system in Libya is bad, data is inadequate, reliability is low, and timing is poor. Information is not properly disseminated even when it is present [16]. ….. But it is

problematic. It is fabricated data. They have been fabricating good news. They show that the system is ideal. It is the legacy of the previous system. They deny the problems by fabricating the numbers [21]."

Data processing is another issue. Key informants believe that the data collected are not processed properly to produce good information because of the weakness of the HIS and the lack of qualification of IT staff. The numbers are often not accurate.

"We need health information flows between the center and local branches in order to share information immediately [8]. Mainly, they share data on inputs and some numbers [12]. The third problem is in the area of data analysis, information processing, and intelligence. This in his view may be due to the lack of skilled personnel in the continuation of the data-information cycle [15]. The fabrication of numbers is sometimes intentional, but it is often unintentional. I don't blame the health information center, but the numbers are not accurate [21]."

Recommendations for Reform Proposals

Key informants were encouraged to present their own recommendations for health care reform. This was done either by asking direct questions on reforms or by soliciting solutions to issues they have raised during the discussions. Of the analyzed documents, 22 documents included recommendations for different aspects of the health system in Libya.

The parent code frequencies presented in Table 28 indicate that successful health care reforms need good governance and leadership, while service delivery and health system financing are the aspects for which many reforms should be adopted, according to the views of participants of the qualitative research.

Table 28. Sub-Codes and Frequency of Segments and Documents Containing Sub-Codes on Recommendations for Reform Proposals

Reform Areas	Segments	Percentage	Documents
	24	**100.0**	
Governance and leadership	59	33,0	16
Service delivery	37	20,7	11
Financing	27	15,1	3
Health Insurance Fund	*16*	*8,9*	*5*
Health workforce	11	6,2	7
Medical supplies	11	6,2	7
Health information system	2	1,1	2
Ongoing reforms	9	5,0	5
Recommendations	7	3,9	6
Documents with code(s)			22
Documents without code(s)			2
Analyzed documents			24

Key informant recommendations on governance and leadership were categorized under 11 sub-codes (Table 29).

Table 29. Sub-Codes and Frequency of Segments and Documents Containing Sub-Codes on Recommendations for Governance and Leadership

Reform Areas	Segments
	24
Governance and leadership	15
Direction and sustainability	12
Implementation	9
New institutions	4
Non-Governmental Organizations	4
Appropriate regulation	3
The role of international organizations	3
Communication	1
Transparency	1
Method and participation	1
Decentralization	1

Governance and leadership is the most important elements that must be carefully considered for successful implementation of health care reform proposals. With respect to governance and leadership, key informants expect government and political leaders to have clear vision with commitment to change of the health system and support health care reforms. They believe that health care reform activities should be on the agenda of political leadership rather than at the consultancy level.

Key informants were also asked about the direction of reforms. The aim of this question was to encourage dialogue on decentralization/recentralization, the role of government, and the current funding system, etc. Key informants believe that sustainability, having strategic plan, capacity building, and the way decisions are made or solutions created are important for successful health care reforms.

WHO should really use the seventh pillar which is sustainability. It is good to have a health system. But if it is not sustainable, it does not really work. I believe that sustainability is very important [3]. We have to have one government, we have to finish our strategic plan for 2030, we have to train our health care workers and attract them through funding, maintenance, and training [7]. We need to well distribute capacity well across the country, the new health system needs to be re-centralized [8]. We need to engage more with users, and local communities and civil society. Because the top-down approach is no longer useful, we need to put more down-top approach. People are not like before 2011. People expect more and want their voices to be heard [12].

Libya has been trying to transform and change its health system for many years, either by involving international organizations, supporting projects, or forming teams to develop more suitable health reforms. Although there are many reports and health reform proposals developed in the past, unfortunately none have been successfully implemented. Key informants recommend that health sector reform initiatives be pragmatic and tailored to Libya, and that they should be designed to gain the support of key stakeholders in the health system as well as the country's political leadership.

"Political leaders have to accept change. If they do not accept it, if they work with it, and implement it, they are not leaders. They are obstacles. Change always comes from leaders. Not from the public. The public accepts it later if they see good results [5]. Since 2013, the EU has launched a project called "Supporting health system reforms in Libya", but so far nothing has happened…… The solutions were not suitable for Libya. That's why there are so many workshops, meetings and reports on the table. No real improvement happened [9]. If these stakeholders are not convinced, they will of course resist [12]."

Key informants also stated that appropriate legal changes regulating all aspects of the health system, increased transparency in the decision-making process, and opportunities for stakeholders and nongovernmental organizations to participate in the development of health care reforms were other important aspects for successful implementation of health care reform proposals in Libya.

Table 30 presents the most common health financing reform recommendations made by key informants. Many key informants propose separating health financing from health provision. Although there is a decree requiring the establishment of a health insurance fund, it has not been implemented yet.

Table 30. Sub-Codes and Frequency of Segments and Documents Containing Sub-Codes on Recommendations for Health Financing

Health Financing	Segments
	19
Health Insurance Fund	12
Copayment	4
Purchaser-Provider Split	3

When this specific question was raised, key informants mentioned that they were in favor of the establishment of a stand-alone health insurance fund. But some also stated that a legal framework should be put in place for its implementation.

> *"It would be excellent idea (to create an autonomous health insurance fund). If we have transparency and if people have trust in this fund. .... It can be done if we can enforce by law. If we have the capacity. By Law, we have to punish those who steal or abuse the system. Otherwise, it does not work [3]. In this system, it is important to have self-sustaining health care facilities. You are selling your services. Insurance is a good idea [5]. When first I heard about the insurance-based health care system, I was opposed to the idea. Soon after, I became quite happy with the idea. I have been convinced by the national health insurance fund. I think health care workers and citizens have seen so much corruption and problems that they are ready for any major change [2]. Finance is one of the major issues. It is about corruption and monopoly. I think the reason for developing a new financing system is trying to deal with this highly corrupt network. Because at the moment, the money you put into the system basically is is kind of the same and is wastefully spent [21]."*

Key informants also indicate that purchaser-provider split and the introduction of co-payments for health care users are important to deal with corruption in the system. The statements they included the following:

> *"I fully agree that the flow of funding is a problem in Libya. The MoH provides and funds health services. That is a problem. Another agency should be responsible for funding. It is better to separate funding from service delivery. By doing so, the MoH may provide better services. If I have a good answer to the question about dealing with corruption, I can get Nobel Prize. Privatization and medical insurance are good ideas. Separating funding from service delivery [10]. I have enough patient on my waiting list. I think, and I really say this from the bottom of my heart, that the only solution is to work with a co-payment. The patient can pay 10 or 20% more to get a service from the private [1]. When I made the executive order, many people called me and asked why we were charging people. Charging extra might be acceptable when people need to use private health care and pay the money to private health care facilities [3]."*

When key informants asked whether they had a reform recommendation for service delivery or specific solutions to problems, most gave recommendations on the role of private sector, centralization/decentralization issues, organization and autonomy, and competition among providers as shown in Table 31.

Table 31. Sub-Codes and Frequency of Segments and Documents Containing Sub-Codes on Recommendations for Service Delivery

Service Delivery	Segments
	14
Private Sector	7
Centralization - Decentralization	3
Organization and autonomy	2
Competition	2

Key informants felt that the role of the private sector in health service delivery needs strengthening. Some thought that the country should move cautiously in expanding private providers, while others thought that appropriate regulations were needed for the private sector before moving forward with significant private sector expansion. When private sector was the focus of discussions, the role of the public sector was also

addressed. The key informants stated that the government should focus on primary health care and they would like to see the private sector not as a competitor but as a partner to the public sector. In the words of key informants, this issue was described as follows:

> *"The budget is really quite important for the first five years for implementable reforms. ..... I am totally against the idea of going straight to a full private sector. That is corruption. It is not a good strategy [5]. Solutions for increasing the effectiveness of the health financing system in Libya include privatization and control of private facilities [16]. Forging a collaborative and effective partnership with the private sector. Currently, the private sector accounts for (contributes) 50% of secondary and tertiary care in Libya. We need to develop an effective partnership with private sector. Without the private sector, it will be difficult to move forward [21]. The government could close some hospitals and concentrate on one hospital in every city. The private sector can build new hospitals. We have a lot of expertise in Europe and the US. They may come back to Libya only if the private sector improves [1]."*

Key informants mentioned that there was no clear vision on the degree of decentralization of the health system in Libya or the areas in which local government should play a greater role.

> *"As a hospital manager, if I have the ability to purchase my own medicine with my own budget and receive the money through private insurance companies to pay patients, it will result in better quality [3]. When we talk about health reform actually, we say that all the central body must be responsible for planning, monitoring and evaluation. Implementation must be done at the periphery. It doesn't matter where the money comes from, whether it's health insurance fund or the MoH. This is the future of the Libyan health system [7]. Directly managing hospitals and other facilities, including supplies, perhaps importing equipment from other companies. I really believe that the MoH should prepare a guideline on how to ensure quality. And then leave the implementation to the local level. There are health regions, regional offices and branches. But there is no clear relationship between the MoH and regional branches [8]."*

The autonomy of health care facilities was discussed as an appropriate solution to some problems.

> *"The government can contract with insurance companies to sell their services. Autonomy is a good way; it guarantees good quality health services. It is good for autonomous hospitals to get their money through a partnership, trust, or health insurance fund [5]. We have six health regions in Libya. These six regions must take the most of the referral work. But the current situation, the Tripoli region takes the most referrals in almost the whole country in terms of preventive and treatment. The MoH should be responsible for planning, evaluation and monitoring. In each region, there should be one big hospital that functions as a referral hospital. There should be one medical university with curricula for nursing, dentistry, pharmacy and medical schools. And there should be a referral system in each region. But the MoH should be in charge of primary health care and small hospitals [7]."*

When the focus of discussion of the interviews was on the health workforce, key informants mainly emphasized reforms to improve managerial leadership, performance appraisal, and increase the number of qualified Health care staff.

> *"We should support public hospitals by training their leaders and we need young leaders, not older than 35. This is our problem in Libya [11]. There are many possible solutions to increase the number of medical staff for nurses. Currently, a human resource strategy is underway. A study is trying to identify the gaps, whether it is a shortage, understaffing, or over staffing, since the solutions would be different in each case [15]. There is no annual performance appraisal. To solve this problem, it is necessary to unite HR functions [21]."*

According to the key informants, the aspect of medical products and technologies needs to be reformed in terms of procurement and distribution of medical supplies and drugs, rational use of drugs, pricing and organization.

Table 32. Sub-Codes and Frequency of Segments and Documents Containing Sub-Codes on Recommendations for Medical Products and Technologies

Medical Products and Technologies	Segments
	13
Buying and distribution	4
Rational drug use	2
Storing	2
Pricing	2
Reorganization	1

There are many problems and obstacles to consider in this aspect, and one of them is the essential drug list. One of the interviews identified this problem and proposed the following solution:

> *"There are many possible solutions for increasing the effectiveness of medical supply and pharmaceutical sector in Libya. The Libyan Directorate of Medical Equipment and Pharmaceuticals is developing an electronic system. At one point, the system involved two lists. The first is a general list that could be provided by all hospitals. The drugs on this list are available on the national market, as many private companies are freely allowed to import these drugs. Meanwhile, in order not to have to deal y with a long list of drugs, the government is in charge of a list that contains only six categories of drugs. These include items such as vaccinations, anesthesia, oncology, mental health drugs and insulin. It is now common for hospitals to respond that a particular drug is not available. Insurance reimbursement would also be a solution and could contribute to solving pharmaceutical deficits [15]"*

Another participant recommended reorganizing the MSO to deal with corruption and increase local production capacity in Libya, saying:

> *"Strive to eliminate corruption by reducing the number of institutions concerned with medical supply and enabling and stabilizing the only responsible administration (pharmacy department) to carry out its work without interference from any other department. With expansion of drug production, efforts should be made to register a specific number of each drug item (especially in the public sector) and a specific number of production companies to work in Libya to ensure that counterfeit and ineffective drugs are not leaked [16]."*

Another key informant suggests numerous reform proposals regarding procurement and medical technology, from reorganization to procurement to registry, stating that:

> *"We need to adapt pharmacy and medicinal professional Law. Then, start the registration of medical products. Then, create a pharmaceutical pricing department within the Pharmacy and Medical Devices Administration. Issuing a regulation on medical procurement that should be specialized in the procurement of pharmaceuticals and other medical supplies. Medical procurement should be carried out by a specialized procurement office and temporarily committees. This should be a fixed office within the MoH. There should be a sufficient number of medical stores in all cities and implementation of good procurement and distribution practices. The good procurement practice, mentioned earlier, is single source, registration, and price negotiation. Multiple sources require competitive tendering, which should be open. Over the past five years there has been a rumor about generic medicine. All countries use and/or import generic medicines [4]."*

Another key informant indicated that drug supply and medical technology needed to be reformed in terms of rational use of drugs, proper storage, good planning, price collection and comparison, equitable distribution, use of information technology to increase efficiency and availability of medical supplies and drugs.

> *"Awareness campaigns for patients through the media for rational use. Building appropriate medical stores in accordance with international standards. Establish a plan to dispose of medical waste and expired items. Follow the international price guide and Libyan drug list when prepare procurements. Distribute medical supplies equitably among hospitals and regions. Maintain a strategic stock for abnormal situations. Connect all medical institutions and hospitals with an electronic system to ensure accuracy and speed of information flow [16].*

4.2.3 The Findings of the Health Survey

The purpose of the health survey is to gain a better understanding of the system's capacity/limitations in meeting the demand for health services and the responsiveness of the system. The demographic characteristics of the health survey respondents are presented in Table 33. Of the 83 respondents, the majority (77.1%) were male and aged over 40 years (73.4%). A large majority of the respondents worked in two major cities in Libya (60.2% in Tripoli, 19.3% in Benghazi), and 71.1% had medical training and worked as physicians. About 19.3% of respondents reported being health care

managers, and 59.2% earned about and above the national per capita income. Given these statistics on the demographic characteristics of respondents, it can be concluded the respondents are highly experienced with the health care system and should be able to assess the problems and concerns of the health care system.

Table 33. Demographic Characteristics of Participant Health Care Providers in the Health Survey

Demographic Characteristics	n	Percent
Gender		
Female	18	21.7
Male	64	77.1
Age		
20-29 years old	1	1.2
30-39 years old	21	25.3
40-49 years old	26	31.3
50-59 years old	27	32.5
60 years old and more	8	9.6
Health Region		
Eastern	5	6.0
Benghazi	16	19.3
Middle	5	6.0
South	5	6.0
Tripoli	50	60.2
Western	2	2.4
What is your training?		
Medicine	59	71.1
Pharmacy	3	3.6
Dentist	5	6.0
Health care management	16	19.3
Are you working on a regular basis?		
Yes, I am working full time	64	77.1
Yes, but I am working part time	17	20.5
No, I am unemployed	2	2.4
What is your duty?		
Physician	59	71.1
Pharmacist	3	3.6
Dentist	3	3.6
Health care manger	18	21.7
How do you define your income level?		
Lower than per capita national income	33	39.8
At around per capita national income	38	45.8
Above per capita national income	11	13.3

Table 34 presents the level of satisfaction of respondents with different aspects of health care system in Libya. It is clear that the level of satisfaction with the overall health system is far from desired. Out of 83 respondents 83.1% stated that quality and adequacy of services provided by primary health care facilities are either very unsatisfactory or just unsatisfactory. Satisfaction with curative care services provided by hospitals is also low -- only 2.4% of respondents reported that the level of satisfaction with curative care services was satisfactory. Interestingly, the level of satisfaction with services provided by private health care providers is also very low. About 60% of respondents reported the level of satisfaction was highly unsatisfactory or just unsatisfactory for private health care providers. Respondents also reported that their level of satisfaction with the quality and appropriateness of medicines and medical equipment provided by public primary health care facilities or hospitals was either very unsatisfactory (25.3%) or just unsatisfactory (44.6%). The level of direct health payments was rated as high (26.5%) and very high (21.7%) by respondents. The vast majority of respondents rated the overall performance of Libyan Health System as either very unsatisfactory (37.3%) or just unsatisfactory (50.6%). All respondents believe that the Libyan health system needs reform. Corruption was reported as the most important reason increasing the need for health reform in Libya. Access, quality, cost, safety, efficiency, and coverage were listed as equally important issues facing the Libyan health system. When asked to rank priorities, respondents reported that health workforce problems should be the first priority to be addressed. However, other aspects of health system were also identified as priorities to be addressed.

Table 34. The Views of Participant Health Care Providers on the Satisfaction with Different Aspects of the Libyan Health Care System

Satisfaction with Health System in Libya	N	Percent
How would you rate the quality and appropriateness of the services provided by primary health care facilities?		
Very unsatisfactory	29	34.9
Unsatisfactory	40	48.2
Neither satisfactory nor unsatisfactory	9	10.8
Satisfactory	5	6.0
How would you rate the quality and appropriateness of the services provided by hospitals?		
Very unsatisfactory	22	26.5
Unsatisfactory	42	50.6
Neither satisfactory nor unsatisfactory	17	20.5
Satisfactory	2	2.4
How would you rate the quality and appropriateness of the services provided by private primary health care facilities or hospitals?		
Very unsatisfactory	19	22.9

Unsatisfactory	31	37.3
Neither satisfactory nor unsatisfactory	22	26.5
Satisfactory	10	12.0
How would you rate the quality and appropriateness of medicines and medical equipment provided by public primary health care facilities or hospitals?		
Very unsatisfactory	21	25.3
Unsatisfactory	37	44.6
Neither satisfactory nor unsatisfactory	14	16.9
Satisfactory	11	13.3
How would you rate the level of out-of-pocket payments in the health system in Libya for effective and appropriate services and medicine?		
Very Low	11	13.3
Low	19	22.9
Acceptable enough	13	15.7
High	22	26.5
Very high	18	21.7
How would you rate the overall performance of the private health sector in Libya?		
Very unsatisfactory	22	26.5
Unsatisfactory	35	42.2
Neither satisfactory nor unsatisfactory	18	21.7
Satisfactory	8	9.6
How would you rate the overall performance of the Libyan Health System?		
Very unsatisfactory	31	37.3
Unsatisfactory	42	50.6
Neither satisfactory nor unsatisfactory	8	9.6
Satisfactory	2	2.4
Do you believe that the Health System of Libya needs reforming?		
Yes	83	100.0
If you believe that reforming the health sector is a need for Libya, which of the following reasons reinforces this need?		
Corruption	78	94,0
Unmet expectations	73	88,0
Political conflict	66	79,5
Rising expectations	63	75,9
Rising costs	61	73,5
How would you rank the following possible potential problems in the Libyan Health System highest to lowest priority?		
Access	78	94,0
Quality	78	94,0
Cost	78	94,0
Safety	77	92,8
Efficiency	77	92,8
Coverage	75	90,4

How would you rank the six main aspects of a health system, highest to lowest priority, to reduce the problems observed in the Libyan Health System?		
Workforce	78	94,0
Health Information System	77	92,8
Medical Supplies	77	92,8
Delivery	76	91,6
Financing	73	88,0
Leadership and Governance	73	88,0

Tables 35- 41 show the views of respondents in the health survey regarding the six main aspects of the components of the health system in Libya. The views of respondents were presented both as frequencies and percentages, and as mean scores for questions related to each component in terms of different aspects, and the views were ranked from highest to lowest based on the mean score. In a five-point Likert-type scale, 1 represents the lowest score, which is very poor, and 5 represents the highest score, which is very good. In this scale, if the average score is less than 3, which represents moderate score, it can be concluded that the building block in question plays its expected role poorly or very poorly.

Assessment of leadership and governance in health system of Libya: The overall score of the leadership and governance assessment, which was evaluated using 13 questions, is only 1.5, meaning that leadership and governance are less than poor or even close to very poor. The highest score was calculated as 1.6 for the question "creating or using appropriate incentives for managers to run their facilities effectively and responsibly". However, adequate delegation of administrative and financial responsibilities, managerial capacity of managers, protection of patients' rights, effective management of the health care system and facilities, and transparency of decisions were all rated very low. All these results are consistent with the findings of qualitative research in this report (Table 35).

Assessment of health system financing in Libya: The overall score for the health system financing assessment was also very low (1.6). The item "allocating sufficient funds to the health system" received the highest score, which is only 2.1 and close to poor, while the other 12 items questioning the financing of the health system in Libya in terms of effectiveness, efficiency, protection of the poor, and other important aspects received lower scores, below 2.0. Considering these scores, one can conclude that the health system has witnessed very serious problems. The protection of the poor from out-of-pocket payments and the use of reimbursement methods to increase efficiency were areas of concern. These results also reveal that the way money is used rather than the source of revenue is a more significant problem in financing the health system (Table 36).

Assessment of delivery of health services in Libya: The views of participants were collected when assessing the performance of health service delivery separately for primary health care and curative care services and facilities. The overall score for primary

health care services was found to be 2.2, which is close to poor. The highest score (3.2) was given to the item "the number of primary health care providers". This result is consistent with the views of key informants and with figures reported numbers by SARA in Libya. It seems that the number and physical accessibility of primary care facilities received relatively better scores. However, the remaining 12 items regarding quality, responsiveness, appropriateness, and satisfaction with primary care services were rated as poor or very poor since they received average scores of 2.0 or less. Coordination between primary health care facilities and referral hospitals was found to be the worst item regarding primary health care performance (Table 37). Similar results were also found for secondary and tertiary care services. The findings reported in Table 38 indicate that the number, distribution of hospitals across the country, and accessibility of hospitals received relatively better scores. However, hospitals as providers of secondary and tertiary care services were rated as very poor or poor in terms of their ability to meet patient needs, provision of effective and quality equipment, managerial capability of officials, satisfaction level, and appropriateness of network connections among hospitals (Table 38). These results are consistent with the views of the key informants and literature research findings on the Libyan health system.

Assessment of health workforce in Libya: The findings in Table 39 indicate that the respondents believe that the numbers of health professionals (pharmacists, doctors, and nurses) is much better, and this finding is consistent with SARA Libya and the views of key informants in the qualitative research. The findings also reveal that there are problems with the distribution, quality, salaries, and motivation of the health workforce, and these problems were also frequently mentioned by the key informants. The overall score for the health workforce was estimated as 2.2, which is close to poor. These results simply suggest that health reforms regarding the health workforce in Libya should focus on increasing quality, distribution and motivation rather than increasing the number of health workers (Table 39).

Assessment of medical supply and technology in Libya: The performance of medical supply and technology was rated using 11 items by the health survey respondents. The overall score was estimated as 1.9, which is low. The highest score (2.5) was found for the item "rational prescription by physicians". However, the estimated mean scores for the items regarding regulations, accessibility and affordability of effective medicines, supply management, storage, and pricing were found to be very low, which means poor or very poor, and indicated serious problems with medical supply and technology (Table 40).

Assessment of health information in Libya: The performance of health information was assessed using 12 items, and all items received very low scores, below 2.0, meaning poor or very poor. The overall health information score was also 1.5. These findings simply suggest that health information needs to be improved in many aspects. The ability to use e-health solutions, staff capacity, infrastructure, timely monitoring of health system

performance, ability to obtain data, and production of up-to-date data on disease burden or outcomes were the items that received very low scores. The vast majority of respondents (40% and more) believe that health information shows very poor or poor performance in all health information assessment elements (Table 41).

Table 35. Assessment of Participant Health Care Providers in Health Survey Regarding Leadership and Governance

LEADERSHIP AND GOVERNANCE	V. Poor	%	Poor	%	Mod.	%	Good	%	V. Good	%	Total	Mean	S. Dev.
Creating or using appropriate incentives for managers to manage their facilities in efficient and responsible manner	38	57.6	22	33.3	3	4.5	1	1.5	2	3.0	66	1.6	0.9
Creating a clear vision for whole health system	43	65.2	18	27.3	4	6.1	0	0.0	1	1.5	66	1.5	0.7
Making strategic plans for health system and its components	41	62.1	19	28.8	4	6.1	0	0.0	2	3.0	66	1.5	0.9
Incorporating the views of key health stakeholders into decisions	42	63.6	16	24.2	5	7.6	1	1.5	1	1.5	65	1.5	0.8
Making appropriate regulations at all levels	38	57.6	22	33.3	5	7.6	1	1.5	0	0.0	66	1.5	0.7
Coordination level among local health authorities and municipalities	36	54.5	24	36.4	6	9.1	0	0.0	0	0.0	66	1.5	0.7
Role of MoH in planning and coordinating activities of Libyan Health System	36	54.5	25	37.9	4	6.1	1	1.5	0	0.0	66	1.5	0.7
Delegating administrative and financial responsibilities and authorities adequately	43	65.2	17	25.8	6	9.1	0	0.0	0	0.0	66	1.4	0.7
Accountability of given decisions	45	68.2	19	28.8	1	1.5	1	1.5	0	0.0	66	1.4	0.6
Capacity of managers and administrators to lead and govern the health system	43	65.2	18	27.3	5	7.6	0	0.0	0	0.0	66	1.4	0.6
Providing and protecting patient rights	45	68.2	16	24.2	4	6.1	1	1.5	0	0.0	66	1.4	0.7
Managing health system and Health care facilities in an effective and efficient manner	47	71.2	16	24.2	2	3.0	0	0.0	0	0.0	65	1.3	0.5
Transparency in all levels and decisions	51	77.3	12	18.2	3	4.5	0	0.0	0	0.0	66	1.3	0.5
AVERAGE SCORE												**1,5**	**0,7**

Table 36. Assessment of Participant Health Care Providers in Health Survey Regarding Health System Financing

HEALTH SYSTEM FINANCING	V. Poor	%	Poor	%	Mod.	%	Good	%	V. Good	%	Total	Mean	S. Dev.
Allocating enough fund to health system	24	36.4	22	33.3	13	19.7	4	6.1	3	4.5	66	2.1	1.1
Fair and adequate financing of primary Health care facilities	30	45.5	24	36.4	10	15.2	2	3.0	0	0.0	66	1.8	0.9
Fair distribution among regions and municipalities providing Health care	30	45.5	26	39.4	8	12.1	1	1.5	1	1.5	66	1.7	0.8
Providing financial support for lifesaving or health programs for healthy living	32	48.5	28	42.4	5	7.6	1	1.5	0	0.0	66	1.6	0.7
The effectiveness of purchasing decisions	32	48.5	29	43.9	4	6.1	1	1.5	0	0.0	66	1.6	0.7
The efficacy of purchaser-provider split	31	47.0	32	48.5	2	3.0	1	1.5	0	0.0	66	1.6	0.6
Making cost-effective contracts with providers	35	53.0	27	40.9	4	6.1	0	0.0	0	0.0	66	1.5	0.6
Auditing medical bills of providers	35	53.0	25	37.9	5	7.6	0	0.0	0	0.0	65	1.5	0.6
Providing incentives to Health care providers to increase value for money	42	63.6	23	34.8	1	1.5	0	0.0	0	0.0	66	1.4	0.5
Using purchasing mechanisms strategically to increase efficiency	41	62.1	22	33.3	3	4.5	0	0.0	0	0.0	66	1.4	0.6
Paying cost-effective Health care technologies	40	60.6	24	36.4	2	3.0	0	0.0	0	0.0	66	1.4	0.6
Using effective reimbursement methods to increase efficiency among Health care providers (global budget, DRG, etc.)	48	72.7	18	27.3	0	0.0	0	0.0	0	0.0	66	1.3	0.4
Protecting the poor against catastrophic health expenditure by eliminating higher out-of-pocket health expenditures	47	71.2	18	27.3	1	1.5	0	0.0	0	0.0	66	1.3	0.5
AVERAGE SCORE												**1.6**	**0.7**

Table 37. Assessment of Participant Health Care Providers in Health Survey Regarding Primary Care

PRIMARY CARE (PREVENTIVE AND PROMOTIVE)	V. Poor	%	Poor	%	Mod.	%	Good	%	V. Good	%	Total	Mean	S. Dev.
Number of primary health care providers	5	7.6	15	22.7	16	24.2	21	31.8	8	12.1	65	3.2	1.2
Physical accessibility of primary health care providers	6	9.1	15	22.7	28	42.4	16	24.2	1	1.5	66	2.9	0.9
Ability to access the needed services in all primary care providers	15	22.7	30	45.5	14	21.2	7	10.6	0	0.0	66	2.2	0.9
Fair distribution of primary health care providers across country and regions	19	28.8	23	34.8	18	27.3	4	6.1	2	3.0	66	2.2	1.0
Accessibility of rural population to primary health care providers	16	24.2	27	40.9	17	25.8	4	6.1	2	3.0	66	2.2	1.0
Availability of preventive and curative services for maternal, newborn and child health	18	27.3	28	42.4	14	21.2	4	6.1	2	3.0	66	2.2	1.0
Ability to equip with better and advance health technology	20	30.3	26	39.4	16	24.2	4	6.1	0	0.0	66	2.1	0.9
The physical condition of primary health care facilities	19	28.8	26	39.4	16	24.2	4	6.1	1	1.5	66	2.1	1.0
Capacity to provide effective and fair primary care services to all	21	31.8	25	37.9	17	25.8	2	3.0	1	1.5	66	2.0	0.9
Meeting patient needs in acceptable time limits	17	25.8	32	48.5	14	21.2	3	4.5	0	0.0	66	2.0	0.8
Referring and leading patients to most appropriate health facilities and providers	22	33.3	27	40.9	13	19.7	4	6.1	0	0.0	66	2.0	0.9
Supplying needed effective and quality material and medicines to primary health care facilities	17	25.8	37	56.1	10	15.2	2	3.0	0	0.0	66	2.0	0.7
Level of citizen satisfaction with primary health care facilities	26	39.4	32	48.5	7	10.6	1	1.5	0	0.0	66	1.7	0.7
Coordination between primary health care facilities and referral hospitals	38	57.6	19	28.8	8	12.1	1	1.5	0	0.0	66	1.6	0.8
AVERAGE SCORE												**2.2**	**0.9**

Table 38. Assessment of Participant Health Care Providers in Health Survey Regarding Secondary and Tertiary Care

SECONDARY AND TERTIARY CARE (TREATMENT)	V. Poor	%	Poor	%	Mod.	%	Good	%	V. Good	%	Total	Mean	S. Dev.
Number of hospitals	9	13.8	16	24.6	21	32.3	13	20.0	7	10.8	66	2.9	1.2
Fair distribution of hospitals across country and regions	11	16.9	21	32.3	23	35.4	8	12.3	3	4.6	66	2.6	1.1
Accessibility of rural population to hospitals	14	21.5	21	32.3	22	33.8	8	12.3	1	1.5	66	2.4	1.0
Capacity to provide effective and right treatment in hospitals	10	15.4	33	50.8	20	30.8	2	3.1	0	0.0	65	2.2	0.7
Ability to equip hospitals with better and advance health technology	18	27.7	28	43.1	12	18.5	7	10.8	1	1.5	66	2.2	1.0
Physical condition of secondary and tertiary care facilities	13	20.0	35	53.8	14	21.5	3	4.6	1	1.5	66	2.2	0.8
Ability to access the needed treatment services in all hospitals	12	18.5	39	60.0	9	13.8	5	7.7	0	0.0	65	2.1	0.8
Staffing secondary and tertiary care facilities with skilled health care personnel	17	26.2	29	44.6	17	26.2	3	4.6	0	0.0	66	2.1	0.8
Level of efficiency in terms of occupancy rate	15	23.1	31	47.7	19	29.2	1	1.5	0	0.0	66	2.1	0.8
Ability to meet the majority of patients' health needs in the same hospital without referring them to other hospitals and districts	15	23.1	39	60.0	11	16.9	1	1.5	0	0.0	66	2.0	0.7
Supplying enough and better-quality medicine and drugs to secondary and tertiary care facilities	19	29.2	34	52.3	10	15.4	3	4.6	0	0.0	66	2.0	0.8
Supplying needed effective and quality equipment and medicines to secondary and tertiary care facilities	21	32.3	33	50.8	9	13.8	2	3.1	1	1.5	66	1.9	0.8
Management of secondary and tertiary care facilities	33	50.8	20	30.8	13	20.0	0	0.0	0	0.0	66	1.7	0.8
Level of citizen satisfaction with secondary and tertiary care facilities	25	38.5	34	52.3	7	10.8	0	0.0	0	0.0	66	1.7	0.6
Level of appropriateness of network connections among hospitals	41	63.1	19	29.2	5	7.7	1	1.5	0	0.0	66	1.5	0.8
AVERAGE SCORE												**2.1**	**0.8**

Table 39. Assessment of Participant Health Care Providers in Health Survey Regarding Health Workforce

HEALTH WORKFORCE	V. Poor	%	Poor	%	Mod.	%	Good	%	V. Good	%	Total	Mean	S. Dev.
Number of pharmacists	3	4.6	12	18.5	23	35.4	13	20.0	15	23.1	66	3.4	1.2
Number of physicians	6	9.2	10	15.4	23	35.4	18	27.7	8	12.3	65	3.2	1.1
Distribution of pharmacists across regions and cities	9	13.8	21	32.3	23	35.4	9	13.8	4	6.2	66	2.7	1.1
Number of nurses/midwifes	16	24.6	25	38.5	13	20.0	9	13.8	3	4.6	66	2.4	1.1
Quality and safety of services provided by Health care personnel	12	18.5	28	43.1	22	33.8	4	6.2	0	0.0	66	2.3	0.8
Responsiveness level of Health care personnel	11	16.9	27	41.5	25	38.5	3	4.6	0	0.0	66	2.3	0.8
Fairness of services provided by Health care personnel	9	13.8	31	47.7	24	36.9	2	3.1	0	0.0	66	2.3	0.7
Number of specialized physicians and nurses	11	16.9	32	49.2	16	24.6	5	7.7	2	3.1	66	2.3	0.9
Distribution of physicians across regions and cities	24	36.9	29	44.6	9	13.8	4	6.2	0	0.0	66	1.9	0.9
Distribution of nurses/midwifes across regions and cities	28	43.1	23	35.4	11	16.9	4	6.2	0	0.0	66	1.9	0.9
Satisfaction level of citizens with health care personnel	25	38.5	31	47.7	10	15.4	0	0.0	0	0.0	66	1.8	0.7
Education and training capacity of health system	29	44.6	29	44.6	6	9.2	2	3.1	0	0.0	66	1.7	0.8
Salaries of health care personnel	33	50.8	24	36.9	9	13.8	0	0.0	0	0.0	66	1.6	0.7
Quality of continuous education for health workforce	44	67.7	19	29.2	3	4.6	0	0.0	0	0.0	66	1.4	0.6
Motivation of health care personnel	42	64.6	21	32.3	3	4.6	0	0.0	0	0.0	66	1.4	0.6
AVERAGE SCORE												**2.2**	**0.9**

Table 40. Assessment of Participant Health Care Providers in Health Survey Regarding Medical Supply and Technology

MEDICAL SUPPLIES AND TECHNOLOGY	V. Poor	%	Poor	%	Mod.	%	Good	%	V. Good	%	Total	Mean	S. Dev.
Rational prescription among physicians	6	9.1	26	39.4	30	45.5	4	6.1	0	0.0	66	2.5	0.7
Regulations for storing and dispensing drugs across the country	20	30.3	23	34.8	18	27.3	5	7.6	0	0.0	66	2.1	0.9
Fair distribution of medical drugs and supplies among regions and cities	22	33.3	26	39.4	17	25.8	1	1.5	0	0.0	66	2.0	0.8
Regulations for importing drugs	24	36.4	22	33.3	15	22.7	4	6.1	1	1.5	66	2.0	1.0
Accessibility to effective medicine and other pharmaceutical products	23	34.8	28	42.4	14	21.2	1	1.5	0	0.0	66	1.9	0.8
Regulations for the implementation of the good manufacturing practice of medicines	28	42.4	22	33.3	12	18.2	2	3.0	1	1.5	65	1.9	0.9
Affordability of effective medicine and other pharmaceutical products	24	36.4	30	45.5	11	16.7	1	1.5	0	0.0	66	1.8	0.8
Availability of effective medicine and other pharmaceutical products	28	42.4	24	36.4	14	21.2	0	0.0	0	0.0	66	1.8	0.8
Supply management and regulation of medical products	30	45.5	25	37.9	10	15.2	1	1.5	0	0.0	66	1.7	0.8
Regulations and measures for counterfeit drugs	38	57.6	22	33.3	3	4.5	2	3.0	1	1.5	66	1.6	0.8
Regulations for pricing	33	50.0	25	37.9	4	6.1	3	4.5	0	0.0	65	1.6	0.8
AVERAGE SCORE												**1.9**	**0.8**

Table 41. Assessment of Participant Health Care Providers in Health Survey Regarding Health Information

HEALTH INFORMATION	V. Poor	%	Poor	%	Mod.	%	Good	%	V. Good	%	Total	Mean	S. Dev.
Reliability of health information system	30	45.5	23	34.8	10	15.2	3	4.5	0	0.0	66	1.8	0.9
Availability of skilled human resources for health information system	28	42.4	27	40.9	10	15.2	1	1.5	0	0.0	66	1.8	0.8
Quality of health information system	35	53.0	23	34.8	7	10.6	1	1.5	0	0.0	66	1.6	0.7
Capacity to provide timely data and information	35	53.0	23	34.8	8	12.1	0	0.0	0	0.0	66	1.6	0.7
Capacity to disseminate information	35	53.0	21	31.8	10	15.2	0	0.0	0	0.0	66	1.6	0.7
Ability to use data and statistics to make better decisions	39	59.1	20	30.3	6	9.1	1	1.5	0	0.0	66	1.5	0.7
Ability to use e-health solutions for health information system	40	60.6	20	30.3	6	9.1	0	0.0	0	0.0	66	1.5	0.7
Ability of personnel to use health information system	43	65.2	20	30.3	3	4.5	0	0.0	0	0.0	66	1.4	0.6
Health information infrastructure	45	68.2	16	24.2	5	7.6	0	0.0	0	0.0	66	1.4	0.6
Monitor health system performance in a timely manner	42	63.6	21	31.8	3	4.5	0	0.0	0	0.0	66	1.4	0.6
Capacity to obtain data from all facilities at all levels	42	63.6	19	28.8	5	7.6	0	0.0	0	0.0	66	1.4	0.6
Producing updated data on disease burden, service usage and outcomes	44	66.7	17	25.8	4	6.1	1	1.5	0	0.0	66	1.4	0.7
AVERAGE SCORE												**1.5**	**0.7**

5

HEALTH CARE REFORM PROPOSALS AND RECOMMENDATIONS FOR SUCCESSFUL IMPLEMENTATION

Reforming health systems to strengthen their processes and outcomes is a continuous progression, with specific objectives and strategies evolving in response to critical needs and objectives. With rising health care costs and changing expectations of the population, health policy and decision makers have continuously to monitor the functioning and achievements of health systems. For this reason, the experience of other countries as well as evidence from Libya and the history of the Libyan health system have shaped the health reform proposals in this report.

5.1 Proposed Health Reforms

Evidence from national and international reports and statistics, as well as the findings of the qualitative research and quantitative survey, indicate that Libya needs to embark on a serious health care reform process to meet the expectations of its citizens. The proposed health reforms are grouped into six areas. Problems and obstacles are summarized in each area to allow for a better understanding of the proposed reforms to the health care system in Libya.

5.1.1 Reforms for Governance and Leadership

Libya has a large area and widely dispersed population. Throughout most of history, the different regions in Libya have been closely related to each other in different ways. Modern Libya was initially formed on the basis of the union of different states, but was unified early on into a single state. A considerable proportion of the population could opt for a certain degree of self-governance. The weakness and incompetence of the administration at the central level manifested itself in an inefficient and ineffective system, which increased the demands for decentralized decision-making. The Self-Governance Law (No. 59) provides a very strong basis for a high degree of decentralization at various levels. However, previous failures, the reluctance of central authorities, and the lack of necessary human resources are major obstacles to decentralization.

The evidence shows that Libya has sought a balance between centralization and decentralization. But it seems that these efforts have failed. Attempts to decentralize and then recentralize the health system have created a fragmented health system. Municipalities in districts are responsible for coordinating and providing some health services, but they do not receive sufficient funding or support from the authorities. This creates a conflict in the day-to-day works of the health care facilities between the municipalities and district health officers assigned by the Ministry of Health.

Developing and implementing successful health care reforms requires political leadership and support. There have been some attempts to develop appropriate health care reforms in Libya since 2011 with support from WHO and other international organizations by organizing the National Health Systems Conference. But the implementation and problems within the Libyan Health System have been further complicated by corruption, outdated ideology, and alienation from the simplest management concepts (Oakley et al, 2013). For this reason, health care reforms should be carried out on the agenda of policy makers from the level of bureaucrats and consultants. As well known and also defined by qualitative research participants in this report; sustainability, having strategic plan, capacity building, and how to make decisions or create solutions are important for successful health care reforms. Creating experienced and committed teams for each of the six building blocks of the Libyan health system to develop appropriate direction, strategy, and reform proposals as well as raising awareness of health system issues among members of the Libyan Parliament and health system stakeholders and gaining the support of policymakers in the parliament and stakeholders, are needed measures for good governance and leadership of the Libyan health system in the long journey of health reforms. It seems that corruption and unsustainable conditions as well as frequent changes in ministers of health are the main obstacles to developing appropriate reform proposals and implementing them successfully. Following a participatory approach by involving all stakeholders in the development of reform proposals, sharing ideas, and opening up the developed reform proposals for discussion of universities and nongovernmental organizations as well as the media are other measures to increase transparency and gain support for reform proposals.

Libya should have a clear vision and direction in reforming its health system and stick to it if it is to succeed. Past experience, reality, and current physical and human resource capacity are important considerations in defining this vision and direction. The evidence suggests that three main elements should be considered in forming a new vision and direction for the health system in Libya: (a) the role of the private sector should be increased in the health system, (b) some form of decentralization should be used to

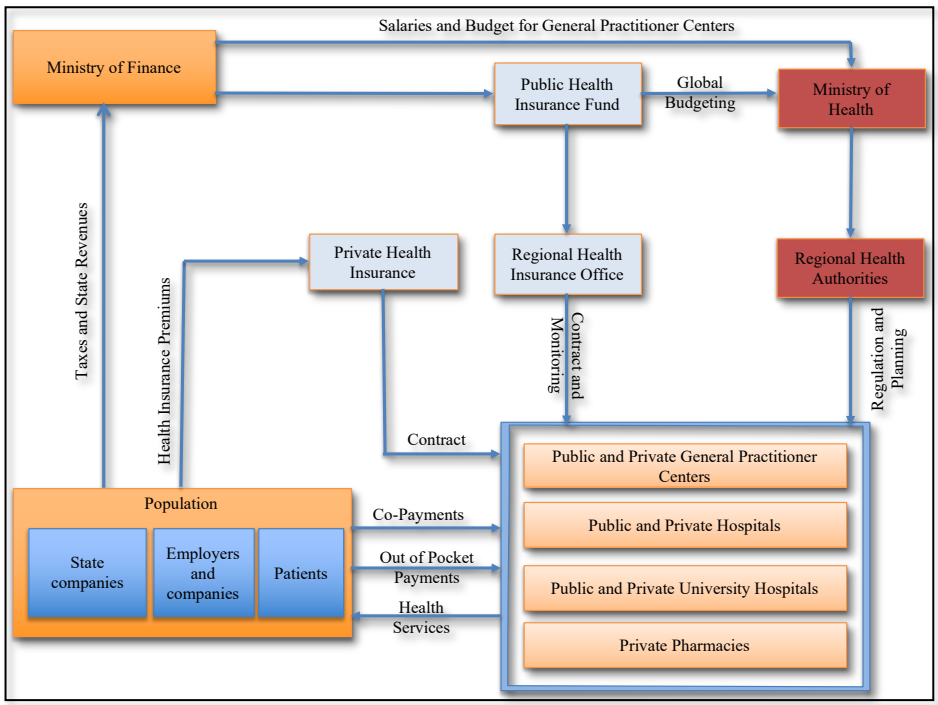
increase both trust among stakeholders and the efficiency of limited health resources, and (c) the purchaser-provider split should be implemented by increasing the effectiveness of the recently established (preferably more autonomous) health insurance fund.

It is also recommended that the barriers to good governance and leadership, such as inappropriate regulations, and lack of accountability and lack of planning, management and administration capacity, be removed by replacing inappropriate and outdated regulations with necessary and newer ones and by strengthening the capacity of planning, management and administration bodies or committees.

To ensure efficiency and minimize financial risk, public administration, including the health sector, has traditionally been highly centralized. The budgets of the various facilities and institutions affiliated with the Ministry of Health is allocated by the ministry itself. This bureaucratic approach is a major factor in the declining efficiency effectiveness and responsiveness of these institutions. To improve performance, some institutions have acquired some form of independence. However, this chimera of an institution working in a core health sector service that is not strictly under the responsibility of the ministry of health failed to produce the desired effects. In fact, this independency has not solved the problems of securing an adequate and continuous budgetary flow, and above all, it has been insufficient because the management of the hospitals has not been independent to the point of being able to make freely most of the decisions that are considered essential for the hospitals to accomplish their main vital tasks. In addition, efficiency has not improved substantially. In fact, some of the small dependent hospitals had high volume output with considerably lower expenses than many independent central hospitals.

Considering the current problems and previous experiences, it is recommended that the financing and delivery of health services be separated and managed by different ministries. Although the Public Health Insurance Fund has recently been established, it is difficult to say whether it has functioned fully and appropriately. The recommended health system organization model for Libya is presented in Figure 7. In the recommended model, the Public Health Insurance Fund, being more autonomous and under the supervision of the Ministry of Finance, is expected to perform its function of financing the health system efficiently. This idea or concept is not new; many policy and decision makers in the health system in Libya have been discussing this for many years. Regional branches of the health insurance fund can play an active role in contracting with public and private health care providers. More autonomous regional health authorities are another important aspect of the recommended model.

Figure 7. The Recommended Health System Organization in Libya



The experiences of Italy, New Zealand, and Ireland might be considered in reorganizing health services and hospitals in Libya. The two recommended countries had health systems similar to Libya's, which could be defined as national health systems. In 2005, a new Health Service Executive (HSE) took over responsibility for the budget and the management of the health services as a single national entity, accountable directly to the Minister of Health in Ireland. The HSE is divided into four administrative areas. These administrative areas largely mirror the geographical boundaries of the Health Boards they have replaced. There are four administrative offices in different cities, and they help coordinate the services provided by the local health boards. They do not have a board structure; instead, a local manager is directly responsible to the HSE's chief executive officer. This is intended, in part, to reduce the potential conflict of interest between local political considerations and national strategy, an issue that had been identified as problematic. The HSE is organized into a number of directorates which focus on three main areas: health and personal social service delivery, support services, and reform and innovation. The Primary, Community and Continuing Care Directorate is responsible for a range of services including general practice, community-based health and personal social services, services for older people, children, services for people with disabilities, mental health services and social inclusion. The Primary, Community and Continuing Care Directorate is made up of 32 Local Health Offices that are the first point of call

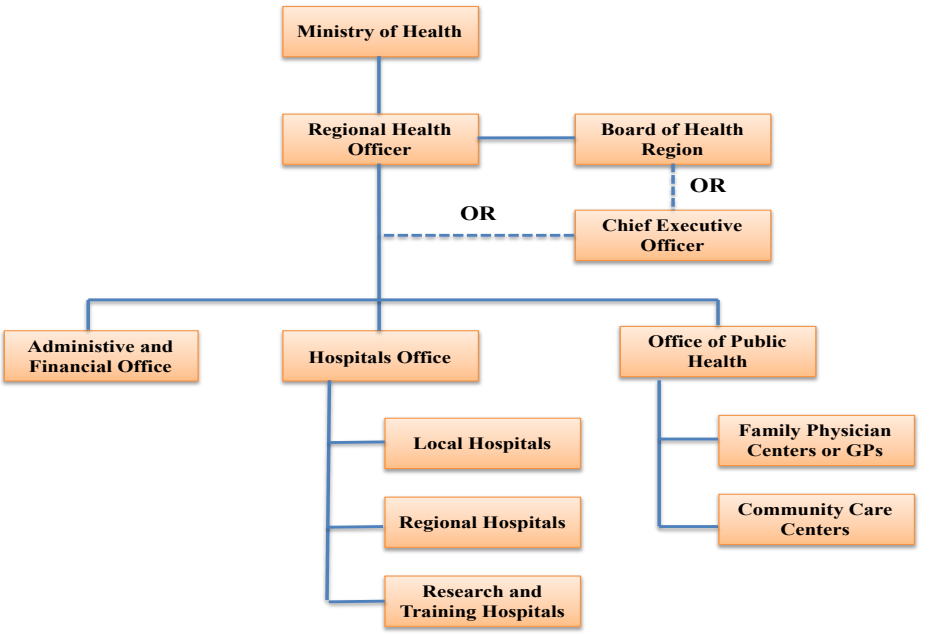
for access to a range of community services. Each has a local health manager who works closely with the hospital officials in their geographic area to ensure that patients' needs are met. These Local Health Offices are also responsible for implementing the public health strategies developed by the Health Service Executive (McDaid, Maresso, & Mossialos, 2009)

Another good example might be the redesign of thehealth-care system components in the Marche region of Italy. The former health system in this region had 13 local health authorities, which were integrated into a single legal entity called the Regional Health Authority. Three independent hospitals from the previous system have been merged to create a brand new organization: the 'Riuniti' hospital in Ancona. The consolidation of institutional arrangements allowed the system to achieven immediate economic and financial benefits since: (1) many administrative offices were closed (it actually no longer made sense to maintain in a relatively small region 13 procurement offices 13 front-office systems, 13 facilities management offices and so on); (2) the consolidation of purchasing activities in the hands of the Regional Health Authority resulted in significant financial savings; (3) many administrative processes and operations were streamlined and simplified. However, the changes in institutional arrangements were also aimed at creating a regional health care delivery network to avoid unnecessary redundancy and duplication and to ensure an integrated set of services to citizens while maintaining continuity of care. The first results showed that there were improvements in the economic aspects and in patient satisfaction (Stefano, Daniele, & Elio, 2008).

The experiences in Ireland and Italy simply suggest that some attempts have been made to take advantage of managing hospitals from a single center by merging them (in Italy) or grouping them into regions (in Ireland). But Italy prefers to do this in defined health regions rather than manage all hospitals from one center under the MoH. So, Libya is therefore recommended to use this mix. The MoH should play its governance and leadership role by developing sound and appropriate regulations, preparing strategic plans, planning human resources, designing a better and appropriate health information system, etc. Then, regional health authorities should be responsible for implementation, supervision and monitoring, coordination, contracting with private health care providers, collaborating with local social and health care providers such as municipalities and non-governmental and voluntary organizations, etc. In the recommended model, Regional Health Officers (RHOs) (or Regional Chief Executive Officers (RCEOs) and the Board of Health Regions (BHRs) are positions that play a key administrative role in six health regions in Libya. A regional health officer (RHO) might be appointed by the MoH, and the RHO may work as a deputy minister of health in his or her region. The establishment of aa BHR might be recommended in the health regions in Libya. The composition of the BHRs should be defined by Law, indicating the number of members of the board, and the qualifications of these members. The members of BHR can be

nominated by relevant stakeholders (e.g., representatives or managers of private and public hospitals, local health care providers, municipalities, primary health care providers, associations of health professionals, and voluntary groups) and appointed by the MoH for a certain period of time. RHO should be in charge of the BHR and may have executive roles in the health region. The RHO should consider the recommendations of the BHR in the administration of health services in the region. Alternatively, the BHR may select a professional Regional Chief Executive Officer (RCEO) who has been trained and experienced in health and hospital management in Libya or other countries and who can be responsible for implementing the decisions of the BHR. The RHO (or RCEO) might be assisted by the administrative/financial office, the hospital office, and the public health office. The BHR may increase the number of offices such as the health information system officer, quality and accreditation, medical supply, and technology to assist the RHO (or RCEO). All other managers of public hospitals and health care facilities should be selected from among experienced and trained professionals, including all health care and hospital management professionals, by announcing open management positions throughout the country. The selection should be made by the BHR, which may seek approval from the MoH before appointing them. The recommended management model for regional health authorities is presented in Figure 8.

Figure 8. Recommended Management Model for Regional Health Authorities



5.1.2 Reforms for Financing

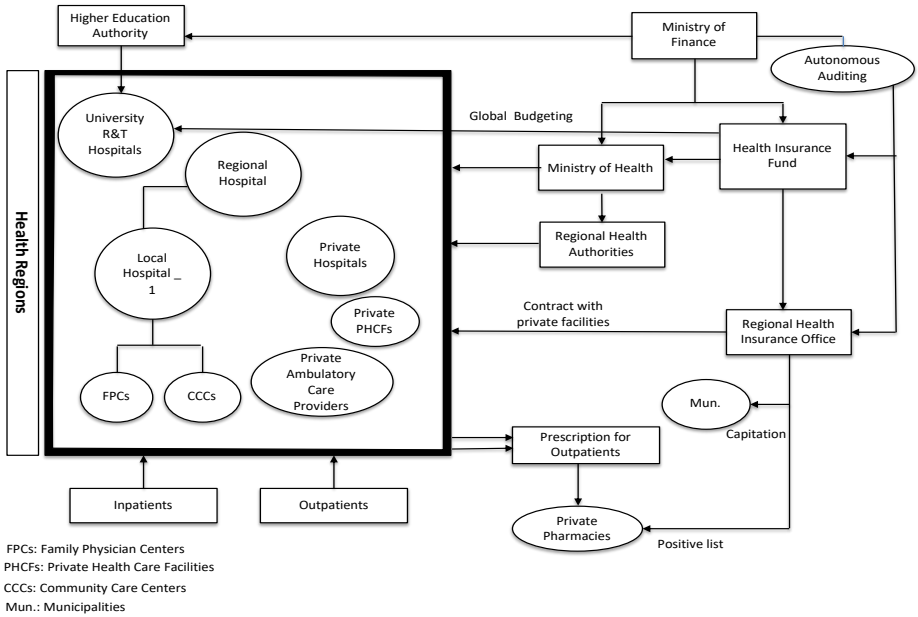
Libya's health system is underfunded. Even thought per capita health expenditure in Libya is higher than in other comparable countries, the low share of health expenditures in GDP and higher out-of-pocket payments indicate that the Libyan health system is not able to protect its citizens from catastrophic health expenditures.

Public health care services have been provided free of charge to all in Libya for many years, and the country has a national health system of the financing and delivery type. This type of financing and delivery has been implemented by many developed countries such as Canada, the United Kingdom, Australia, etc. These countries spend a lot of time trying to find better ways to get value for money. They put in place incentives to increase the efficiency of health services delivered, or they create a special purchasing agent to make smarter and more strategic purchasing decisions to increase efficiency. These countries also have put in place more transparent and explicit rules regarding the amounts allocated to the health sector. They also want to ensure that sufficient funds are allocated to health. Libya's experience with the health system indicates that the state has not been willing to spend more on its health system and that there is no administrative structure or incentives to force health care providers to work effectively and efficiently. Public health care facilities are both providers and purchasers of their health care services, and there is no logic to working efficiently. Evidence from international best practices and the views of participants in the brainstorming meetings and key experts indicate that what matters is how you spend your money rather than how you collect it. Figure 9 presents a recommended health financing system for Libya, based on the international best practices and the views of key experts.

As seen in Figure 9, the most fundamental change in the current financing of the health system is the introduction of a stand-alone health insurance fund. Under the current health financing system, the Ministry of Health is both the provider and payer of many health services provided in public health facilities, although there is a recently established Public Health Insurance Fund. The implementation of a line-item budget to control the health expenditures at each public health care facility decreases the responsiveness of health care providers to the need of users, creates a cumbersome and lazy bureaucracy, leads to ineffective and inefficient health services delivery, and creates unaccountable and irresponsible management and managers. The establishment of a self-sustaining health insurance fund is about purchaser-provider split.

In the recommended model, the main revenue source of the health system will be the state as in the current system, and the Ministry of Finance (MoF) is responsible for estimating annual health care expenditures and allocating the needed money to the health insurance fund. the health insurance fund financed by state revenues or general taxes is preferred to the social health insurance model, since Libya has no experience in this area, and the current figures and statistics on the level of unemployment or income distribution do not allow for the creation of a social health insurance system that would attempt to collect revenues from employers and employees for health insurance premiums. The advantage of proposing a state-financed health insurance fund is that Libyan citizens are familiar with the state-funded system, and are unlikely to be willing to pay a premium or co-payment to use health services in public health facilities. International experiences in other countries whose health systems financed by the state and general taxes or by a social health insurance system indicate that some countries (Turkey, Hungary, etc.) prefer to have a single, central health insurance fund, while others (France, Italy, etc.) created regional health insurance branches. It can be observed that the availability of regional health insurance branches is closely related to the general structure of the country's public administration. Countries that are relatively large and have regional differences in terms of ethnicity or tradition, such as Italy, Spain, France, Germany, etc., may prefer to create regional health insurance fund. Some countries (Turkey, Hungary, etc.) prefer to have one central health insurance fund which is responsible for setting regulations, signing contracts, or determining reimbursement methods for public and private health care providers. In the model recommended for Libya, it is preferable to establish regional branches of health insurance fund in six health regions of Libya. In this model, the central health insurance fund will receive money from the Ministry of Finance, and it is expected to allocate the money among the regional branches of the health insurance fund based on the needs of the health regions. A resource allocation procedure based on a formula such as the RAWP, used in the United Kingdom and sensitive to health needs and regional disparities, could be used to allocate the money among health regions. The central health insurance fund is expected to set regulations and create general rules for making decisions and contracts with public and private health facilities. The central insurance fund should also play an active role in determining and implementing a reference pricing system for all medicines and drugs that will be reimbursed by the health insurance fund.

Figure 9. Recommended Health Financing Model for Libya



Another radical recommendation of the new model is the purchase of health services from private health care providers at primary health care level and other levels. Regional health insurance branches are expected to develop protocols and enter into contracts based on centrally defined quality and performance indicators of private health care providers. It is well known that monitoring the quality of health care and performance indicators of health care providers is not an easy task, and requires a sophisticated health information system. However, the level of health information and communication technology, as well as the experiences of other countries, may encourage Libya to create such a system. The appropriate reimbursement method for paying private health care providers would depend on the type of health care services. But it is recommended that a Diagnostic Related Groups (DRGs) type reimbursement be accepted to pay for quality and performance and to motivate health care providers to provide cost-effective services to users. However, it is not easy to implement DRG-type of reimbursement in the short term. A bundled pricing system for elective surgeries or appropriate health procedures, or a fixed payment per case or day could be used to control the overall level of health care expenditure. This system requires a long list of health care services or procedures and their prices, and it needs to be updated based on provider behavior.

In the recommended model, a small co-payment for services received from public hospitals at the secondary and tertiary levels could be introduced to reduce unnecessary utilization and increase efficiency. Alternatively, services of all public health facilities

could be free. But citizens who prefer to use private health facilities should know that they have to pay a higher co-payment out of their own pocket. There could be some maximum limits that private health facilities can charge to patients covered by a health insurance fund. Appropriate regulations for the private sector should be prepared, taking into account emergency or pandemic cases. They should not be allowed to charge patients in case of emergency or certain diseases and cases. However, it should be kept in mind that the purpose of co-payment is not to collect money, but to reduce unnecessary use and increase efficiency.

In the new model, it is expected that the most challenging task will be to prepare public health care facilities to sell its services to another newly introduced public health insurance fund. However, the greatest benefit of this new model will come from purchaser-provider split between the health insurance fund and the ministry of health, which is the main provider of health services and owner of public health care facilities in Libya. Experiences of other countries indicate that the global budget reimbursement system is more appropriate for the MoH hospitals. However, the allocation of the global budget received from the health insurance fund between health regions and individual hospitals requires the development of a methodology. The most appropriate method is to measure the hospital performance. In developing this method, a set of quality and efficiency indicators could be used to construct a hospital performance index. In addition to the performance index, case-mix or DRG-type measures might also be needed to increase the incentive for hospitals to accept and provide more advanced care to patients with more severe illnesses that require the use of more advanced technology and knowledge.

The reimbursement system for primary health care providers (Family Physician Centers - FPCs, General Practitioners - GPs, or Community Care Centers - CCCs) should be different. The capitation payment system seems more appropriate for FPCs or GPs. However, CCCs could be financed through fee-for-service (if they operate laboratories and conduct some basic diagnostic tests in supporting of FPs or GPs) or through bundled payment for their planned and approved services such as screening, immunization, or health education. In the recommended model, the Ministry of Health would be ready to monitor and track the activities of primary health care providers and hospitals by developing an appropriate health information system. Alternatively, regional health insurance branches can contract with public and private FPCs or GPs on capitation basis.

It is not easy to convince physicians, nurses and other relatively influential health care providers to accept the idea of selling public health services to another public

organization. In the new model, individual hospitals would ask their employees to increase the volume and quality of health services they produce since they would be competing not only with private hospitals and ambulatory care providers, but also with other MoH hospitals for more funds from the overall MOH budget. If MoH hospitals gain more autonomy and their managers are contracted and evaluated based on their overall managerial and hospital performance index, then physicians, nurses and other frontline workers in hospitals are expected to work harder and provide better and safer health care to their patients. At this point, current practices, such as dual practice in private and public facilities, provision of consulting services to multiple hospitals in different regions, or inefficient staffing, would be the main obstacles to implementing the new model.

There seems to be a need to prohibit dual practice and to require physicians to work in either public or private health facilities. However, increasing incentives, especially salaries of health professionals who prefer to work in the private sector, mainly due to the higher salaries, should be the first attempt to encourage physicians to work in public health facilities. It is important to clarify that there are some other attempts to be considered for professionals in public health facilities, such as improving the infrastructure of health facilities in terms of laboratories, medical devices, or other support services and working conditions, and providing better benefits. Salary level should not be a determining factor in choosing private or public sector for physicians and other health care professionals, whose numbers are very limited. For this reason, salaries for private and public health professionals should be similar, and public health care facilities or the government should be willing to accept and pay the salaries paid by the private sector.

Alternatively, in the short run, the most appropriate way is to introduce performance-based payment system that aims to pay health professionals working in public health care facilities more depending on the volume and quality of services and procedures provided. The development of a transparent budgeting system at the hospital level, allowing individual workers to see their contribution to overall hospital revenues and to track their expenditures to increase their cost awareness, could be useful in attracting health care professionals to work in public health facilities. It is a well-known fact that it is very difficult to set volume performance indicators for many health professionals. For this reason, volume-based performance indicators could be used for physicians and nurses since their health care activities can be measured objectively, while the incentive for other health care providers could be given by increasing their revenues by allocating additional revenues based on predetermined percentages. However, in the long run,

performance-based payment system may increase the unnecessary provision of certain types of health services that could be treated for safe and quality health services.

As recommended in health care delivery, it is desired that each health region have at least one university research and training hospital. It is recommended that university hospitals be funded by the Ministry of Finance. Alternatively, the health insurance fund may make contract with university hospitals using global budget reimbursement method. University hospitals may be allowed to establish their own budget system to increase their revenue by providing health services to users or referrals from public and private hospitals. However, it is recommended that research and training costs be funded through a general or line-item budget process by the Ministry of Finance. Alternatively, additional funds for research and training functions of university hospitals could be allocated separately to these hospitals. University hospitals should not feel under cost pressure when providing costlier and advanced health care services. It should be kept in mind that university-owned hospitals are also the places where medical, nursing and other health school students complete their internships.

Many participants in the brainstorming meetings and interviews stated that corruption is widespread and that it is not easy to eliminate corruption and the perception of corruption in the Libyan community. Transparency in the decision making process and accountability of decision and policy makers at all levels are necessary to create confidence in the recommended model in the long run. However, effective monitoring and auditing of decisions (including financial decisions) on spending or contracting with public and private health care providers by central and regional health insurance funds should be necessary in the short term. To this end, the establishment of an autonomous audit department, possibly attached to the Ministry of Finance, is recommended. The members of this organization should be selected by the Ministry of Health, the MoF, the health insurance fund, the Ministry of Planning, representatives of private sector, health care providers, and representatives of other stakeholders. This department should be responsible for auditing all activities of health insurance fund both at the central and regional levels, in terms of quality, safety, cost-effectiveness, price, and some other aspects of health services purchased from public and private health care providers. Alternatively, public and private health care providers who wish to contract with the health insurance fund could be monitored or audited by this autonomous department in terms of their service quality, adequacy of their staff, physical quality, and other aspects important for providing better quality and safe health services. In the recommended model in Figure 9, the task of inspecting public and private health care providers in terms of quality, safety, or adequacy could also be carried out by a department under the MoH with trained staff to inspect the quality and

adequacy of public and private health care providers. These personnel could be called field inspectors. These inspectors should not be part of or employed by the inspection and licensing department of the MoH, they should directly report to the Minister of Health.

Health insurance funds can be encouraged to contract with public and private health care providers that are accredited or certified for quality, or additional incentives can be created to reward quality and safety among providers.

In the recommended model, private health insurance companies could play an important role in expanding choice for individuals in Libya. In particular, supplementary health insurance might be needed for those who are willing to use only the private sector to obtain health services more comfortably.

5.1.3 Reforms for Health Services Delivery

The Libyan health system is inadequate. Public health facilities meet WHO standards in terms of bed numbers per 1,000 people. However, the uneven distribution of beds and health care facilities across districts and health care facilities in different regions worsens the accessibility and availability of health services. In many regions, hospital beds are almost empty as suggested by bed occupancy rates. False statistics are reported by the managers of these widely dispersed hospitals because the budget is allocated to hospitals based on the number of beds and not on actual performance, bed occupancy and admissions. Many of public health facilities have been damaged and some of their assets have been stolen, and many health facilities lack the equipment needed to provide good quality health services. The supply management system and procedures for resupplying health facilities need to be improved or replaced with new systems.

Public health care facilities have their own pharmacies and medical supply stores. However, they are not allocated any budget for their medical supplies and drugs. They have to rely on medical supply system of MSO. It takes time to complete procedure of resupplying medical stores and pharmacies of public health care facilities, and sometimes public health care facilities see stockouts for more than three months.

The quality of primary health care facilities and the services they provide are quite poor. Many primary health care facilities have been damaged, and are attempting to provide their services under unsuitable conditions and without basic equipment.

There is a poverty caused by unemployment. This fact is the most important barrier to the accessibility of health services everywhere in the world. If high unemployment rate persists, any change to reduce the public's share of health service financing and delivery

could have a negative effect on the accessibility of health services in Libya.

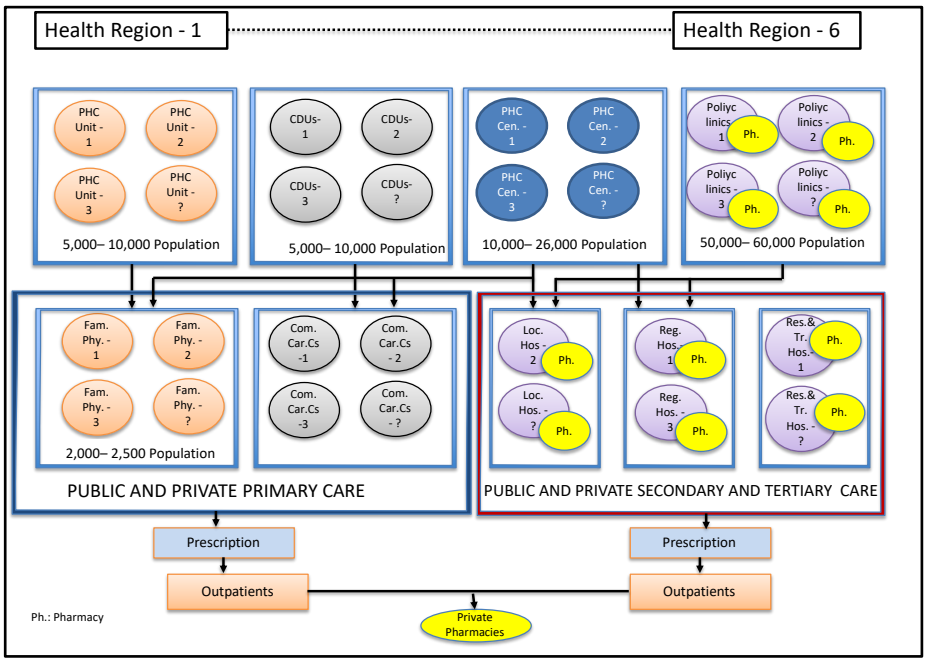
Previous experience with the organization of health service delivery and the dominant role of the state in financing health services may lead health policy and decision makers in Libya to believe that central, state-owned health service delivery is more appropriate for Libya. The experiences of some other Arab countries (such as Tunisia), developing countries (such as Sri Lanka), and even some developed countries (Italy or the United Kingdom) may support this approach. However, past experiences with central governance in the health sector and other sectors may indicate that centralization of responsibilities and centralized management of the health system have not produced desired results. The likely reasons are as follows:

1. The level of trust in the decisions made by central authorities is lower. The historical governance bureaucracy and the conflict between East and West polarization were thought to reinforce this thinking. This fact may have led health policy and decision makers to accept some reform attempts prior to 2011 to decentralize the health system. The failure of decentralization attempts has again forced health policy and decision makers to recentralize the health system.
2. All the evidence shows that corruption is widespread not only in the health sector but also in other sectors. The belief in corruption erodes all attempts to regulate the health system and increase its effectiveness, no matter how well-intentioned the health policy and decision makers are. This belief in corruption and distrust also erodes coordination between central and local authorities and their roles in the health system.
3. The uncoordinated attempts and roles of central and local authorities caused by corruption, belief and distrust in different aspects of the health system make the system ineffective.

For these reasons, Libya needs to find a system to strength coordination between central and local authorities and new regulations and mechanisms to root out corruption in all sectors, including health. The best solution for organizing the delivery of health services may be the mix of central and regional organization. Considering Libya's six health regions, health care providers could be organized in these regions, and the central government and the Ministry of Health could support the regions. Private and public health care providers should not be considered as competitors, but rather as partners in improving the overall health system objectives. However, it should be kept in mind that the public sector should always be strong enough to meet the minimum expectations of users and citizens. For this reason, the Libyan public should be allowed to use both public and private contracted health care providers by paying predetermined co-

payments for health care services, technologies or procedures (discussed in the section on financing). The recommended delivery organization is shown in Figure 10.

Figure 10. Recommended Health Service Delivery Organization



In the new model for organizing the delivery of health services, the role of primary health care facilities needs to be redefined. In the current system, they are expected to support hospitals at the secondary and tertiary levels by reducing the burden of patients inhospitals. In the current system, there are three type of primary health care facilities, namely primary health care centers (PHCCs), communicable disease units (CDUs), and polyclinics (PCs), which are supposed to provide primary health care and some curative care services, as well outpatient prescription drugs. However, they are not effectively staffed, equipped, and supported by the central authorities and the Ministry of Health, nor by local health authorities, municipalities or regional hospitals. It is highly recommended that primary health care facilities focus on promotional and preventive care as essential components of primary health care services. Unless they are adequately staffed, equipped and supported, it is almost impossible to expect them to produce higher quality, effective and efficient health care services. It seems that the current capacity of the health system in terms of infrastructure, health workforce, and medical devices is not able to support current primary health care facilities to continue their current responsibilities. For these reasons, current primary health care facilities could be restructured and their roles reorganized, so that there might be a clear division of labor

to provide primary and curative care services to their users by focusing on their newly defined primary roles.

In the recommended model, the roles of existing primary health care facilities should be carried out by family physician centers or general practitioner centers (FPCs or GPCs), and community care centers (CCCs). It is well known that family medicine is a discipline and specialty that requires training and education after medical school. However, current general practitioners or physicians whose specialties are general surgery, internal medicine, obstetrics and gynecology, or pediatrics could be assigned as family or general practitioners in FPCs or GPCs during the transition period. In the long term, additional incentives could be created to motivate doctors to train as family physicians after graduation from medical school, and former family and general practitioners could be replaced by those whose training is as family physicians. The role of FPCs or GPCs can be defined as to provide basic and primary health care services to families and registered family members, providing health education activities, monitoring pregnant women and their newborns, providing some health services at homes, following registered members with chronic diseases, and prescribing needed medications.

CCCs might have a broader role in providing some primary health care services such as campaigns tobacco reduction campaigns, obesity control, promotion of healthy lifestyle, early diagnosis of certain diseases such as breast cancer, immunization activities, or the establishment and management of certain laboratories to provide basic diagnostic services to support FPCs and GPCs who are willing to diagnose and plan treatment for their patients without referring them to hospitals.

In the new model, FPCs (or GPCs) and CCCs should not be defined as the gatekeepers to hospitals, but rather as the main providers of primary health care services. The role of gatekeeper of primary health care facilities will only be realized when active and effective primary health care services are provided to users, and they are effectively staffed, equipped, and supported.

In the current system, polyclinics are considered as both primary and secondary health care services, which increases the burden of these providers. In the recommended new model, polyclinics should be organized either as primary health care provider or a curative health care provider like a hospital, taking into account the capacities of these centers and the needs of the health region.

In the recommended model of health care service delivery in the health regions, hospitals are classified as local hospitals, regional hospitals, and regional or national research and training hospitals. The role of these hospitals should be defined to serve as a recommended referral system among health care providers in Libya. In the new system, local and regional hospitals could be classified into two categories: the first category hospitals may have a smaller capacity and number of beds, and are expected to provide services in relatively small regions with a population of between 20,000 and 50,000; and the second category hospitals may have a more advanced capacity, and are expected to provide services in relatively larger regions with a population of over 50,000. Hospitals can also be classified according to their capacity (five categories – A, B, C, D, and E). In this type of classification, relatively small hospitals could be classified as E, while larger hospitals could be classified as A. Considering the current capacity and role of polyclinics, it is expected that many of them can be reorganized into Category E or D hospitals.

It is recommended that each health region have at least one regional research and training hospital to provide more advanced health services using more advanced and modern technologies and better trained staff. These hospitals should be training and research centers for physicians, nurses and other health professionals. These hospitals can be considered as referral hospitals. These hospitals are expected to provide more specific and complex treatments and procedures, and should be staffed and equipped with more advanced technology, and be large enough (preferably about 1,000 beds). These national referral research and training hospitals should be owned by universities and funded by the state budget rather than the recommended health insurance fund. These hospitals are recommended to increase innovation and scientific studies related to health in order to improve the capacity of the Libyan health system in terms of management, health workforce, etc. It is recommended that universities and colleges with medical, nursing and other health-related educational programs be affiliated with these hospitals if they do not have their own hospitals or research and training centers.

The provision of necessary drugs and pharmaceuticals is also an important aspect of the organization of health service delivery. In the current health system, prescribed drugs and pharmaceuticals are provided by medical supply stores owned or managed by public health facilities. Public health facility pharmacies experience chronic and severe shortages of most essential drugs. Paradoxically, there are tons of expired drugs due to poor management of the drug and supply chain. The lack of an effective drug management system is a critical factor for this poor distribution. Therefore, increasing patient and citizen choice is critical to increasing service user satisfaction and improving health system performance. For this reason, the new model recommends that drugs and

pharmaceuticals prescribed for outpatients examined in public or private primary, secondary or tertiary care facilities be dispensed by contracted private pharmacies that have stores, the necessary drugs and other medical supplies, and an improved medical supply chain. CCCs may continue to own small pharmacies to provide certain essential drugs for public health purposes.

It is highly recommended that hospitals or centers provide all necessary medications and medical supplies for inpatients themselves. Hospitals or centers providing inpatient services must be required by law to provide all necessary medical supplies and drugs from their pharmacies, and patients or any agent are not allowed to obtain necessary medical supplies and drugs out of hospitals or centers. Physicians are required to prescribe medications and drugs for their hospitalized patients using active ingredients. Hospitals might be allowed to purchase the drugs and medical supplies needed through the bidding process.

It is expected that Libya is going to face more chronic diseases in the near future. Thus, the organization of health services along with social services will be one of the critical factors affecting the success of the health system. The experience of the Scandinavian countries could be considered. In this case, it may be essential to involve local authorities and municipalities in the organization and delivery of some sort of primary health care services, such as home health care, health promotion and education, or screening programs. In the recommended model for organizing health service delivery, the support and role of municipalities in coordinating and supporting community health services should be sought as part of the responsibilities of recommended FPCs and CCCs. Municipalities can create their home health and social support teams, composed of physicians, nurses, therapists, mental health providers, and other health and social support professionals. These teams can provide home health and social care services to the patients, in coordination with FPCs (or GPs) and CCCs.

It is recommended that to set a referral system be established between public health care providers in health regions. In the recommended model, the first point of contact for health care users is the general practitioner or family physician. For this reason, the role of family physicians or general practitioners should be strengthened to refer their patients to the most appropriate centers for more cost-effective services. Family physicians or general practitioners can refer their patients to public or private health care facilities in their region to increase satisfaction with the health care system and access to health care services as well as the choice of citizens.
In the recommended model for Libya's health system, the private health sector is expected to play a greater role in providing health care services as a partner of the public

sector rather than as a competitor in meeting the expectations of Libyan citizens. The role of the private sector could be supplementary, and it is fulfilling this role by contracting with the recommended health insurance fund to provide health services to Libyan citizens. This role also can be expanded by encouraging them to provide cost-effective and advanced health care services requiring state-of-the-art technology within the public health care facilities in compliance with regulations. Under the current system, public health care facilities, especially medical training centers, can outsource some health services to the private sector. This might be desirable in some remote areas where the private sector is unwilling to open its own facilities.

5.1.4 Reforms for Health Workforce

There is a lack of good practice in health workforce management. The Ministries of Health, Finance, Labor, and Planning perform their health workforce management functions in an uncoordinated manner. Public hospitals are free to hire employees but not responsible for their performance and salaries. For these reasons, the Ministry of Labor should coordinate with the Ministry of Health's Health Personnel Department. This can help combat corruption and make rational decisions about planning, training, promoting, and other important aspects of health workforce functions.

Motivation and incentives for the health workforce are a major problem. A lack of both drives experienced and qualified Libyan health professionals to leave the country since they can easily find work in developed countries. Working in health facilities with unpleasant environment and working conditions, dealing with crowd, and receiving lower salaries are the factors that decrease the motivation of health staff. It is therefore recommended to increase the salaries of health staff directly involved in the provision of health services and in technical work. There is also a need to increase and vary incentives, especially for those working in remote areas and their families, to address the inequity of health services and poor distribution.

It is clear that there are many administrative staff, which is more than necessary. The main cause of this problem is due to the autonomy of health care managers in hiring staff. Managers do not hesitate to recruit more staff since salaries are paid by the Ministry of Finance. There is also no system for monitoring job performances of these personnel. These facts decrease the accountability of managers in recruiting more personnel. They might be advised by politicians, influential local leaders, or tribes and relatives. Therefore, human resources functions should be carried out scientifically and objectively, both at the central and at institutional levels. Job analysis and description are needed for better human resource planning to estimate the number and quality of human resources needed at the institutional level.

In the current system, health professionals are recruited on a contract basis, and their contracts are renewed annually. But there is no control and system to check their performance and professional achievements in the previous year, and their contracts are usually renewed. It is recommended that autonomy in the recruitment of health care staff should not be at the hands of lay managers of public health care facilities, and that this responsibility should be at the central level. It can be easily implemented at the central level since Libya is a relatively small country in terms of population. The needs of individual public health facilities can be assessed in terms of number, quality, and type of health professionals, based on job description and analysis studies. Contract renewal rules can be determined by preparing job performance indicators, and then the responsibility of recruiting the needed staff and assessing their job performance in light of the predetermined performance indicators can be delegated to hospital managers. However, top-level managers in a public hospital may be selected and recruited on a contract basis. The norms and standards of each public health care facility for physicians, nurses and other health care personnel should be determined by considering the results of the analysis studies and scientific job descriptions, as well as the capacities and patient loads of the health care facilities. Permission from the regional health authorities and the Ministry of Health should be sought before recruiting any health personnel. It is also recommended that health care facilities openly announce the number and quality of health care professionals needed throughout the country.

Statistical figures indicate that Libya has a health workforce that exceeds WHO standards. But the problems are the quality of the health workforce and its poor distribution in country. Many key informants stated that the majority of nurses working in primary health care facilities and hospitals are actually nurses who were trained in short term courses, and they are not able to provide high quality and expected nursing services. Another fact is that there is no updated Medical Law governing the job definitions, responsibilities, and requirements of health professionals in Libya. It is common to see a technician or someone who has not graduated from medical school practice as a physician and receive an even higher salary than a physician who has been trained in medical school and spent many years. Not surprisingly, many professionals do not want to work in remote areas and overcrowded health care facilities. They prefer working in large cities and in primary health care facilities. For this reason, it is possible to see *"a health care facility without even one physician, and a facility where the staff work only eight or five hour per week or come to work only one day per week because of the large number of staff since there are not enough chairs to sit on"*. In these respects, the recommendations of Oakley et al (2013) still hold true for Libya: *"Libya needs professional regulation, and there is a need to establish independent professional regulatory bodies to regulate the medical, dental, pharmaceutical, nursing, and other allied health*

professions. These bodies should be statutory and non-governmental institutions. They should also work independently but be in tune with each other. Their remit is to regulate the professions through registration, certification, and recertification. They should also be responsible for issuing professional guidance, ethical standards, and codes of conduct", and *"Redistribution of the workforce should be necessary based on regional and institutional needs, and a detailed analysis of the existing workforce, including numbers, categories, and skills mix, is urgently required"* (Oakley et al, 2013). Even though there is a recently established body under the Prime Minister that is responsible for regulating many aspects regarding health care professionals, unfortunately no improvement has been made to address the current problems.

According to statistics and the views of key informants, there are enough medical and nursing schools and other allied health schools in Libya. The problem is to keep the new graduates in Libya. Another fact is that there are no professors and assistant professors or even lecturers in medical schools, thereby lowering the quality of medical schools. It is recommended that current education programs be strengthened by employing more experienced and qualified professors and other teaching staff rather than opening new schools in Libya.

5.1.5 Reforms for Medical Supplies and Technologies

In all countries, the pharmaceutical sector is vulnerable to non-transparent dealings by special interest groups and by individuals who sometimes put their own wealth over the public interest. In general, problems can arise when officials are in a position of power to make decisions that affect income generation for individuals or companies, and when rules are ambiguous with a lack of transparency and public oversight. The structural weaknesses are the individuals or commissions that make decisions about registration, licensing, pricing, procurement and inclusion of drugs in reimbursement lists (Celik & Seiter, 2008).

As indicated in the qualitative research findings, many key informants indicated that there are problems in almost all aspects of medical products and technologies, from registration to reimbursement. The current system of registration of medical products and drugs creates a lot of problems. In the current system, the Ministry of Health requires manufacturers to be registered in the country. Under this system, international pharmaceutical companies and big pharmaceutical importers may be able to influence decisions about which products to import, which drugs to list as essential medicines and be reimbursed by the Ministry of Health, and which expensive original drugs to use instead of generic ones. For this reason, it can be concluded that Libya should make several changes and reforms in the aspect of medical products and technologies:

Organization: It is recommended that MSO be reformed to increase its effectiveness and play its role more efficiently in registration, marketing, approval/authorization, pricing of pharmaceuticals, legal classification, control of advertisement for pharmaceutical products and inspection of pharmaceutical manufacturers, wholesalers and retail pharmacies. The reformed organization could be either an independent department like NICE in the UK or more autonomous and attached to the Ministry of Health. This organization should be responsible for determining overall medical supply and drug policy, and collecting and analyzing the data needed to develop health policy in Libya.

Registration: The Medical Law in Libya requires national and international drug producers to register their manufacturing sites to import or sell their drugs in Libya. It is recommended that the product or drug be registered rather than the manufacturing site. International pharmaceutical companies should be obliged to open local business entities. Thus, any pharmaceutical product imported into Libya should be registered in the name of the Libyan agent or a Libyan business entity. Prior registration by a competent authority or expert committee may be similar to approval by the U.S. Federal Drug Administration or the European Medicines Agency. It is strongly recommended that the Libyan government use generics of brand-name drugs when they are available. It is a fact that many countries, even developed countries, are using generic drugs as a strategic device to reduce the burden of pharmaceutical expenditures, increase competition or encourage innovative medicines.

Pricing: As mentioned in the previous sections, there is no single authority that determines pharmaceutical prices in Libya. The Ministry of Finance is expected to determine the base price, and retail pharmacies apply their profit margin to this price. Due to the lack of inspection and control of retail pharmacies, prices of same pharmaceutical products vary from pharmacy to pharmacy and from region to region. It is recommended that Libyan health authorities use the external price when a new imported and registered product enters the country, and use the internal price when deciding whether a product is reimbursed or whether it is on the positive list or the list of essential medicines reimbursed by the government.

External pricing: Key informants stated that Libya pays higher prices for the same product than neighboring countries. They also said that there have been many cases of corruption because there is no single authority to determine and control prices. This situation has even increased cases of smuggling of drugs from neighboring countries. Libya is a country connecting Africa to Europe and the Arabian Peninsula. It can therefore easily compare the prices of medical supplies and products available in the

country with those of other countries and Unions such as the EU, the MENA region, or the GULF countries. It is recommended that Libya adopt an approach similar to that used in Turkey for external pricing. Pharmaceutical prices in Libya should be regulated and controlled by the recommended and reformed MSO, and the initial price of the product should be determined during the authorization process. The initial and reference price for a product could be determined based on the lowest ex-factory price among selected EU, MENA, or GULF countries. For instance, Turkey uses the lowest ex-factory price among five EU countries (France, Spain, Italy, Portugal and Greece). The reference countries can change and the number of reference countries can increase. The final price of a product is determined by adding wholesalers' and retail pharmacies' profit margins and value added tax. Profit margins and tax might be decided by Libyan government. Profit margins may be lower or the tax may not be accepted to lower prices. Prices of generic drugs might be lower than those of brand-name drugs.

Reimbursement and internal pricing: Internal pricing is used when a decision has to be made whether a new product or drug is included in the government's reimbursable list or is added to the positive list or the essential drugs list, which is the case in Libya. It is recommended that Libya form a committee to make decisions on which drugs will be on the reimbursable list. Members of this reimbursement committee could include representatives of key stakeholders such as the Ministry of Finance, the Ministry of Health, and the recommended Health Insurance Fund. This committee may meet periodically to make new decisions or update the list of reimbursable drugs, or to determine their prices. This committee should be assisted by some other expert or technical committees or commissions such as the "Commission for Medical and Economic Evaluation". As a basis for their decision, the committees and commissions review data on efficacy, safety, clinical benefit and pharmacoeconomics.

The recommended Health Insurance Fund may ask for additional or statutory discount rates for prices that will be on the formulary. The statutory discount rate may change as drug prices change. Drug prices for the public can be classified into three categories. If the price is lower, the required discount rate is also lower. Discount rates also differ for original or generic drugs. Producers or importers of drugs for which generics are not available are expected to accept higher discount rates. There may be also discount rates for pharmacies, depending on their revenues.

Procurement and distribution: In the current system, the MSO is responsible for the procurement of all medical equipment and drugs by public health facilities at all levels. The MSO is also responsible for distributing and refreshing pharmaceutical stores in public health care facilities. Due to the lack of appropriate medical storage units

throughout the country, lack of available data on medical equipment and drugs needed by public health facilities, lack of appropriate human resources, or lack of transparency and good governance, many problems have arisen, such as corruption or working with unavailable medicines or equipment. It is preferable for the recommended MSO to be a regulatory body rather than simply serving the needs of public health facilities. But procurement, storage, and distribution functions should be handled by private wholesalers, distributors, or pharmacies. Procurement or tendering for pharmaceuticals and equipment could be done by public hospital management. Hospitals purchase pharmaceuticals directly from companies or wholesalers after a tendering process. The procedures and rules should be defined in a recommended "Public Tender Law" specifying the steps to be followed in any public procurement, and all steps could be monitored by a recommended "Public Procurement Organization". All pharmaceuticals used in hospitals should be purchased by following these rules. All public health care facilities wishing to tender should openly announce this and invite all sellers to participate in the tender process by posting their announcements in the website of the Public Procurement Organization. All public hospitals should be obliged to provide free medicines to inpatients. Hospitals can be fined if they violate this rule. At the end of year or periodically, all financial transactions of public health institutions should be audited by the current (or recommended) National Audit Organization. Prescriptions for patients who are users of primary health care facilities may be disseminated by contracted private pharmacies. If the prescribed drug is on the reimbursable drug list, patients can obtain their medication free of charge. But if the drug is not on the formulary; patients can get their prescribed drugs by paying out-of-pocket.

It is also recommended that a network be created among public health facilities to increase efficiency in medical supply functions. Turkey created this type of network and benefited a lot. The objective of inventory management system in Turkey was to improve hospital efficiency by projecting the quantities of items likely to be needed by hospitals over a three-month period. The system also allowed for the transfer of unneeded and surplus items from one hospital to another. Purchasing, storage and transfer trends indicate that the new web-based inventory management infrastructure has helped the hospital sector become more efficient in terms of the size of inventory held and inter-temporal changes in inventory value. It has reduced system-wide waste of medical goods and pharmaceuticals, improved effective use of commodities, and reduced storage cost (Yıldız & Khan, 2018).

There could be supply-side regulations for physicians or health care facilities to implement rational drug use policies or rational drug prescribing behaviors, such as encouraging to prescribe generic drugs rather than originals, or prescribing the active

ingredients of drugs rather than brand names. It may also be necessary to develop demand policies for patients to encourage them to use generic drugs by introducing co-payments for original drugs. It may also be necessary to regulate pharmacies and over-the counter-drugs to implement rational drug use policies, for example by prohibiting the sale of antibiotics.

The following specific recommendations made by a key informant could be useful in implementing the proposed reforms mentioned above: (a) Adoption of Medicine and Pharmacy law, (b) Revision and adoption of the National Drug Policy, (c) Development of standard treatment guidelines, and (d) Ongoing education and training of all personnel responsible for the implementation of the National Drug Policy.

5.1.6 Reforms for Health Information System

The ministry of Health in Libya published report on the health information system in collaboration with WHO and the EU, and assessed the strengths and weaknesses of the current health information system. This assessment report examined the extent to which the Libyan HIS adheres to a sound policy and institutional environment; the use of well-functioning data sources; the availability of strong institutional capacity for data collection, management, analysis, use and dissemination; and the implementation of effective mechanisms for review, data use and action. The main weaknesses of the current health information system discussed in this report are: (a) dysfunctional HIS attributes, (b) lack of monitoring and evaluation plan, (c) lack of standard operating procedures for data management, (d) lack of institutionalized data quality assessments, (e) lack of an integrated web-based HIS system, and (f) lack of a unit responsible for collecting and processing emergency information at health information center. A series of recommendations were made to address these issues, and a roadmap was prepared outlining the timeline, actions to be taken, and key actors for implementation (WHO_4, 2017). The recommendations in the assessment report are believed to be appropriate for strengthening the health information system. It is highly recommended that the roadmap of priority actions in the report of the Libyan Ministry of Health and other agencies be considered an “implementation plan”, that a coordination committee evaluate progress in implementing the recommendations, and that a technical sub-committee support the operationalization of the priority actions, as also recommended in that report.

However, there are a certain number of weaknesses. The HIS has been strongly and adversely affected by the armed conflict in Libya. Timely health information availability is difficult to obtain due to delayed and inconsistent reporting from facilities and programs. Similarly, other data collection mechanisms such as the death registry, are also facing challenges due to the current circumstances (WHO_5, 2017).

5.1.7 Reforms for Patient Empowerment or Behavior

There are two main problems related to demand on health care system: (a) lack of trust or distrust, and (b) overuse and unnecessary use of health services. Several factors contribute to patients' lack of trust in the services provided by public health care facilities. Corruption, inadequate equipment and supplies, higher out-of-pocket payments in the private sector, lack of physicians and qualified health workforce in health care facilities, damaged health care facilities, and criminal acts all contribute to mistrust of health services provided by the public and private sectors in Libya.

Treatment abroad is an ongoing source of inefficiency and waste of valuable resources. Besides high expenditure, the expansion of such services has many other drawbacks, such as the absence of proper follow-up of patients after the initial treatment, mainly when the necessary interventions are prolonged or complex, which prevents the provision of quality services to patients, reduces access to needed services, and leads to lost opportunities for the improvement of the medical and even managerial skills of the local health workforce. Different forms of conflict of interest, unavailability of certain services, poor quality of services, weak responsiveness of the health system and facilities, favorism, and various social and political factors all play a role in the persistence of this harmful form of health tourism. Many attempts to address this situation have failed. Improving the quality of services, increasing coverage, maintaining referral systems, proper planning and management, increasing responsiveness, and depoliticizing these services, its linkage to Insurance Fund procedures, and the essential role of the university and referral hospital in the different health regions which should organize the procedure are all important measures to take to overcome these chaotic practices. Paradoxically, poor quality is a reason for treatment abroad, but treatment abroad prevents the improvement of the quality of services in many ways.

Neighboring countries in particular benefit from this situation. Key informants mentioned that private health care providers from other countries increase their revenues by charging higher prices to the Libyan patients, which is considered as one of the main drivers of corruption in the health system in Libya. Some key informants also stated that COVID-19 has encouraged Libyan citizens to use more public and private health care facilities in Libya, since other countries have closed their borders and have not accepted patients or people from other countries. According to their observations, Libyan patients realized that there was no too much difference in terms of technical quality, and they started to trust the Libyan health system. However, the current laws regulating treatment abroad should be updated. Obtaining treatment abroad for patients should not be a political decision. Instead, it should be regulated and referral hospitals should be responsible for issuing medical reports allowing patients to seek treatment abroad.

Since health services are free at all levels in Libya, people do not hesitate to use many services. There is no functional referral system, regulation, or disincentives for people to use even the basic services of large hospitals providing tertiary care services, which increases inefficiency.

Attempts should be made to increase the confidence of Libyan citizens in the health services provided by public and private facilities. Patients should have the opportunity to choose their health care providers in the public or private sector. An acceptable and affordable co-payment could be introduced if they prefer to use private health care providers or secondary and tertiary care providers rather than primary care providers. Legal regulations should regulate patients' rights by introducing appropriate complaint mechanisms within health care facilities or by empowering patients to choose their health care providers. Likewise, health care providers could be encouraged to increase patient satisfaction and meet expectations appropriately by providing high quality health services.

5.2 Recommendations and Legislation for Effective Implementation

To be successful, health care reforms must be sustainable. It is important to monitor a health system at least ten or fifteen years to decide whether proposed reforms have produced the desired outcomes. At the same time, some radical reforms may require additional financial and human resources for implementation, and these resources are difficult to come by in the short term. That is why it is important to use available resources efficiently. Treating citizens at the more appropriate level based on their needs, eliminating unnecessary utilization, encouraging people to use preventive and primary health care services are just some of the measures that can be adopted to increase the efficiency of a health system.

Successful health care reforms must be implementable. Achievable health care reforms must be both publicly accepted and carefully planned. Objectives, achievements, and strategies should be an integral part of the planning process in the short, medium-, and long term. In the short term, it is essential to gain the support of the country's political leaders and key decision makers. It is also very difficult to implement reforms without a strong, committed government in any county, and therefore, it will be difficult for Libya, where severe conflict continues.

The six stages of the health reform process, namely problem definition, diagnosis, policy development, political decision, implementation, and evaluation, should be followed by developing clear and sound plans and strategies for successful health reforms. It is clear that there are many reports, workshops, and meetings on the first two stages of the health reform process in Libya. There is consensus among key stakeholders in the health

system in terms of the severity and variability of the problems and their causes. There have been previous attempts to develop health sector reforms but the ideas have not been implemented. It appears that Libya is facing problems in adopting the policy development, policy decision, and implementation stages. As the Turkish Deputy Minister of Health stated *"… deciding a reform does not guarantee its success. The context must be ready for reforms. Actually, the problem is not what should be done. The important thing is how to carry out the steps [of reform]. There are important stakeholders. One of them is the public [citizens]. They have to accept the changes or internalize them. Then, they can defend and support the reforms. After receiving the general acceptance of the citizens, in the short term, it will be possible to aim for reforms that are feasible in the long term."* For this reason, conscious and planned attempts must be made to put health reforms on the agenda of key policy makers and members of the Libyan Parliament.

The former Turkish health minister explains the importance of setting an agenda and gaining public support in three principles. The first principle is that transformational leadership requires a deep motivation and unwavering determination to make changes for the public. This is important because you cannot address the abuses of the system without making hard choices and risking the wrath of powerful lobbyists. They may put up strong resistance that can cause you to fail. The second principle is to take a two-pronged approach to transformation: fast, decisive changes that built immediate political support, as well as deep, incremental changes aimed at revolutionizing the system. Gaining public support and trust is the third principle. This support sometimes becomes a shield, even against some friends, your own political party, and your cabinet. So, you should never hesitate to act for the people and resist attempts at austerity (Akdağ, 2015).

In the long journey of health reform, health reformers or key decision makers who seek to change the health system should follow a concrete agenda that should be created in a participatory manner, and this agenda should be implemented by a committed and determined health reform teams for each building block. For instance, Turkey created this program in early 2003 and named it the Health Transformation Program (HTP). The reform activities under the HTP had three objectives: to organize, finance, and deliver health services in an effective, productive and equitable manner. Nine main principles were agreed upon to propose reform activities: human centeredness, sustainability, continuous quality improvement, participation, reconciliation, volunteerism, division of power, decentralization, and competition in service. The HTP also included eight components covering all dimensions of the Turkish health system. It was hoped that each component would complement the other in order to achieve appropriate reforms and solutions in the end. Although “perfection” was preferable, it

was recognized that it was impossible. Therefore, it was decided to produce the most appropriate solutions that would meet the important and priority needs based on the resources and facilities in Turkey. Another strategy for successful reforms was that the components of the service must act freely in order to contribute to the overall health system (MoH of Turkey, 2003).
Eight components of the HTP were identified: (a) reorganizing the Ministry of Health as planner and controller, (b) establishing general health insurance covering every citizen under a single health insurance fund, (c) creating an extensive, easily accessible, and user-friendly health service system by strengthening primary health care services and family medicine, creating an effective and staggered referral chain, and creating health enterprises that would be financially and administratively autonomous, (d) having health personnel with knowledge and skills and working with high motivation, (e) creating educational and scientific organizations supporting a strong health system, (f) improving quality and accreditation for qualified and effective health services, (g) creating an institutional structure in the management of rational medicine and equipment by creating a national institution of medicine and medical devices, and (h) creating a health information system allowing access to effective information in the decision making process (MoH of Turkey, 2003)

A similar approach is recommended for Libya. It seems that previous health care reform proposals have failed and could not gain the support of the public and key decision makers for three main reasons: (a) members of parliament were not supportive of the proposed health care reforms, (b) there is no sustainability in governance and leadership due to the frequent change of key decision makers in the health system and in the administration of the entire country, (c) there is no trust among key stakeholders in the health system because of the widespread corruption, conflict and war in Libya. For this reason, Libya should have a clear vision and direction in reforming its health system, and it must stick to that vision and direction if it is to succeed.

The role of the private sector should be carefully defined and regulated. former Turkish health minister uses the term *"tough love"* to express the difficulty of dealing with the private health sector. He goes on to explain that the public sector should be strong enough to protect low and middle income groups. Striking a balance between the public and private sectors is a big challenge, since excessive privatization and under-controlled private health care can pose risks to access to care, especially for countries with limited human resources (Akdağ, 2015).

To be successful, the implementation of health reform must start somewhere. It is recommended that the first step be to change the current Medical Law in Libya. The

findings reveal that many problems, especially at the health workforce level, are related to the current Medical Law and regulations. This creates conflicts between the practices of health professionals, and decreases motivation. Many inefficiencies and problems in medical supply and technology aspect such as registration, pricing, licensing, etc. are also related with current Medical Law. Besides, the problems in health service delivery and the decline in user satisfaction of health facilities are also related to the current medical legislation. For this reason, key policy and decision makers should be convinced that current health system regulations and Medical Law must be changed by providing evidence of the root causes arising from inappropriate health regulations. In this process, it is important to prepare and share reports or the results of workshops or meetings, or to try to convince key decision makers and members of parliament to to participate in the reform of health sector activities. As one key informant said: *"Political leaders have to accept change. They have to commit to change".* But in the same sentence he added, "*If they do not accept it, if they do not work with it, and if they do not implement it, they are not leaders. They are obstacles. Change always comes from leaders. Not from the public. The public accepts it later if they see good results".* The fact in this sentence: change in Libya must start at the top, at the level of leaders. Turkey went through a similar process in reforming its health system starting in 2003. One of the participants from Turkey in the brainstorming meeting organized for this project summed it up by saying: *"Leadership is also very important. Turkey has had a very supportive leadership from the Prime Minister, the Council of Ministries, the Minister of Health, and others. This leadership enabled us to institutionalize the changes. The health reforms were the policy of whole government, not the Ministry of Health. After all the [short-term] changes, satisfaction [with the health system] increased, and health became a major concern for all parties, not just the ruling party and the government."*

The strategies and implementations of a reformer should be comprehensive and address all aspects of the health system. Changes on the demand side and supply side are closely related. When implementing a single-payer public health insurance system, you need to assure that the necessary facilities exist to meet the public's needs for primary health care, emergency transportation and hospital care (Akdağ, 2015). It is recommended that a successful health reform process consider these following facts: (a) both supply-side and demand-side reforms are needed, and they must be mutually supportive and coherent, (b) fast implementation of decisions made or reforms developed is necessary to manage resistance and opposition coming from key stakeholders and the health bureaucracy, as well as to gain support from citizens and key policy and decision makers in the country's administration and parliament, (c) strong governance and leadership, and support are needed, (d) the allocation of more financial resources or increased health expenditures in the short term may be necessary to gain the support of citizens who are

the main stakeholders in the overall health system by enabling them to use accessible, quality, safe, patient-centered, and affordable health care services provided by public and private health care facilities, (e) the reform process should be a learning environment with a flexible implementation approach to achieve sustainable reform leadership from key policy and decision makers, and (f) combined strategic and tactical solutions should be developed to address the challenges, and achievements should be periodically evaluated.

There may be some unexpected violations in the health reform journey. Lack of resources, lower levels of support, poor implementation or misunderstandings, disagreements among stakeholders, etc. are some examples of these violations. It is also important to manage or learn from these violations. The former Minister of Health recommends three principles regarding such violations in Turkey as part of its health sector reform process. The first principle is *"to admit and correct mistakes despite the risk of being blamed"*. Initially, Turkey wanted to employ more doctors in rural and relatively less developed regions by increasing rewards rather than mandating work in these regions for a period of time. Unfortunately, the increased rewards did not encourage enough doctors to work in these regions. This lesson was important, and Turkey reinstated the previous policy of compulsory service for doctors. The second principle is *"not to be blinded by success"*. There will always be something to change and improve. So, always look for ways to do better. The third principle is *"to be outcome-oriented rather than input-oriented"*. Turkey has used a wide array of feedback channels as well as monitoring and assessment tools to strengthen the outcome orientation of the reform (Akdağ, 2015).

The previous experience of Turkey in reforming its health system between 1990-2000 and the Kosovan experience have also demonstrated that the most important fact behind successful health reforms is political sustainability. The current situation in terms of political sustainability and conflict is believed to be the most important obstacle to successful health reforms in Libya. Another international expert mentioned this fact, saying: *"It is important to talk about what we do when a country has political instability. What is the best structure for that country? What can be done and how do we improve the health care system? One thing to emphasize first is that everyone needs and wants this [improving the health system]. These are all ideas that I am trying to think about in terms of what we can do in an environment where the politics don't work, where the society is not cohesive, not because of language or anything like that, but because of the political differences and the disruption created by war or civil war..."*

Another key important factor in building support for health care reforms and their implementation is the sequencing of reforms. It is clear that some of the planned reforms will take time to yield measurable results, either because they required the passage of politically controversial legislation (e.g., merging existing social insurance programs) or because of the magnitude of the changes needed (e.g. training large numbers of new family medicine specialists). Therefore, it would be important to sequence reforms in a way that maximizes the likelihood of continued political support to carry out the reforms (WHO_ROE, 2012). Turkey was considered a country that successfully sequenced its health reforms by adopting a model called *"a trauma patient with multiple life-threatening injuries"*. A similar approach could be recommended to Libyan health reformers. Following this model, they would first address the injuries/conditions that are life threatening and therefore critical to short-term survival. Once the patient is stabilized, they would then
turn their attention to the major organ/system *"failures"* that need to be fixed to ensure long-term survivability and health. Finally, they focus on the more *"cosmetic problems"* that are not urgent, but are nonetheless important to ensure the patient's long-term quality of life.

Based on the above facts, the brainstorming meeting discussions, and the findings of qualitative research and health survey, the recommendations listed below could also be considered in the development and implementation of health reform proposals:

a. Key stakeholders in the health system should be identified and given the opportunity to participate in health reform process. In addition, all activities should be conducted in a transparent manner. Attention and focus should be placed on community participation, and on the role of social components such as tribes, individuals and other social and cultural organizations.
b. Demand and supply side incentives, such as pay for performance, should be developed to improve quality of health care services in the short run.
c. Central procurement and distribution of resources and materials to local areas often does not work. In the short term, some community participation in purchasing medical supplies and products will be extremely important.
d. All health resources must be brought together in a good management practice so that quality health care services can be delivered. For more effective use of resources, it is important to define the level of care -- primary, secondary, and tertiary, so that a functional referral mechanism can be developed. It is essential to decide how to expand primary health care services through better management, better staffing, better budgeting at the local level, and the procurement of different goods and services.

e. Increasing the availability of financial resources and allocating money centrally is not the solution to the health system's problems. It is essential to monitor the use of resources at the local level. Involving local organizations to monitor resource use can be helpful.
f. Women are more invested in health. The involvement of women's organizations in the management, organization and provision of health care services is often more effective than that of political bodies at the local level.
g. The private sector is expanding and playing a larger role in the health sector. The expansion of the private sector also has negative effects. It creates inequality and access problems. Thus, unless the private sector is well integrated into a public health service delivery structure, private service delivery may not work effectively. For this reason, regulation for the private sector in Libya is urgently needed.
h. There are discussions about the right balance between centralization and decentralization. The right balance could be more centralization or more decentralization in some aspects. Regulations or decisions about physicians or nurses could be centralized (e.g., what is the minimum educational attainment to become a physician), but the distribution of resources could be done effectively by local agencies.
i. More specific reforms may be needed at the hospital level. Current hospital organization and management structures should be reviewed with regard to accreditation, patient safety, infection control standards, etc.
j. The media should play an important role in increasing the appearance of news about health reform in order to gain the support of citizens.
k. It is also necessary to link health plans and reforms to global strategies such as the Sustainable Development Goals, the Reproductive, Maternal, Newborn, Child and Adolescent Health strategy, as WHO, the United Nations and other international organizations recommend that all countries include these strategies in the preparation of their national health plans.

It is well recognized that health is not only the responsibility of the health sector itself, but also of other sectors such as education, economy, transport, nuclear and environmental protection, and many others. In fact, intersectoral cooperation was clearly stated in the principles of the Alma Ata Declaration. The idea was further developed in the Social Determinant of Health and Health in All Policies. It would be essential that a special committee or council be formed at the cabinet level, headed by the prime minister or deputy prime minister, with representatives of these various vital sectors.

A roadmap for health reformers to follow could be useful for prioritizing, planning, and monitoring health sector reform. A sample roadmap is provided in Appendix 6. All recommendations are listed under six main aspects of the health system, and are organized into sub-domains such as leadership, organization, planning, monitoring, etc.

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APPENDIX 1. Summary of Health System Reform Success Stories of Some Countries

Chile: Chile proposed a series of reforms to achieve universal health coverage, to properly subsidize the poor, to create competition among providers, and to have a decentralized health care system. The initiatives behind these reform proposals were; to improve the quality of public care; to expand and consolidate public provision of health services; to foster health insurance coverage for all citizens; to promote private investment in health infrastructure; to promote private-public competition in insurance; to separate financing from public provision; and to decentralize public health care services at all levels. Public and private insurance companies have to provide a minimum benefit package to all, and they are generous to include many health services. There is a mix of public and private health care providers. Primary health care services are provided mainly in rural health posts and outpatient facilities. The success of the Chilean model is due to: (a) a strong reliance on an effective public insurance system, (b) Chile has benefited from credible, independent, and efficient institutions, (c) a solid political economy and consistency are important for health reform, and (d) the change in political regime created "windows of opportunity" for change (Bitrán & Urcullo, 2008).

New Zealand: The central feature of the reforms that resulted in a major restructuring of the health system was the shift from an integrated model to the separation of purchasing and provision functions. Four newly established Regional Health Authorities became responsible for purchasing personal health services and disability assistance for their regional populations. Public hospitals became for-profit enterprises, with the Ministers of Health and Finance as shareholders. Renamed Crown Health Enterprises (CHEs), they had to compete with private providers for service contracts. The Labor Party (in 1999) promised to restore a non-commercial system and to involve local community in the management and planning of health services. Twenty-one locally elected District Health Boards (DHBs) were established to be responsible for the ownership and management of public hospital services and some community services, and for purchasing most other services (including primary health care) through contracts with private providers. The principles, goals and objectives of the New Zealand Health Strategy have been used as guidelines for DHB activities. Primary health care services are provided by established Primary Health Organizations (PHOs), networks of primary health care providers with capitated payments for their enrolled populations. Most general practitioners have joined a PHO, and more than 95% of the population is enrolled in practices that are part of a PHO. PHO members are required to pay lower co-payments due to increased tax subsidies. The National Party returned to power in 2008 as the main governing party. Its major review of the health care system in 2009 did not recommend any major changes. Policy changes instead became incremental,

emphasizing collaboration among DHBs and between DHBs and PHOs in regional service planning and efforts to reduce administrative duplication. Both major health reforms were driven primarily by the political ideology of the government of the day rather than by careful analysis of policy options. In the 1990s, the shift to a contractual model was based on the center-right National Party's belief in the power of markets to achieve efficiency gains. The underlying idea was that "exit" would be the main mechanism for improving performance. In contrast, the return in the 2000s to a more integrated system with community governance reflected the Labor Party's belief that the "voice" of the community would be able to respond to the needs and preferences of the people (Tenbensel & Ashton, 2018).

Taiwan: Taiwan aimed to create a single-payer, efficient, government-run, health insurance system (the National Health Insurance - NHI) to achieve universal health coverage. The NHI scheme was implemented almost overnight, providing health insurance coverage to 42% of Taiwan's then uninsured population. By the end of the first year, over 92% of the population was covered by the NHI. Enrollment in the NHI is mandatory for all. The government subsidizes 100%of the contributions of the poor. The NHI delivery system consists of a mixture of private non- profit and public hospitals. Independent physicians and private hospitals contract with the government to deliver services. The NHI's system of global budgets has been effective in controlling health care expenditures. Comprehensive benefits, low premiums, low co-payments, easy access, free choice of providers, and virtually no waiting times account for strong public support. The government has used both supply-side and demand-side measures to make ends meet, such as increasing co-payments, selling lottery tickets, increasing tobacco taxes, borrowing from banks, and introducing case-based payments (DRGs) for hospitals. Ultimately, it also introduced global budgeting, a measure proved to be effective in controlling costs in OECD countries in the 1980s (Cheng, 2018).

Ecuador: One crucial element of the new direction was the goal of universal coverage (as defined in the 2008 Constitution). They envisioned integrated primary services (down to the level of basic hospitals at kick-off), to be financed by the National Basic Health Care Fund, and proposed the development of second- and third-tier public networks of independent providers. The new model of decentralization and de-concentration aimed to ensure functional consistency and clarity in the administrative responsibilities of public services at the central, regional, and local levels. The application of the same model of de-concentration by different ministries (e.g., the Ministries of Health, Education, Economic and Social Inclusion, and Labor) was intended to promote cross-sectoral service delivery. The Correa administration and its successor acknowledged that these challenges required not only technical solutions, but also political will. Government policies also sought to decentralize political power, giving more authority, resources, and decision-making powers to provincial and municipal governments, thus opening the way for social participation in public administration (Correa, 2018).

Colombia: Colombia has achieved universal health coverage by expanding its health care coverage. There are three type of insurance schemes. First, National Health System, which covers 50% of the total population, has also a network providing health care services. Second, there is a compulsory social insurance scheme for workers, which covers 20% of the population. Third, there are private insurance companies targeting high-income groups. Health plans are free to set the prices of the services they purchase from providers, as well as the payment mechanisms. Fees for health services in the NSHI have been based on fee schedules developed as a benchmark by public health plans. Two models of payment are common to all health plans: (1) preventive and primary care services are contracted mainly on a capitation basis, and (2) most specialty and hospital care is paid for on a fee-for-service or bundled service basis. Health plans act as group purchasers for their members by organizing a network of providers whom they select based on best price and quality. Private health plans can choose their own provider network structure. Most use private providers for first- and second-level care and a mix of public and private providers for tertiary care. The main administrative strategies used by health plans to control demand are the use of gatekeepers and utilization management for specialty, hospital, and diagnostic care. The 1993 reform integrated the supply of public and private providers into national health insurance schemes, allowing health plans to include both public and private institutions in their provider networks. The main lesson from the Colombia experience is this: A clear legal and institutional framework is important for expanding formal sector insurance coverage (Pinto, 2008).

Costa Rica: The MOH became the regulator and steward of the sector, while primary, secondary, and tertiary care were fully managed by the Costa Rican Social Security Fund (CCSS) after the reforms. The CCSS covers 89% of the total population. Membership and financing of the public health insurance system is based on employment; membership is mandatory for employees in the formal sector. Dependents and the indigent receive free care under special schemes. Improved revenue collection through the introduction of a single, unified, internet-based payroll collection system. Everyone has equal access to health care services in the public delivery system. Physical access to primary health care services in Costa Rica is universal—99 percent of the population is able to access primary health services. CCSS is also the country's principal curative provider of health care. The Costa Rican health system is organized around the Ministry of Health (the body that governs, regulates, formulates, supervises and regulates health policy) and the CCSS, which is responsible for administering health insurance. The private sector is relatively small and growing. Its services are primarily focused on the provision of ambulatory care and the marketing of pharmaceuticals. The introduction of performance contracts with all providers in the CCSS network to establish clear objectives for output, quality, user satisfaction, and clinical practice. The shift in resource allocation from historical budgeting to performance-based payments and capitation for primary health care. One of the main advantages of the Costa Rican case was general consensus among the main stakeholders: government/ CCSS,

opposition, unions, and providers. The main lesson from Costa Rica is this: Political commitment and both political parties agreed on the need for change (Cercone & Jiménez, 2008).

Estonia: Mandatory Health Insurance (MHI) system was introduced after Soviet-type health system. The rationale for the reform was to introduce a system that would ensure secure, sustainable, and predictable financing for the health sector, especially given the weak economy. Revenue collection was streamlined by the Government's Tax Revenue Office, and since 2000, the Estonia Health Insurance Fund (EHIF), established under a separate public law, has operated as a single pool with some administrative and contractual responsibilities delegated to four regional offices. The reimbursement system for family physicians is designed to encourage them to provide preventive care, as well as to assume more responsibility for diagnostic and treatment services. A mix of payment methods is used (capitation, fee-for-service, lump sum) to balance the financial risk associated with different incentives. Primary health care is now provided by private family physicians. Hospital and specialty care is provided mainly by stand-alone public hospitals incorporated as private joint stock companies or not-for profit foundations (trusts). The strategy for success was that the health insurance reform was accompanied by carefully phased changes in the delivery system (Habicht & Habicht, 2008).

Kyrgyz Republic: In 1996, the Kyrgyz government embarked on a two-phased health sector reform program: The first phase, from 1997 to 2001, aimed to raise additional revenue through the introduction of the Mandatory Health Insurance Fund (MHIF) financed by a small complimentary payroll tax. The second phase of the reform, launched in 2001, consisted of a comprehensive reform of the funding flows through the system and purchasing mechanisms, an explicit specification of the benefit package, and a restructuring of the service delivery system. Family group practices (FGPs) are the main providers of PHC. A FGP typically consists of three to five doctors. FGPs have to meet licensing and accreditation criteria before they can be contracted by the MHIF. Primary Health Care Centers (PHCs) are generally accessible, even in rural areas. PHC facilities are located close to patients' homes, with a median distance of 1 to 2 kilometers. However, the physical presence of a Feldsher-Obstetrical Ambulatory Points (FAP) or a family medicine centers (FMC) does not always translate into access to health services because of shortages of basic medical supplies and, increasingly, health professionals willing to work in rural areas. The introduction of case-by-case payment created incentives for downsizing, and pooling created the opportunity to rationalize across administrative boundaries. The president of the Republic played a key role in introducing coverage reforms. In addition, Kyrgyz policy makers were willing and open to discussing the issue of high out-of-pocket payments as an irrefutable symptom of a broken system, which facilitated a productive discussion of the problems and constraints the health system. Key lessons learned from Kyrgyz Republic included: (a) the creation of the MHIF as a parastatal agency was crucial to the adoption of strategic

procurement and the abandonment of inefficient input-based budgeting, (b) compared to other sectors in the Kyrgyz Republic, the health sector was revolutionary: it was the only one to abandon input-based line item budgets and administrative control mechanisms in favor of performance-based management, (c) the elimination of co-payments without a commensurate increase in public funding leads to the return of "informal" payments, and (d) for a country of its income level, the Kyrgyz Republic has a well-developed health information system that facilitated policy development, particularly prospective provider reimbursement, based on enrollment at primary care facilities, hospital admissions, and utilization of outpatient services (Jakab & Manjieva, 2008).

Sri Lanka: Democracy has been the main motivation for health services reform in Sri Lanka. The health system moved from one in which only the urban rich had access to modern medicine—while the rural population relied primarily on traditional healers—to one in which the entire population has effective access to modern care. As a result of these reforms, the health system moved from a system focused on prevention and sanitation to one emphasizing universal access to curative health services through hospitals. A key aspect of the reform in Sri Lanka was the expansion of free health care provision to rural areas by building and staffing of public hospitals and dispensaries, particularly in the 1940s. Government health spending is financed exclusively from general tax revenues. There is no Mandatory Health Insurance. Coverage and access are universal. All public health services, with few exceptions, are available free to all citizens, including all inpatient, outpatient, and community health services. Free services range from antiretroviral for HIV/AIDS patients to coronary bypass surgery. Public services, funded and delivered in an integrated fashion by the Ministry of Health and eight provincial health departments, run the gamut from basic preventive and primary care activities to complex tertiary care provided by hospitals. The main lessons from Sri Lanka are: (a) countries can rely on effective (and free) public health system funded by general taxation, and (b) Sri Lanka has a history of good public administration with low corruption, both important prerequisites for this type of NHS system (Rannan-Eliya & Sikurajapathy, 2008).

Thailand: Prior to the 2002 reforms expanding health coverage, Thailand sought to achieve universal health coverage through four different schemes. Health care in Thailand is financed through general taxes paid by the three major public health insurance schemes, out-of-pocket user fees and some private insurance. More recently, the poor, the elderly, children, and the disabled have been exempted from user fees. Payment mechanisms have been gradually modified to include other expenses and to use a mixed system of capitation, a global budget capped by DRG, and flat-rate fees for some services. Inclusive capitation covers the cost of health promotion and preventive and curative care, including primary, secondary, and tertiary care. Exclusive capitation covers the cost of health promotion and preventive and primary health care. All contract provider networks—both public and private—are required to provide these services to registered beneficiaries. Primary care

provider units (PCUs) have been designated as the gatekeepers of access to care for Unit Care Services (UCS) beneficiaries. As gatekeepers, PCUs are expected to provide people in their catchment areas with continuous and comprehensive care using a holistic approach. Primary care contracting units (PCUs) are primary health care facilities that provide curative, promotive, preventive, and rehabilitative services such as ambulatory care, home care, and community care. Secondary care contracting units (SCUs) are health facilities that offer secondary care, mainly inpatient health services. SCUs can be facilities ranging from community hospitals to public or private tertiary care hospitals. Tertiary care contracting units (TCUs) provide expensive care and specialized care with advanced technology. Key lessons learned from Thailand include: (a) Strong political and social support for universal coverage provided the conditions for rapid scale-up. The motto "30 baht treats all diseases" proved simple and popular, and the National Health Security Bill was the first bill sent to parliament because its proposal was signed by more than 50,000 citizens, (b) setting appropriate reimbursement to providers through a combination of prospective payment methods also improved efficiency, (c) the rapid implementation of UCS and achievement of national coverage within one year was possible partly because the reforms built on previous investments in the delivery system, and (d) the good governance provisions strengthened stakeholder participation (Wibulpolprasert & Thaiprayoon, 2008).

Tunisia: Tunisia has progressively put into place a health system that covers almost the entire population. It has implemented mandatory health insurance for a large proportion of the population, including workers in the government and other formal sectors. At the same time, the health system has placed a strong emphasis on preventive programs, fully funded by the government. As a result, some infectious diseases have been eradicated, and the incidence of others has been significantly reduced. The Tunisian coverage expansion strategy has emphasized the expansion of geographic coverage of the population—through primary health facilities that are geographically and financially accessible to the majority of the population. The strategy also emphasizes skilled human resources in the health sector. At the same time, additional reforms have placed a strong emphasis on preventive programs and the extension of coverage through primary health facilities that are geographically and financially accessible to the entire population (Arfa & Achouri, 2008).

Vietnam: Compulsory social health insurance was launched in 1992. In 2003, the government put in place the Health Care Funds for the Poor (HCFP) to ensure funding for health care services for the poor, ethnic minorities in disadvantaged provinces, and residents of remote communes. Provinces were allowed to choose whether to implement health care for the poor by purchasing health insurance or by directly reimbursing facilities for services used by the poor. The benefit package is generous, covering the costs of consultations, diagnosis, treatment, and rehabilitation during treatment at the health facility; laboratory tests, diagnostic imaging, and other diagnostic techniques; medicines on the list drawn up by the Ministry of Health; blood and transfusions; medical procedures and surgery; use of

medical equipment, and treatment beds; and prenatal examinations and delivery assistance. However, the extension of coverage to the general population has fallen short of expectations. The government has made several attempts—such as providing subsidized health insurance cards for the poor and mandating free health care for children—in an effort to improve coverage among vulnerable groups. Vietnam's health system is organized in four tiers: the Ministry of Health, provincial health bureaus, district health centers (DHCs), and commune health stations (CHSs). The strategy for successful health insurance reform in Vietnam was part of other broader poverty eradication policies. Later, it took the form of more stand-alone health financing programs for the poor and other target groups, including students and children. The government's goal is to provide universal insurance coverage by 2010 through a combination of Mandatory Health Insurance, targeted health insurance for the poor and voluntary insurance schemes (Ekman & Bales, 2008).

Australia: General practitioners act as gatekeepers and are mostly self-employed. Patients are not required to register with a GP, but Medicare will only reimburse specialist care that follows a referral from the general practitioner. GPs are paid on a fee-for-service (FFS) basis and also receive incentives for meeting the accreditation standards of the Royal Australian College of General Practitioners. Two-thirds of hospital beds are public, with the remainder being private and not-for-profit hospitals. Physicians are either salaried for their work in public hospitals and paid on a fee-for-service basis for their private patients, or do the majority of their work in private hospitals and receive FFS payments when treating public patients (Robertson, Gregory, & Jabbal, 2014).

France: France has a universal statutory health insurance (SHI) system that covers all residents. Most of the population has private health insurance to cover these cost-sharing obligations, but there are various additional co-payments that cannot be reimbursed by private plan providers. Supplementary private health insurance that covers services not included in the statutory benefit package is also available from nonprofit and private providers. Hospital physicians are salaried, and the hospital reimbursement system is based on diagnosis-related groups (DRGs). The system is highly computerized, since the introduction over ten years ago of a health insurance smart card known as the Carte Vitale. In most cases, patients have to pay a flat fee for each visit to a general practitioner. Most GPs (68%) and many specialists (51%) are self-employed, and most work in solo practices. They are paid on fee-for-service payments. Independent physicians provide the majority of private ambulatory and hospital services. Patients pay directly for service and are then partially reimbursed by the statutory health insurance system. The French health system is considered by some to be one of the best in the world, because of its universal coverage, fast access to treatment and high patient satisfaction scores (Robertson, Gregory, & Jabbal, 2014).

Germany: Germany has a statutory health insurance (SHI) scheme that covers all employed citizens. Statutory health insurance is provided by 134 not-for-profit health insurance funds,

financed through mandatory contributions by employees/pensioners. There are co-payments for inpatient stays and medical products. Physicians tend to work in their own private practices – around 60%in solo practices and 25% in dual practices. Registration with a general practitioner is not mandatory and GPs have no formal gatekeeping function. About half of the hospital beds are provided by public hospitals and one-third by private not-for-profit hospitals. Hospital staff are mainly salaried doctors. Inpatient care is paid for on admission through a system of diagnosis-related groups (DRGs). Hospital doctors do not usually treat outpatients. Regional associations of GPs and outpatient specialists negotiate contracts with health insurers on behalf of their members. Physicians are generally reimbursed on a fee-for-service basis, negotiated by the regional association with the SHI (Robertson, Gregory, & Jabbal, 2014).

Ireland: The Irish government is currently undergoing out a major restructuring of its health system, developing a system of compulsory health insurance for all citizens, known as Universal Health Insurance (UHI). Health care is largely funded through general taxation, though this is lower than in other OECD countries. The Irish National Health Service provides universal coverage of some services to the whole population, but care is only free to those on low incomes. An individual's entitlement to services is set at one of two levels, defined by a means test. Anyone without a GP visit card or medical card (around 60 per cent of the population) must pay the full cost of almost all primary care services, a minimum charge for hospital treatment and up to £108 a month for prescriptions. It does not offer universal primary care coverage. The Health Service Executive (HSE) is responsible for the delivery of health services. The HSE has four regional administrative areas: Western, Southern, Dublin/North-east, Dublin/Mid-Leinster. Since 2013, new directorates are in place – health and wellbeing, acute hospitals, primary care, social care, and mental health, overseeing all service developments. GPs are self-employed and often work in solo practices. Hospitals can be organized in three ways. They can be owned by the HSE and funded through general taxation, privately run (usually by the Roman Catholic Church) and funded through general taxation, or fully private and run for profit (Robertson, Gregory, & Jabbal, 2014).

Japan: The health insurance system in Japan provides universal coverage. More than 70%of adults have some form of private health insurance which is linked to their life insurance policy. Health care for people under age 75 (60%of the population) is funded by a health insurance system for employees and their families and by a national health insurance (NHI) system for the self-employed, retirees and the unemployed (40%). The central government determines which health services are to be covered by health insurance. These include medical treatment, prescription drugs, unlimited hospital stays and dental care. All health care services require co-payment at the time of access to treatment. The reimbursement system in Japan is traditionally a fee-for-service system. Physician reimbursement is based on a uniform national fee schedule. In 2003, a system known as combined diagnosis-

procedure was introduced. This is a flat fee-per-day payment that reduces over time and is designed to discourage prolonged hospital stays. Primary and specialty care are provided in clinics and are not considered separate disciplines. There is no gatekeeping and patients do not need to register with a particular primary care physician to access treatment. Japan is highly dependent on hospital care, with a large number of hospital beds, long average length of stay and high utilization rates (Robertson, Gregory, & Jabbal, 2014).

The Netherlands: The aim of reforms was to introduce a Single Health Insurance system in the Netherland. Since 2006, the Dutch have been required to purchase statutory health insurance from a choice of private non-profit insurers. Coverage is nearly universal, with less than 0.2%of the population uninsured. The statutory private health insurance system is funded through a community rated 'nominal' premium set by the insurer and averaging around £1,000 a year, as well as through an income-based contribution that is mainly covered by employers, although workers must pay taxes on the employer's contribution. Funds are pooled centrally and distributed to insurers based on a risk-adjusted capitation formula. Preventative care is not included in the standard benefit package but is paid separately by the government through general taxation. Some insurers offer financial incentives to encourage people to buy care from providers who have signed up to their network. Coverage is on an individual basis. The government determines fees. Insurers have to charge community rate premiums and accept any applicant for the basic coverage. Tax subsidies are available for low-income policyholders. Policyholders pay a flat-rate premium directly to their insurer. Reimbursements are a mix of capitation, fee-for-service, and bundled payments, which have been introduced for certain chronic conditions. Some primary care fees are determined at the national level, while others are freely negotiable. Hospital care is paid for with diagnosis-related bundled payments (since 2005), and tariffs are negotiated by insurers and providers. The system is based on GP gatekeeping, which means that patients need a referral before seeing a specialist. GPs are mainly independent contractors. The main lessons learned from The Dutch experience are as follows: (a) The Dutch experience with health reform shows that it is possible to fundamentally change the underlying model of health service financing, and (b) however, this was not a 'big bang' approach; it took more than 20 years for the Netherlands to unite its social insurance and private health insurance systems into a single scheme (Okma, 2018).

Korea: Korea has a statutory national health insurance (NHI) program that provides universal coverage. Around three-quarters (76%) of the population have private insurance to cover cost-sharing obligations in the public system, and private plans can also cover additional services. The national compulsory health insurance program is funded by a combination of employee and employer contributions, government payments (including general tax revenues and government contributions as an employer of civil servants), and out-of-pocket expenses. Patients are required to pay a percentage of their care costs. This percentage is set at 20%for inpatient costs; outpatient care rates range from 30%to 60%.

Certain groups covered by insurance are exempt from cost-sharing obligations. Primary care physicians are paid fee-for-service. Hospitals are paid on a fee-for-service basis and through diagnosis-related group case payments. The vast majority (approx. 90%) of primary care services in Korea are provided by independent private providers who operate in single handed and group practices. GPs do not have a gatekeeping function, so patients can easily access hospital care without a GP referral. Service delivery is determined by provider interests, and primary care focuses on curative rather than preventative services or health promotion. Hospitals in Korea are often run by doctors, universities, religious groups or non-governmental organizations. Although they are mostly private, the 2009 Medical Act does not allow them to have a for-profit status. However, hospital owners and managers are given a great deal of autonomy to manage their facilities as they see fit, leading many to behave as for-profit organizations (Robertson, Gregory, & Jabbal, 2014).

Sweden: The Swedish health system provides universal coverage to all legal residents. The majority of health care in Sweden is funded by the government at the national, municipal and county council level (82%), with the rest paid by the private sector. Government funding comes mainly from income taxes levied by municipalities and county councils, as well as some national and indirect tax revenues. Patients must pay a co-payment for each health care visit and for hospital stays. The level of cost sharing is determined locally and differs across the country. The government-funded system is comprehensive, covering primary care, inpatient and outpatient specialist care, emergency care, prescription drugs, mental health care, rehabilitation services, public health and preventative services, disability support services, patient transportation, dental care for children and young people and a large portionh of the cost of dental care for adults. Inpatient prescriptions are paid for in full by the County Council. People aged under 20 do not have to pay visit co-payments and receive free dental care. Primary care providers are funded through a mix of capitation, fee-for-service and some performance-based payments. The way hospitals are paid varies between counties, but the most frequently used mechanisms are global budgets or a mix of global budgets, diagnosis-related group type case payments and performance-related payments. County councils/regions are responsible for the organization and provision of health services in their areas, and the national government plays an oversight role. Around one-third of the country's 1,100 primary care practices are private. GPs and other primary care staff in public and private facilities are mainly salaried. GPs do not have a formal supervisory role, but they are generally the first point of call for people seeking care. Most hospitals are public and run by county councils. The majority of specialists and other hospital staff are salaried. The main lessons learned from the Sweden experience are: (a) The Swedish health care system is highly decentralized, with decision-making power concentrated at the country council and municipality levels, and (b) the central government has begun to play a stronger role, and defined waiting times at the national level to reduce the problems associated with long waiting times (Robertson, Gregory, & Jabbal, 2014).

United States of America: The U.S. health insurance system is not universal. There are significant gaps in coverage, particularly among young and low-income Americans and in 2012, 21%of adults between the ages of 19 and 64 were uninsured. The uninsured can also access care through public hospitals, government-funded community health centers and some private providers who offer charity care. Payment varies by type of insurance, and the same physician will be paid in different ways by different public and private insurers. Some pay-for-performance arrangements are in place. Hospitals are paid in a variety of ways, including fee-for-service and capitation, depending on the service provided and the insurer. Some hospital physicians are salaried, but the majority are paid on a fee-for-service basis. The majority of primary care and specialist physicians work in small private practices and there is no formal system of primary care gatekeeping, except in some managed care plans (Robertson, Gregory, & Jabbal, 2014).

Turkey: Turkey has accomplished remarkable improvements in health status in the last three decades, particularly after the implementation of the Health Transformation Program (HTP). The Turkish health care system has been undergoing a far-reaching reform process HTP since 2003 and radical changes have occurred in both the provision and the financing of health care services. Health services are now financed through a social security scheme covering the majority of the population, the General Health Insurance Scheme (GHIS), and services are provided both by public and private sector facilities. The Social Security Institution (SSI), financed by employers and employees' payments and by government contributions in the event of a budget deficit, has become a monopsonic (single-buyer) authority for the purchase of health care services. On the provision side, the Ministry of Health is the main actor and provides primary, secondary and tertiary care through its facilities throughout the country. Universities are also the main providers of tertiary care. The private sector has increased its reach in recent years, particularly after arrangements paved the way for the private sector to provide services to the SSI. The most important reforms since 2003 have been improvements in citizens' health status, the introduction of the GHIS, the instigation of a purchaser–provider split in the health care system, the introduction of a nationwide family practitioner scheme, the introduction of a performance-based payment system in Ministry of Health hospitals, and the transfer of ownership of the majority of public hospitals to the Ministry of Health (Tatar et al, 2011).

Italy: Italy's health-care system is a regionally based national health service that provides universal coverage largely free of charge at the point of delivery. The main source of financing is national and regional taxes, supplemented by co-payments for pharmaceuticals and outpatient care. Public sources accounted for 78.2% of total health spending. While the central government plays a stewardship role, setting the fundamental principles and goals of the health system and determining the core package of health services available to all citizens, the regions are responsible for organizing and delivering primary, secondary and tertiary health-care services as well as preventive and health promotion services. In the face of current

economic constraints that require containing or even reducing health care expenditures, the greatest challenge facing the health system is to meet budgetary goals without reducing the provision of health services to patients. This challenge is related to the other key challenge of ensuring equity across regions, where gaps in service provision and health system performance persist. Other issues include ensuring the quality of professionals managing facilities, promoting group practices and other models of integrated care organization in primary care, and ensuring that the concentration of organizational control by region of health care providers does not stifle innovation (Ferré et al, 2014).

APPENDIX 2. Key Demographic and Health Indicators for Countries having successfully reformed their Health Systems (2019 or The Nearest Year of Available Data)

Countries	Popul. (in thousans)	GDP per capita (US$)	Health Exp. (% of GDP)	Health Exp. (Per capita US$)	Gov. Share of THE (%)	OOP as % of THE	Life Exp. (years)	IMR	Physician Ratio (Per 1000)
Chile	18952	14897	9.0	1382	50.1	33.5	80	6	2.6
Colombia	50339	6432	7.2	459	67.8	16.3	77	12	2.2
Costa Rica	5048	12238	7.3	869	73.5	21.3	80	8	2.9
Estonia	1327	23660	6.4	1300	74.7	23.7	78	2	4.5
Kyrgyz Republic	6457	1309	6.2	79	38.0	56.4	71	16	2.2
Sri Lanka	21803	3853	3.8	159	43.0	49.8	77	6	1.0
Thailand	69626	7808	3.8	247	76.1	11.2	77	8	0.8
Tunisia	11695	3318	7.2	251	57.1	39.1	77	15	1.3
Vietnam	96462	2715	5.5	130	48.6	45.3	75	16	0.8
Australia	25364	54907	9.2	5332	68.9	18.2	83	3	3.7
France	67060	40494	11.3	4380	77.1	9.4	83	4	3.3
Germany	83133	46259	11.3	5033	77.7	12.7	81	3	4.2
Ireland	4941	78661	7.2	4977	73.3	12.3	82	3	3.3
Japan	126265	40247	10.9	4169	84.1	12.9	84	2	2.4
Netherlands	17333	52448	10.1	4911	64.4	11.1	82	4	3.6
Korea Rep.	51709	31762	7.6	2283	57.4	33.7	83	3	2.4
Sweden	10285	51610	11.0	5905	83.7	15.0	83	2	4.0
United States	328240	65118	17.1	10246	50.2	11.0	79	6	2.6

Source: Health Nutrition and Population Statistics, WB, 2020. *Notes:* THE: Total health expenditure

APPENDIX 3. The Reform Areas of Best Practice or Successful Countries according to international data

Countries	Governance and Leadership	Financing	Delivery	Human Resources	Medical Supplies and Technologies	Health Information System
Chile	√	√	√			
Colombia	√	√	√			
Costa Rica	√	√	√			
Ecuador	√	√	√			
Estonia		√	√			
Kyrgyz Republic	√	√	√			√
Sri Lanka	√	√	√			
Taiwan	√	√				
Thailand	√	√	√			
Tunisia		√	√	√		
Vietnam	√	√				
Australia		√	√			
France		√				√
Germany		√	√			
Ireland		√	√			
Japan		√				
Netherlands	√	√				
New Zealand	√	√	√			
Korea Rep.		√				
Sweden		√	√			
United States						
Turkey	√	√	√		√	√

Source: The information was gathered by the authors

APPENDIX 4. HEALTH SYSTEM EVALUATION SURVEY

Dear Participant,

Welcome to the survey titled "Health System Evaluation Survey", which is being carried out by the Statistical, Economic and Social Research and Training Centre for Islamic Countries (SESRIC), a subsidiary organ of the Organisation of Islamic Cooperation (OIC), in partnership with the Libyan Program for Reintegration and Development (LPRD). The aim of the survey is to collect information on different aspects of the Libyan health system. The obtained data will be used as an important input in evaluating different aspects of the health system in Libya and identifying areas for reform.

Your participation in this survey is voluntary. All information to be obtained from this survey will remain confidential, and will be used to generate appropriate reform proposals in the process of reforming the health system in Libya. If you are not willing to participate in this survey, please feel free to leave at any time during the survey.

The survey is expected to be completed by senior health officials and health workers from relevant national authorities, hospitals and other health management offices. Please do not write your name or provide any identifying information on the survey.

The survey has two sections. The first section includes questions on the profile of respondents and their general evaluation of the health system. The second section asks you to rate six main aspects of health care system. The second part looks in more detail at selected issues related to delivery, human resources, health information, medical supplies, financing and governance in Libya on the Likert Scale. The survey takes approximately 25-30 minutes to complete.

For any further inquiries, please contact us through research@sesric.org or tajoury@cahel.org.ly.

Thank you very much for participating in this survey.

SECTION I. DEMOGRAPHIC CHARACTERISTICS AND HEALTH SYSTEM EXPERIENCE

1. **Gender** ( ) Female ( ) Male

2. **Your Age**
   - ( ) Less than 20
   - ( ) 20-29 years old
   - ( ) 30-39 years old
   - ( ) 40-49 years old
   - ( ) 50-59 years old

( ) 60 years old and more

3. **Which health region are you working in?**
   ( ) Eastern
   ( ) Benghazi
   ( ) Middle
   ( ) South
   ( ) Tripoli
   ( ) Western

4. **Which health profession were you trained in?**
   ( ) Medicine
   ( ) Nursing
   ( ) Pharmacy
   ( ) Dentist
   ( ) Health care management
   ( ) Other (please specify): ……

5. **Are you working on a regular basis?**
   ( ) Yes, I am working full time
   ( ) Yes, but I am working part time
   ( ) No, I am unemployed

6. **In which institution do you work:** ……..
7. **What is your duty?**
   ( ) Physician
   ( ) Nurse
   ( ) Pharmacist
   ( ) Dentist
   ( ) Health care manger
   ( ) Other (please specify): ……

8. **How do you define your income level?**
   ( ) Lower than average per capita national income
   ( ) At around average per capita national income
   ( ) Above average per capita national income

9. **How would you rate the quality and appropriateness of the services provided by primary health care facilities?**
   ( ) Very unsatisfactory
   ( ) Unsatisfactory
   ( ) Neither satisfactory nor unsatisfactory
   ( ) Satisfactory
   ( ) Very satisfactory

10. **How would you rate the quality and appropriateness of the services provided by hospitals?**

( ) Very unsatisfactory
( ) Unsatisfactory
( ) Neither satisfactory nor unsatisfactory
( ) Satisfactory
( ) Very satisfactory

11. **How would you rate the quality and appropriateness of the services provided by private primary health care facilities or hospitals?**
( ) Very unsatisfactory
( ) Unsatisfactory
( ) Neither satisfactory nor unsatisfactory
( ) Satisfactory
( ) Very satisfactory

12. **How would you rate the quality and appropriateness of medicine and medical material provided by public primary health care facilities or hospitals?**
( ) Very unsatisfactory
( ) Unsatisfactory
( ) Neither satisfactory nor unsatisfactory
( ) Satisfactory
( ) Very satisfactory

13. **How would you rate the level of out-of-pocket payments in the health system in Libya to get affective and appropriate services and medicines?**
( ) Very Low
( ) Low
( ) Acceptable enough
( ) High
( ) Very high

14. **How would you rate the overall performance of the private health sector in Libya?**
( ) Very unsatisfactory
( ) Unsatisfactory
( ) Neither satisfactory nor unsatisfactory
( ) Satisfactory
( ) Very satisfactory

15. **How would you rate the overall performance of Libyan Health System?**
( ) Very unsatisfactory
( ) Unsatisfactory
( ) Neither satisfactory nor unsatisfactory
( ) Satisfactory
( ) Very satisfactory

16. **Do you believe that the Libyan Health System needs reforming?**

( ) Yes
( ) No

17. **If you believe that reforming health sector is necessary for Libya, which of the following reasons increases this necessity? Please order from 1 to 5.**
( ) Rising costs
( ) Rising expectations
( ) Unmet expectations
( ) Political conflict
( ) Corruption
( ) Other (Please specify)……

18. **How would you rank the following potential problems in the Health System in Libya from the highest to lowest priority to be addressed? Please rank the priorities from one (1) to six (6).**
( ) Access
( ) Quality
( ) Safety
( ) Cost
( ) Coverage
( ) Efficiency
( ) Other (Please specify)……

19. **How would you rank the top six aspects of a health system, from the highest to lowest priority, to reduce the problems observed in Libyan Health System? Please rank priorities from one (1) to six (6).**
( ) Delivery
( ) Workforce
( ) Health Information System
( ) Medical Supplies
( ) Financing
( ) Leadership and Governance
( ) Other (Please specify)……

SECTION II. ASSESSING MAIN ASPECTS OF LIBYAN HEALTH SYSTEM

This section of survey aims at assessing the performance of the Libyan Health System by considering the main aspects of a well performing health system. You will be provided a brief explanation of each element and then asked to rate whether or not the Libyan Health System, in the aspects questioned, is performing well. Please consider your experience with the ***Libyan Health System*** over the past 12 months when evaluating its performance. Please read each statement carefully to asses the performance of key aspects and choose one answer that best describes your opinion on this aspect. Please indicate your thoughts honestly and candidly on a 5-point Likert scale.

1. DELIVERY: Means providing effective, safe andquality health interventions to those who need them, when and where they are needed, with minimum waste of resources.

How would you rate overall health system of Libya in terms of producing and delivering health services (prevention, treatment, personal or non-personal health services)?

	Indicators	**Very Poor (1)**	**Poor (2)**	**Moderate (3)**	**Good (4)**	**Very Good (5)**
A.	**PRIMARY CARE (PREVENTIVE AND PROMOTIVE)**					
1	Capable of providing effective and right primary care services to all					
2	Ability to access the needed services in all primary care providers					
3	Ability to equip with better and advance health technology					
4	Physical accessibility of primary health care providers					
5	Meeting patient needs in acceptable time limits					
6	Referring and leading patients to most appropriate health facilities and providers					
7	The number of primary health care providers					
8	The fair distribution of primary health care providers across country and regions					
9	The accessibility of rural population to primary health care providers					
10	The physical condition of primary health care facilities					
11	The coordination between primary health care facilities and referral hospitals					
12	Supplying needed effective and quality material and medicine to primary health care facilities					
13	The satisfaction level of citizens with primary health care facilities					

14	The availability of preventive and curative services for maternal, newborn and child health					
B.	**SECONDARY AND TERTIARY CARE (TREATMENT)**					
15	Capable of providing effective and right treatment in hospitals					
16	Ability to access the needed treatment services in all hospitals					
17	Ability to equip hospitals with better and advance health technology					
18	The number of hospitals					
19	The fair distribution of hospitals across country and regions					
20	The accessibility of rural population to hospitals					
21	The level of appropriateness of network relations among hospitals					
22	The physical condition of secondary and tertiary care facilities					
23	Management of secondary and tertiary care facilities					
24	Supplying needed effective and quality material and medicine to secondary and tertiary care facilities					
25	Staffing secondary and tertiary care facilities with skilled health care personnel					
26	The level of efficiency in terms of occupancy rate					
27	Ability to meet the majority of health needs of patients at the same hospital without referring them to other hospitals and districts					
28	The satisfaction level of citizens with secondary and tertiary care facilities					
29	Supplying enough and better-quality medicine and drugs to secondary and tertiary care facilities					

2. HEALTH WORKFORCE: A well-performing health workforce is one that works responsively (meeting client expectations in terms of easy access, provider selection, cleanliness, etc), equitably (treating everybody acceptably) and efficiently to achieve the best possible health outcomes.

How would you assess the current situation of health workforce in Libya in terms of?

	Indicators	**Very Poor (1)**	**Poor (2)**	**Moderate (3)**	**Good (4)**	**Very Good (5)**
30	The number of physicians					
31	The distribution of physicians across regions and cities					
32	The number of nurses/midwifes					
33	The distribution of nurses/midwifes across regions and cities					
34	The number of pharmacists					
35	The distribution of pharmacists across regions and cities					
36	The quality and safety of services provided by Health care personnel					
37	The responsiveness level of Health care personnel					
38	The fairness of services provided by Health care personnel					
39	Education and training capacity of health system					
40	The quality of continuous education for health workforce					
41	The motivation of health care personnel					
42	The number of specialized physicians and nurses					
43	The satisfaction level of citizens with health care personnel					
44	The salaries of health care personnel					

3. HEALTH INFORMATION: Ensures the production, analysis, dissemination and use of reliable and timely information on health determinants, health system performance and health status to make sound decisions.

How would you rate the current health information system (HIS) in Libya in terms of?

	Indicators	**Very Poor (1)**	**Poor (2)**	**Moderate (3)**	**Good (4)**	**Very Good (5)**
45	The quality of health information system					
46	The reliability of health information system					
47	Capable of providing timely data and information					
48	Capable of disseminating of information					
49	The ability of personnel using health information system					
50	Health information infrastructure					
51	Monitor health system performance in a timely manner					
52	Capability of obtaining data from all facilities at all levels					
53	Producing updated data on disease burden, service usage and outcomes					
54	The availability of skilled human resources for health information system					
55	The ability to use data and statistics to make better decisions					
56	The ability to use e-health solutions for health information system					

4. MEDICAL SUPPLIES: A well-functioning health system ensures equitable access to essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness, and their scientifically sound and cost-effective use.

How would you rate the current situation of medical supply system in Libya in terms of?

	Indicators	**Very Poor (1)**	**Poor (2)**	**Moderate (3)**	**Good (4)**	**Very Good (5)**
57	Accessibility to effective medicine and other pharmaceutical products					
58	The affordability of effective medicine and other pharmaceutical products					
59	The availability of effective medicine and other pharmaceutical products					
60	Rational prescription among physicians					
61	Fair distribution of medical drugs and supplies among regions and cities					
62	Regulations and measures for counterfeit drugs					
63	Regulations for importing drugs					
64	Regulations for good drug manufacturing implementations					
65	Regulations for pricing					
66	Regulations for storing and dispensing drugs across the country					
67	Supply management and regulation of medical products					

5. FINANCING: A good health financing system mobilizes sufficient funds for health and protects people from catastrophic health expenditures by ensuring that they use needed services, and it provides incentives for providers and users to be efficient.

How would you rate the current health financing system in Libya in terms of?

	Indicators	**Very Poor (1)**	**Poor (2)**	**Moderate (3)**	**Good (4)**	**Very Good (5)**
68	Allocating enough fund to health system					
69	Fair distribution among regions and municipalities providing Health care					
70	Supporting lifesaving or healthy life health programs financially					
71	Providing incentives to Health care providers to increase value for money					
72	Using effective reimbursement methods to increase efficiency among Health care providers (global budget, DRG, etc.)					
73	Using purchasing mechanisms strategically to increase efficiency					
74	Making cost-effective contracts with providers					
75	Auditing medical bills of providers					
76	Fair and adequate financing of primary Health care facilities					
77	Protecting the poor against catastrophic health expenditure by eliminating higher out-of-pocket health expenditures					
78	Paying cost-effective Health care technologies					
79	The effectiveness of purchasing decisions					
80	The efficacy of purchaser-provider split					

6. LEADERSHIP AND GOVERNANCE: Involves preparing strategic policy frameworks to enable overall health system to work in effective, efficient and responsive way by making sound, transparent and accountable decisions.
How would you rate the leadership and governance roles of authorities and organizations responsible for health system in Libya in terms of?

Indicators		Very Poor (1)	Poor (2)	Moderate (3)	Good (4)	Very Good (5)
81	Creating a clear vision for whole health system					
82	Making strategic plans for health system and its components					
83	Managing health system and Health care facilities in an effective and efficient manner					
84	Delegating administrative and financial responsibilities and authorities adequately					
85	Transparency in all levels and decisions					
86	Accountability of given decisions					
87	Considering the views of main health stakeholders in decisions					
88	The capacity of managers and administrators to lead and governs the health system					
89	Making appropriate regulations at all levels					
90	Providing and protecting patient rights					
91	The coordination level among local health authorities and municipalities					
92	Creating or using appropriate incentives for managers to manage their facilities in efficient and responsible manner					
93	The role of MoH in planning and coordinating activities of Libyan Health System					

APPENDIX 5. THE OPEN-ENDED QUESTIONS FOR ASSESSING BUILDING BLOCKS OF LIBYAN HEALTH SYSTEM DURING QUALITATIVE SURVEY

1. DELIVERY: Means providing effective, safe, quality health interventions to those that need them, when and where needed, with minimum waste of resources.

How would you rate overall health system of Libya in terms of producing and delivering many kinds of health services (preventive, treatment, personal or non-personal heath services?

Effectiveness (right health care):
Safety (technical quality):
Quality (technical and perceived quality):
Competition between public and private sector:
Freedom to choose Health care provider:

What are the best solutions for increasing effectiveness, safety and quality of delivering health services in Libya?

2. HEALTH WORKFORCE: A well-performing health workforce is one that works in ways that are responsive, fair and efficient to achieve the best health outcomes possible.

How would you rate the current situation of health workforce in Libya in terms of?

Quantity (number of health professionals):
Quality (practicing profession in line with international standards):
Responsiveness (approaching manner to patients):
Fairness (treating patients fairly):
Distribution (fair distribution among regions based on needs or population density):

What are the best solutions for improving current status of health workforce in Libya?

3. HEALTH INFORMATION: Ensures the production, analysis, dissemination and use of reliable and timely information on health determinants, health system performance and health status to make sound decisions.

How would you assess the current health information system in Libya in terms of?

Quality:
Adequacy:
Reliability:

Timely:
Dissemination of information:

What are the best solutions for increasing the effectiveness of health information system in Libya?

4. MEDICAL SUPPLIES: A well-functioning health system ensures equitable access to essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness, and their scientifically sound and cost-effective use.

How would you assess the current situation of medical supplies in Libya in terms of?

Accessibility:
Price:
Availability:
Rational prescription:
Rational use by patients:
Fair distribution among regions:

What are the best solutions for increasing the effectiveness of medical supply and pharmaceutical sector in Libya?

5. FINANCING: A good health financing system raises adequate funds for health and protects people from catastrophic health expenditures by ensuring them to use needed services, and it provides incentives for providers and users to be efficient.

How would you assess the current health financing system in Libya in terms of?

Raising adequate fund:
Fair distribution among regions and Health care facilities:
Protecting poor against catastrophic health expenditures:
Paying for cost-effective health technologies:
Generosity to provide basic and advanced health technology:
Reimbursement type:
Strategic purchasing:
Auditing medical bills issued by providers (if there is):
Fair and adequate financing of primary Health care facilities:
Availability of incentive systems to produce health services in an effective and efficient manner:

What are the best solutions for increasing the effectiveness of health financing system in Libya?

6. LEADERSHIP AND GOVERNANCE: Involves preparing strategic policy frameworks to enable overall health system to work in effective, efficient and responsive way by making sound, transparent and accountable decisions.

How would you assess the leadership and governance roles of authorities and organizations responsible for health system in Libya in terms of?

Strategic planning and management:
Authority delegation:
Transparency:
Accountability:
Considering the views of stakeholders:
Appropriateness of regulations:
Efficient and effective management of Health care organizations:
Patient rights:

What are the best solutions for increasing the effectiveness of leadership and governance roles in Libya?

APPENDIX 6. ROADMAP FOR HEALTH REFORM PROPOSALS

Health System Aspects	Sub-Domains	Recommendations	Responsible Authority	Benefiting Authorities	2021	2022	2023	2024	2025
Governance and leadership	Direction	Setting a clear direction and strategy	The MoH	The Parliament, The Prime ministry, The MoH, Main Stakeholders, Citizens	x				
Governance and leadership	Direction	Developing a clear vision and mission for Libyan health system	The MoH	The Parliament, The Prime ministry, The MoH, Main Stakeholders, Citizens	x	x			
Governance and leadership	Monitoring	Developing quality and performance indicators for hospitals	The MoH	The MoH, HIF, Regional Health Authorities, Health Facility Managers	x	x			
Governance and leadership	Monitoring	Developing quality and performance indicators for primary care providers	The MoH	The MoH, HIF, Regional Health Authorities, Health Facility Managers	x	x			
Governance and leadership	Monitoring	Developing performance index for hospital management	The MoH	The MoH, HIF, Regional Health Authorities, Health Facility Managers	x	x			
Governance and leadership	Monitoring	Introducing field inspectors under the MoH	The MoH	The MoH, HIF, Regional Health Authorities, Health Facility Managers		x			
Governance and leadership	Monitoring	Introducing "Public Tendering Law"	The Prime ministry, The MoH, The MoF	The MoH, The MoF, HIF, Regional Health Authorities, Health Facility Managers	x	x			
Governance and leadership	Monitoring	Introducing "Public Procurement Organization"	The Prime ministry, The MoH, The MoF	The MoH, The MoF, HIF, Regional Health Authorities, Health Facility Managers	x	x			

Health System Aspects	Sub-Domains	Recommendations	Responsible Authority	Benefiting Authorities	2021	2022	2023	2024	2025
Governance and leadership	Monitoring	Increasing the effectiveness of National Auditing Organization	The Prime ministry, The MoH, The MoF	The MoH, The MoF, HIF, Regional Health Authorities, Health Facility Managers	x	x			
Governance and leadership	Organization	Introducing autonomous regional health authorities	The MoF	The MoH, Regional Health Authorities, Health Facility Managers	x	x			
Governance and leadership	Organization	Introducing Regional Health Officers for health regions	The MoH	The MoH, Regional Health Authorities, Health Facility Managers			x		
Governance and leadership	Organization	Establishing coordination procedures between the MoH and regional health authorities	The MoH, Municipalities	The MoH, Regional Health Authorities, Health Facility managers, Municipalities	x	x			
Governance and leadership	Reform Process	Creating committee for each health system aspect	The MoH	The Parliament, The Prime ministry, The MoH, Main Stakeholders	x				
Governance and leadership	Reform Process	Transparency in health reform process	The Parliament, The MoH, Main Stakeholders, Media	The Parliament, The Prime ministry, The MoH, Main Stakeholders	x	x	x	x	x
Governance and leadership	Reform Process	Creating a concrete program for health system transition	The Prime ministry, The MoH	The Parliament, The Prime ministry, The MoH, Main Stakeholders	x	x			
Governance and leadership	Reform Process	Creating coordination committee for health reform proposals	The MoH	The Parliament, The Prime ministry, The MoH, Main Stakeholders	x				
Governance and leadership	Reform Process	Monitoring health reform implementations and achievements	Coordinating Committee for health reforms	The MoH	x	x	x	x	x
Governance and leadership	Regulation	Listing, checking, updating current	The MoH	The Parliament, The Prime ministry, The	x	x	x	x	x

Health System Aspects	Sub-Domains	Recommendations	Responsible Authority	Benefiting Authorities	2021	2022	2023	2024	2025
		health system regulations		MoH, Main Stakeholders					
Governance and leadership	Regulation	Developing radical appropriate health system regulations	The Parliament, The MoH	The Parliament, The Prime ministry, The MoH, Main Stakeholders	x	x			
Governance and leadership	Regulation	Updating current Medical Law	The Parliament, The MoH, The Associations, Non-government organizations	The Parliament, The Prime ministry, The MoH, Main Stakeholders	x	x			
Governance and leadership	Stakeholders	Gaining trust of citizens	The Prime ministry, The MoH	The Parliament, The Prime ministry, The MoH, Main Stakeholders	x	x	x	x	x
Governance and leadership	Stakeholders	Involving stakeholders in reform process	The MoH	The MoH, Main Stakeholders	x	x	x	x	x
Governance and leadership	Stakeholders	Regulations for patient rights and creating patient complaint system	The Parliament, The MoH	The Parliament, The Prime ministry, The MoH, Main Stakeholders	x	x			
Health Financing	Cost control	Introducing co-payments for drugs and health services	HIF	HIF, The MoH, Regional Health Authorities, Health Facility Managers, Private Providers, Citizens, Main Stakeholders		x			
Health Financing	Cost control	Encouraging the use of generic drugs	The MoH, HIF	HIF, The MoH, Regional Health Authorities, Health Facility Managers, Private Providers, Citizens, Main Stakeholders	x	x	x	x	x

Health System Aspects	Sub-Domains	Recommendations	Responsible Authority	Benefiting Authorities	2021	2022	2023	2024	2025
Health Financing	Cost control	Introducing external and internal pricing for medical supplies	The MoH, HIF	HIF, The MoH, Regional Health Authorities, Health Facility Managers, Private Providers, Citizens, Main Stakeholders	x	x			
Health Financing	Cost control	Introducing positive list of medicine	The MoH, HIF	HIF, The MoH, Regional Health Authorities, Health Facility Managers, Private Providers, Citizens, Main Stakeholders	x	x			
Health Financing	Cost control	Creating committees for economic appraisal of medical supplies and technologies	The MoH, HIF	HIF, The MoH, Drug Producers and Importers	x	x			
Health Financing	Cost control/ effectiveness	Developing rational drug use policies	The MoH, HIF	Whole country	x	x	x		
Health Financing	Cost control	Introducing acceptable and affordable co-payment for health services received from private health care providers	The MoH, HIF, Private Providers	HIF, The MoH, Regional Health Authorities, Health Facility Managers, Private Providers, Citizens, Main Stakeholders		x	x	x	x
Health Financing	Monitoring	Online data collection from public and private health care providers	HIF	HIF, The MoH		x	x	x	x
Health Financing	Monitoring	Introducing monitoring and auditing department under health insurance fund	The MoH, The MoF, HIF	The MoF, HIF, The MoH, Regional Health Authorities	x	x	x	x	x
Health Financing	Organization	Activating and increasing effectiveness of health insurance fund	The MoH, The MoF	The MoF, HIF, The MoH, Regional Health Authorities	x	x			
Health Financing	Organization	Creating regional health insurance fund brunches	The MoH, The MoF	The MoF, HIF, The MoH,		x			

Health System Aspects	Sub-Domains	Recommendations	Responsible Authority	Benefiting Authorities	2021	2022	2023	2024	2025
				Regional Health Authorities					
Health Financing	Purchasing	Making contracts with private health care providers	Created Health Insurance Fund (HIF)	HIF, The MoH, Private Providers, Regional Health Authorities		x			
Health Financing	Purchasing	Preparing and updating price list for contracted services and procedures	HIF	HIF, The MoH, Private Providers, Regional Health Authorities	x				
Health Financing	Purchasing	Developing capitation payment formula for primary care providers	HIF	HIF, The MoH, Private Providers, Regional Health Authorities, Primary Care Providers, Citizens	x	x			
Health Financing	Purchasing	Global budget payment for university and the MoH hospitals	HIF	HIF, The MoH, Universities, Regional Health Authorities		x			
Health Financing	Resource Generation	Introducing revolving fund mechanism to collect money for the MoH and university hospitals	The MoF, The MoH, Universities	The MoH, Universities, Citizens, Regional Health Authorities, Health Facility Managers		x	x	x	x
Health Financing	Resource Allocation	A formula-based resource allocation procedure	The MoH, The MoF	HIF, The MoH, Regional Health Authorities, Citizens		x			
Health information system	HIS	Data qualification	The MoH	The MoH, Regional Health Authorities, Health Facility Managers	x	x	x	x	
Health information system	HIS	Implementation road map of Health Information Center	The MoH	The MoH, Regional Health Authorities, Health Facility Managers	x	x	x	x	x
Health workforce	Management	Selecting hospital managers	The MoH, Regional Health Authorities	The MoH, Regional Health Authorities, Health Facility Managers		x	x	x	x
Health workforce	Planning	Planning and coordination of	The MoH	The MoH, Regional Health	x	x			

Health System Aspects	Sub-Domains	Recommendations	Responsible Authority	Benefiting Authorities	2021	2022	2023	2024	2025
		training physicians in certain specialties		Authorities, Health Facility Managers					
Health workforce	Planning	Establishing effective HR department for public employees	The MoH, The Ministry of Planning	The MoH, Regional Health Authorities, Health Facility Managers	x	x			
Health workforce	Planning	Statutory employment in remote and rural areas for new graduated physicians	The MoH	The MoH, Regional Health Authorities, Health Facility Managers	x	x			
Health workforce	Salaries	Increasing salaries of health care professionals working for public	The MoH, The MoF	The MoH, Regional Health Authorities, Health Facility Managers, Employees	x	x			
Health workforce	Salaries	Introducing performance-based payment system	The MoH	The MoH, Regional Health Authorities, Health Facility Managers, Employees		x	x	x	
Medical supplies and technologies	Organization	Improving medical supply chain and its management	The MoH, HIF, MSO, Private Providers	The MoH, Regional Health Authorities, Health Facility Managers, MSO	x	x			
Medical supplies and technologies	Organization	Reorganization of Medical Supply Organization	The MoH	The MoH, Regional Health Authorities, Health Facility Managers, MSO	x	x			
Medical supplies and technologies	Regulation	Regulations for drug registration, licensing, pricing, distribution, importing, etc.	The MoH, MSO	The MoH, Regional Health Authorities, Health Facility Managers, MSO, HIF	x	x	x	x	x
Service Delivery and organization	Delivery	Introducing the system of FPCs or GPs in primary care	The MoH, HIF, Regional Health Authorities	The MoH, Regional Health Authorities, Health Facility Managers, Employees, Citizens	x	x	x	x	x

Health System Aspects	Sub-Domains	Recommendations	Responsible Authority	Benefiting Authorities	2021	2022	2023	2024	2025
Service Delivery and organization	Delivery	Classifying hospitals by their capacities	The MoH, HIF, Regional Health Authorities	The MoH, Regional Health Authorities, Health Facility Managers, Employees, Citizens		x	x	x	
Service Delivery and organization	Delivery	Introducing regional research and training hospitals	The MoH, HIF, Regional Health Authorities	The MoH, Regional Health Authorities, Health Facility Managers, Employees, Citizens, HIF		x	x	x	x
Service Delivery and organization	Delivery	Introducing national research and training hospitals	The MoH, HIF, Regional Health Authorities	The MoH, Regional Health Authorities, Health Facility Managers, Employees, Citizens, HIF		x	x	x	x
Service Delivery and organization	Delivery	Increasing the role of private pharmacies in disseminating prescribed medicine by public health care providers	The MoH, HIF, MSO, Private Providers	The MoH, Regional Health Authorities, Health Facility Managers, Citizens, HIF, Private Pharmacies	x	x	x		
Service Delivery and organization	Delivery	Making hospitals responsible for providing inpatients' drugs during hospital stay	The MoH, HIF, MSO	The MoH, Regional Health Authorities, Health Facility Managers, Citizens, HIF	x	x	x		
Service Delivery and organization	Organization	Creating a board of health regions (BHRs)	The MoH, Regional Health Authorities	The MoH, Regional Health Authorities, Health Facility Managers, HIF, Municipalities		x	x	x	
Service Delivery and organization	Organization	Redefining the role of primary health care providers	The MoH, Regional Health Authorities	The MoH, Regional Health Authorities, Health Facility Managers, HIF, Municipalities	x	x	x	x	x
Service Delivery and organization	Organization	Redefining the roles of current public health care facilities at the primary and secondary level	The MoH, Regional Health Authorities	The MoH, Regional Health Authorities, Health Facility Managers,	x	x	x	x	x

Health System Aspects	Sub-Domains	Recommendations	Responsible Authority	Benefiting Authorities	2021	2022	2023	2024	2025
				HIF, Municipalities					
Service Delivery and organization	Organization	Introducing referral system among public health care providers	The MoH, Regional Health Authorities	The MoH, Regional Health Authorities, Health Facility Managers, HIF, Municipalities		x	x	x	x
Service Delivery and organization	Purchasing	Enabling hospitals to purchase their medical supply and needed materials by their own bidding process	The MoH, Universities, The MoF, Public Procurement Organization	The MoH, Regional Health Authorities, Health Facility Managers		x	x	x	x
Service Delivery and organization	Training	Training PHC staff	The MoH, Regional Health Authorities	The MoH, Regional Health Authorities, Health Facility Managers, Municipalities	x	x	x	x	x
Service Delivery and organization	University hospitals	Increasing autonomy of university hospitals and designing funding mechanism	The MoH, The MoF, HIF, Universities	The MoH, Regional Health Authorities, Health Facility Managers, Universities, HIF	x	x	x		